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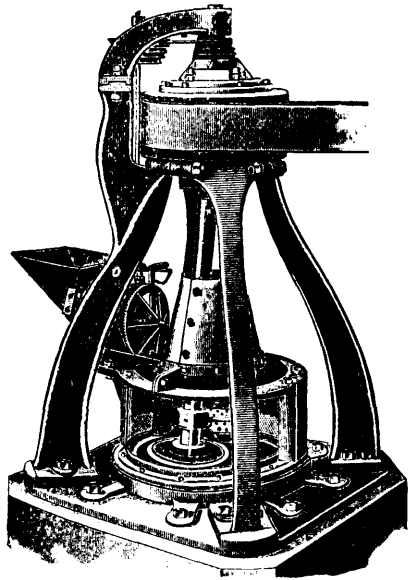
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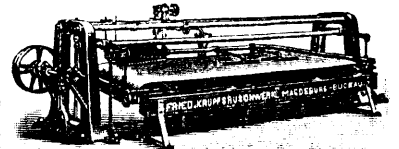
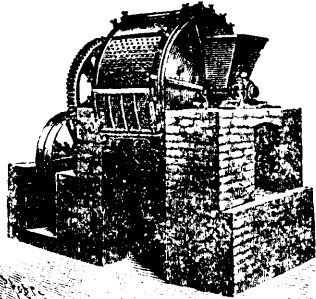
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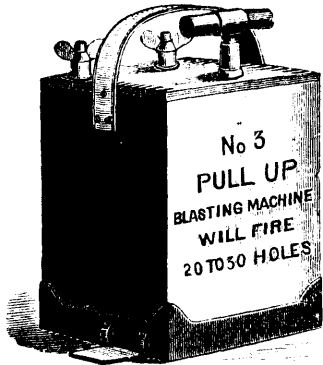
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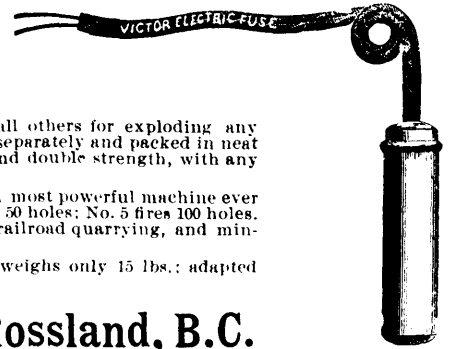
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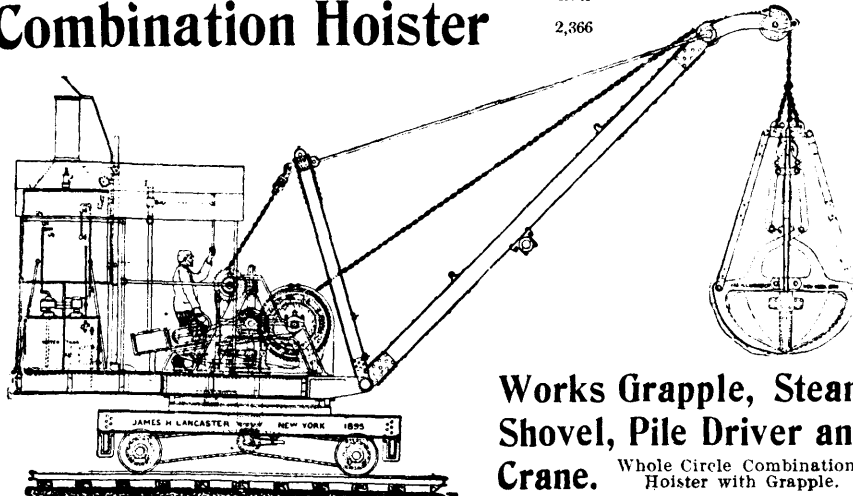
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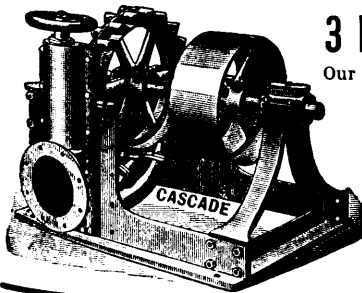
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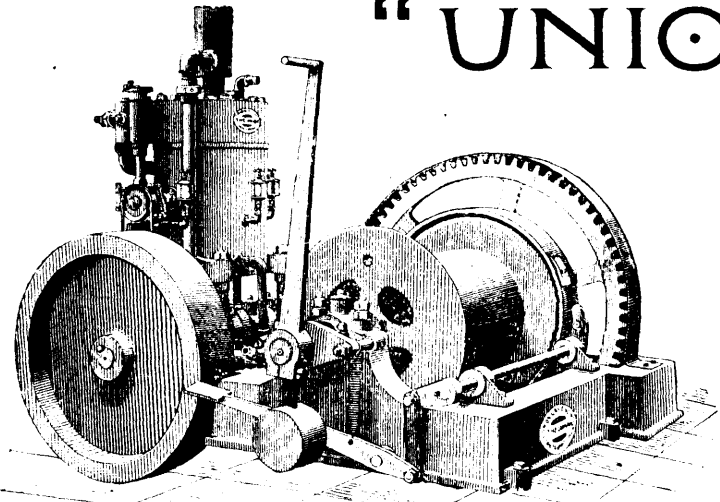
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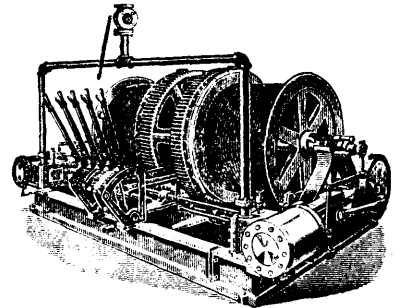
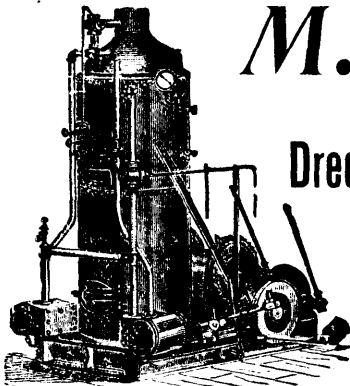
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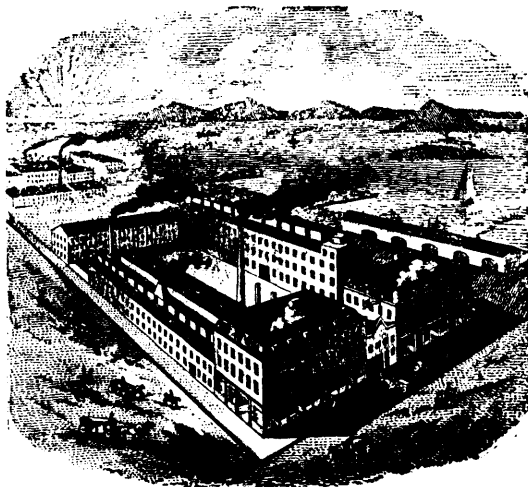
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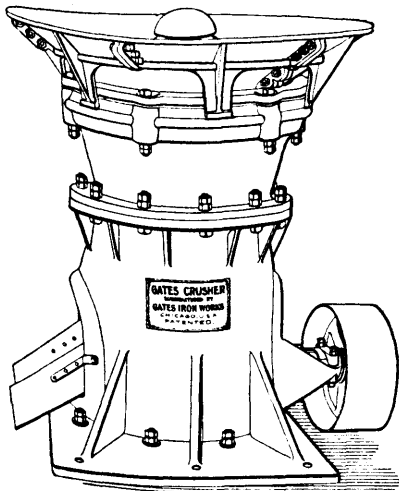
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The Mining Record.

Vol. III.

APRIL, 1897.

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Devoted to the Mining Interests of British Columbia.

PUBLISHED BY

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ALEXANDER BEGG, Editor.

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The publishers of the British Columbia "Mining Record" being in daily receipt of numerous inquiries respecting mining companies which they find it impossible in many instances to answer, have resolved to give the directors of these incorporations an opportunity to place before the investing public such information each month as they may wish to give in regard to the development of their properties and the general management of their affairs. Each company will be at liberty to give just such information to the public as they deem desirable and will be responsible for the correctness of the same.

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THE DIRECTORY OF MINES.

The first number of this useful work has been issued, and the demand for copies has exceeded the most sanguine expectations of the publishers. The second number will be issued about 1st May next, and will contain a large amount of additional information. The number of claims listed will be very considerably increased in each number of the Directory, until finally nearly every mining claim in British Columbia will be included, thus enhancing the value of the book.

MINING SCENES.

The right to publish this handsome volume has been disposed of to Mr. Arthur Wheeler of Vancouver, and he is now busily engaged in the work. When issued it will be placed in a large number of the principal Hotels and other public places in the Old Country, in the saloons of the Transatlantic liners, and in the chief hotels, inland steamers and terminal stations of railways in the United States and Canada, thus giving the Mining industry of British Columbia the best advertisement it has yet had.

EDITORIAL NOTES.

THE Canadian tariff, so far as it relates to mining machinery, is at present in a very unsatisfactory state, and we trust that at the approaching session of Parliament it will be so amended as to make it clear to importers what is dutiable and what is admitted free.

It is generally supposed that mining machinery of a kind not manufactured in Canada is admitted free, and there is every reason to think that the Act so intends it.

But unfortunately it is left to collectors of customs to put their own construction on the clause relating to free admission, and some regard it in a narrow and others in a broad light.

The consequence is that precisely the same description of machine may be pronounced dutiable

at one customs house and at another allowed to come in free, and thus importers of machinery do not know where they stand.

If the interpretation placed by some collectors on the meaning of the clause relating to free admission is correct, then the provision in the tariff is practically a dead letter, and no mining machinery of any kind can properly be imported into Canada without having to pay duty.

The trouble seems to lie in the fact that some collectors hold the opinion that any imported machine capable of being made in Canada is dutiable, no matter whether it may have improvements which Canadian machines do not possess.

Take, for instance, stamp mills. According to those collectors, all stamp mills are dutiable, because stamp mills are made in Canada. Yet it is well known that there are various kinds of these machines, some of which are protected by patent rights, which prevent their being made in Canada. Should improvements of this kind have no value in the eyes of the customs department? We think they should. But we know for a fact that in some cases they do not, and people have been called upon to pay duty on machinery which is not manufactured in Canada.

The clause in the tariff providing for the free admission of mining machinery being, therefore, a delusion and a snare, it had better be done away with altogether, or, rather, as it expires in a couple of months, it would be well not to renew it. It would be far more preferable and cause less confusion to either place a small duty on all imported mining machinery, or admit it free without any conditions attached.

We hold that it is of the utmost importance that the mine owners should be enabled to procure the latest improvements in mining machinery without being obliged to pay excessive prices for them.

It is absolutely necessary for the proper development of the mining industry of this province that the very best that can be obtained in the way of appliances should be procured, and if the Government, by means of the tariff, steps in to prevent this, it is striking a blow at one of the most valuable resources of the Dominion.

If we mistake not, most of the articles used in ship-building and in the fisheries (two most important industries) are admitted free. Why, then, should not mining be placed in the same category?

It is not so much a question of where the article is manufactured as it is to get the best for the use

of the mines in order to make the production of the precious metals as large as possible. The more gold and silver the country produces the greater is the impetus given to every other industry in the land. The more the mines of British Columbia produce the more will run the wheels of the looms and workshops of Eastern Canada. Will the manipulators of the tariff take this lesson to heart?

If Canadian manufacturers make the best machines in any particular line, they will get the trade. If they do not, they don't deserve it. If the Canadian-made article is as good in quality and price as any other, it should have the preference, and we believe will have; but not otherwise.

In our opinion the Canadian manufacturers have nothing to dread from free competition in mining machinery, and as for our mines, we need the best wherever we can obtain it in order that we may compare favourably as a mining country with other parts of the world. We have the minerals in abundance. All we want is to be allowed to mine them to the best advantage.

No better proof exists that legislation may be made to act as a check upon the formation of "wind-bag" mining companies than the fact that during the last two weeks, in fear of the proposed Companies Act, an avalanche of promoters' schemes descended, and over a hundred incorporations with millions of capital (on paper) were born. That most of them will die in their infancy is certain, but as surely may it be taken for granted that British Columbia is being made the laughing stock of the world by the mania for forming companies which now exists. Something should be done to check it, but the question remains how this can best be done without interfering with the proper and legitimate employment of capital.

The Companies Act as presented, although an improvement on the existing law, is still somewhat of a disappointment. What it may be when it finally passes the Legislature we cannot say, but we trust that it will contain the following provisions: 1st. To compel all companies to publish a half-yearly statement of their affairs for the information and protection of investors. 2nd. To oblige parties, when seeking for letters of incorporation, to show that they have something of sufficient value, either in property or cash, to warrant incorporation under the capital asked to be authorized. And at the same time some provision should be made to guard against inflated or fictitious values being given. 3rd. Some protection provided for the

minority against a forced sale of the property by the majority. 4th. To compel companies incorporated outside and doing business inside the province to comply with the laws of British Columbia in every particular. 5th. To set at rest forever the question of liability attached to non-assessable shares issued at less than par. 6th. To compel all treasury share certificates to have the word "Treasury" printed across their face, and to regulate the selling of other or promoters' shares so as to enable investors to know exactly what they are buying.

These are a few suggestions, but there are others which we have mentioned from time to time. With regard to the scale of fees, there seems to be only one way to look at it. The government cannot make fish of one kind of company and fowl of another. Whatever may be the scale of fees for incorporating it must apply to all alike, and not to mining companies in particular.

We would suggest to those of our legislators who may be burdened by an over abundance of zeal for the welfare of company promoters to remember that the protection of investors should not be altogether lost sight of.

We trust that nothing will prevent the Legislature from making the insertion of false or misleading statements in a prospectus a punishable offence.

Vancouver has been seriously troubled for some time over the smelter proposition, and now Victoria is suffering from the same complaint. It will be Nanaimo's turn next.

Joking aside, however, the subject is one of great importance to our coast cities, but this is no reason why the taxpayers should be loaded down to pay a cash bonus to the proprietors of a smelting plant. If any encouragement is to be extended to the parties who propose to erect a smelter, it should be in some other manner—say exemption from municipal taxation for a term of years, the grant of a site, or some other inducement.

If the smelter people believe that their proposed enterprise will pay and they have the capital to go on with it, why don't they proceed? To offer them an inducement to locate in any one particular locality is all right, but the form of that inducement should not be a cash bonus. It should not be required.

The recent discovery at Rossland that the low grade silicious ores of that camp (of which there are vast bodies) are to a large extent free milling, is

fraught with deep importance. Thousands of tons of low grade ore have been lying on the dumps of the principal mines uncared for, simply because it would not pay to ship them to a smelter. Now it is discovered that all this vast body of ore already mined and millions of tons yet to be taken out can be treated right at the mines, at a cost of about \$2 per ton.

This discovery opens up a new era in mining for British Columbia, and especially for Rossland. Several camps having large bodies of low grade silicious ores will now become immediate producers, and the yield of the precious metal during the coming season will be enormously increased.

It will not be the fault of the Canadian Pacific Navigation Company if Victoria does not secure its full share of the Coast and Island trade. The attention being paid at the present time to the mines on Texada Island has induced the company to place a regular steamer on the route to points on the islands and Mainland. It is a wise step, in view of the fact that mining at several points along the coast is bound to assume large proportions from this on. The trade which Vancouver and Victoria will obtain from the coast and islands during the present and coming years will be enormous.

There seems to be some uncertainty as to what will be the course of action taken by the Dominion Government in regard to the building of the Crow's Nest Pass Railway. On one point we do not think there should be any feeling of uncertainty. The construction of the road will be commenced this year.

We believe this because to adopt any other course, which would mean delay in construction, would be a suicidal policy on the part of the Government. It would mean standing still where they should go forward, and would injure their reputation as a progressive Administration.

It is not British Columbia alone that calls for the building of the Crow's Nest Pass line. From all parts of the Dominion have come expressions of opinion favourable to the immediate construction of the road.

The question as to whom the Government will entrust with the work is one which, of course, we cannot answer, but we think we can safely say that whoever builds the railway the present Administration may be relied upon to safeguard the interests of the people in any arrangements that may be made.

As for the direct line from the Coast to Kootenay, the chances of its being undertaken this year appear to be rather slim. Which we regret.

It is expected that the railway now under construction between Trail and Robson will be completed about May 1st. This will enable passengers going into the Kootenay by way of Revelstoke and the Columbia River to make quick time and will be a boon to the southern part of the district.

The C.P.R. branch, connecting the Slocan with the Columbia & Kootenay Railway between Robson and Nelson, will also be put through immediately, and we trust that the Columbia & Western Railway will build into the Boundary country without delay. Every indication points to great activity in railway building throughout our mining districts during the present year.

We are glad to note that the efforts of the mining papers of British Columbia to warn investors against investing their money in bubble companies are having effect and that people are becoming more careful about putting their money into schemes without first investigating their worth.

It will be curious to note a year from now how many of the companies incorporated with a million or more dollars will be doing business. By that time we think the good will be weeded from the bad.

What we would like to see now is the formation of syndicates composed of men able to put up sufficient money to take hold of promising claims and develop them. When sufficient work could be done to show conclusively that a claim was valuable and that it would pay to operate as a mine, the syndicate would be in a position to form a company and place the stock on the market in a legitimate manner. They would have something more than a mere prospect to offer. If this plan became the rule in the formation of mining companies, small investors would be less liable to lose money in mining shares. The syndicate, too, would make a good thing out of it and would deserve to.

If the water power companies now asking charters from the Legislature succeed in obtaining what they ask for it will be a most outrageous bit of legislation. It will simply be robbery—that, and nothing more.

We have yet to hear that anything has been done by the Government in recognition of noble Jim Hemsworth's act of heroism.

Smelter propositions are in the air everywhere. It is now reported, and there is every reason to

believe that the rumour is true that the Pilot Bay smelter will be in operation within a month or two. It is also stated, apparently on good authority, that the Kansas City Smelting & Refining Company (one of the largest concerns in the United States) will build a smelter at or near Nelson.

The Canadian Pacific Railway Company are not asleep in regard to the possibilities of Kootenay, as some people imagined. Not only are they keeping their eye on the Crow's Nest Pass Railway, but they are preparing to do some considerable branch railway work in the mining districts. They now control and intend to improve the steamboat service on the Columbia to Southern Kootenay, and their latest move is to take hold of and improve the steamer service from Golden into East Kootenay.

An Assayer's Story.

BY RANDALL H. KEMP.

Any one who has followed the profession of assayer in the far west for a number of years must have quite a number of reminiscences connected with the avocation which would make interesting reading if prepared for the printer. Never having seen any thing of the kind published, prompts the writer to give some of his experiences while following that business in some of the western territories which are now States of the Union.

A properly qualified person to be an assayer should, like a lawyer or physician, keep the secrets of his clients safely locked in his own bosom and never inform another, without permission, of the contents or value of a customer's ore. He should also have the happy faculty of treating every one in a gentlemanly manner, and inspiring their confidence; should be capable of giving a ragged prospector a \$50,000 smile as he hands him his certificate with the heart-breaking word "trace" written thereon, or look glum as an oyster while filling up a blank, certifying that a more fortunate searcher after mineral wealth has several thousand dollars to the ton according to the sample submitted.

A conscientious and capable assayer can generally be relied upon, and his certificate accepted as thoroughly accurate. It is astonishing the amount of money which changes hands the world over every day of the year, based upon the result of the assayer's careful manipulation of samples, whether they be of ores or bullion. But, like in any other profession, sometimes the unlooked for or unavoidable occurs and the after results may be very embarrassing. A sample of which I will give in reminiscence No. one.

Nearly a quarter of a century ago I, then a student, was assistant assayer for a large silver and gold reducing concern in Colorado. A quantity of ore had been purchased from the superintendent of the first concentrator erected in that part of the territory. The concentrator man had obtained by assay from this ore nineteen and one-half ounces of gold per ton and had settled for it with the parties from whom he had obtained it on that basis. Our result was four and one-half ounces gold per ton. Such a difference required a second test, and a "control" quantity of the pulp was given an outside assayer. His returns were the same as ours but the concentrator man got the same result as in the first



INTERIOR OF POST OFFICE AT TRAIL, B.C., BEFORE ARRIVAL OF MAIL.



INTERIOR OF POST OFFICE AT TRAIL, B.C., IMMEDIATELY AFTER ARRIVAL OF MAIL.

instance. To ascertain the cause of such a variance, the concentrator man assayed all his fluxing material and found that a new can of litharge he had used only on these tests, assayed fifteen ounces gold per ton. Having over paid the original owners of the ore a large sum of money, caused a rupture between the superintendent and his employers and he lost his job. He struck out however, with his blankets on his back, prospected and worked as a miner until Leadville was struck, when he and another party secured some machinery on time and built the first sampler in that wonderful carbonate camp. He is now at the head of one of the largest smelting concerns on the American Continent and is rated at between \$2,000,000 and \$3,000,000. Probably if that litharge had not been "salted" he would be a very poor man to this day.

While conducting an assay office for a mining company in a gold camp in North Idaho, about ten years ago, I had several experiences, one or two quite amusing and one quite pathetic, which may be worth repeating.

Great quantities of both placer and quartz gold were mined and sold in this camp and frequently my services were required to melt and determine the value of such gold. A number of arastras were mining in the vicinity and from these crude reduction works I had also to retort the product so as to separate the quicksilver from the gold.

A bank in the village and a Scotch merchant were the local buyers of the gold, whether bars, nuggets, or dust. Late one evening a miner who had an arastra, brought me a quantity of amalgam to retort, melt and assay. He wanted to dispose of his metal that night as he was to leave for Portland, Oregon, early the following morning. I did as he requested and he sold his brick to the Scotch merchant, who I shall call Mac. About 9 o'clock next morning, pale and perspiring, Mac rushed into my office and said, "I bought this bar from — last night on your certificate that it was gold and here it is silver".

I burst into a roar of laughter, which puzzled Mac all the more. Happening to have a roaring charcoal fire in the furnace and the crucible tongs in my hand, I reached the business end of the tongs to Mac and told him to put the bar in their jaws, which he did. I then placed the bar in the muffel furnace, allowed it to remain a few seconds then handed it to Mac remarking, "Presto change, your silver brick is turned to gold." Generally arastra men would carry their amalgam in their coat pockets, the heat of the body would soften the quicksilver and it would adhere to the lining, if they dropped the bar of gold in the same pocket it would soon become coated over with the mercury. Mac left my office that morning with this information and much happier than when he entered it.

I had still another amusing experience with Mac. His financial backers were a large mercantile firm in a distant city. Mac wrote them that at a certain time he would remit them so many ounces of gold with a specified amount which was to be placed to his credit.

In the meantime he decided to have me run the gold into bars as they were more convenient to ship. He weighed his nuggets and dust carefully and I did the same on bullion balances. After the melt the weight of the bars was several ounces short of the original weight. After much explanation I convinced Mac that the dollar value of the quantity returned to him was the same as before, but the loss in weight was the quartz, dirt, iron etc. which in the melting process I had removed from the yellow metal by using the proper fluxing agents.

There was an aftermath to this episode which also had its funny side. The local telegraph operator had to leave the camp for a short time on business. The only person in town to take his place was a clerk in the bank. The clerk ticked off a message from Mac's backers that his gold shipment was short of his written advice concerning it. Consequently Mac had to make the same explanation to them that I had to him.

As the bank and Mac were rival gold buyers, the bank people thought they had a fine joke on the Scotchman, but I had the pleasure of changing their tune when the matter reached my ears.

Among the many experiences that come to my mind I will close this article with the following.

It was the day before Christmas of a very cold winter. The snow lay very deep on the ground and a fierce penetrating wind was piling it in huge drifts as two men entered my office. One was well dressed and appeared to have his share of this world's goods well in hand; the other wore very shabby threadbare clothes and was without an overcoat. The well dressed man produced from the capacious pockets of his fur overcoat several small packages of quartz which he passed to me, informing me at the same time that he desired to have them tested for their gold contents; he also desired to know when he could call for the returns. I informed him as the following day was Christmas it would be at least the day after before they would be assayed. The two men then took their departure. In about half an hour the shabbily dressed man returned and told me his sad story. He had a wife and two little ones. They had been living in a rude cabin some distance from any travelled road where he was endeavouring to develop two mineral claims. Running out of provisions and supplies, and having no money, he had come to town trusting in blind chance to find a customer for an interest in his property. He had met the party—a capitalist—who had just been in the office with him. They had gone and sampled the veins and, if one of the samples would yield \$9 per ton in gold he would receive \$1,500 in cash. He had his family at a house, no money to pay their way. His wife and babies anxious to join like every one else in the Christmas festivities. He was confident his ore would come up to his expectations, could I not under the circumstances strain a point and give him the returns on the following day even though it be Christmas.

I consented to do so, and immediately went to work making preparations to have the results out by 2 p.m. next day.

At 2 o'clock Christmas afternoon I had the pure gold of the samples in the annealing cups ready for weighing on the delicate balances when in walked capitalist and prospector. They waited patiently until the operation of weighing was over.

Sick at heart I picked up the pen to fill out the blank which certified that the ore ran from a trace to \$6.00 per ton. I handed the paper to the cold blooded man of money who read it carefully and passed it to the poorer man.

As I saw the tears well up into his honest eyes I realized more fully than ever before what even an assayer could sometimes do with just a simple stroke of the pen.

Kemps Springs, B.C.

A Trip down the Columbia in Winter.

A TRIP down the Columbia River in summer is, as most of us know, really delightful, but some of my readers might like to learn how it is in win-

ter. Having occasion to go to the Kootenay last month I resolved to try the northern route *via* Revelstoke instead of going in *via* Spokane as I had intended, and the following is my experience. Leaving Vancouver at 2 p.m. on the regular east-bound express, I found the cars crowded with passengers, many of whom I ascertained were, like myself, on the way to Kootenay. In the sleeper were Sir C. H. Tupper and others of the Sealing Commission returning home after their labours, Dr. Milne, on his way to Ottawa to look after the interests of the coast line to Kootenay, and Senator McInnes, bound also for the capital. The only empty car in the train was the "tourist" and it, I am told, has seldom more than one or two passengers at any time of the year. The reason of this is that the C.P.R. will allow only those having through tickets to occupy it. I cannot understand this policy on the part of the railway company because it seems to me like a losing game on their part and it certainly is a hardship on local passengers of a certain class to oblige them either to go into the "colonist" which at times is not very inviting, or sit up all night. Many respectable people travelling between local points cannot afford to pay the price of a berth in the regular sleeper but would gladly pay \$1 or even \$1.50 to have a comfortable night's rest. The idea is, I believe, that if the tourist cars were opened to the general travelling public it would interfere with the business of the regular sleepers. I hardly think this would prove to be the case. Most of those who now use the "palace car" would continue to ride in it because it is the "swell thing" to do. I feel quite sure of one thing, that if local passengers were allowed to buy berths at reasonable prices in the "tourist" it would be full of people instead of running empty as at present. People would also travel oftener than they do between local points if they could be sure of a comfortable night's rest. It is wonderful how many people you meet when travelling who know more about running a railway than its managers. I suppose I am one of these, but I submit in all humility that what I have said in regard to tourist cars is worthy of consideration by the railway people.

At Mission Station the C.P.R. company have erected a neat little lunch room in place of the unsightly shack that did duty as such not long ago. North Bend was reached at 8 p.m. (rather a long wait for supper) and a very tasty meal was enjoyed, which compensated somewhat for the length of time we were obliged to go without something to eat.

As we approached the mountains, snow made its appearance and when we reached Revelstoke the next morning we found it to be several feet deep. Between Sicamous Junction and Revelstoke the railway company run a dining car on which we had breakfast. This car deserves to be noticed as one of the best conducted on the whole line and passengers may always look out for a good meal on it. I found the conductor of the car attentive, the waiters obliging (a rare thing to find in the West), and the food well cooked, and everything that could be desired.

At Revelstoke quite a number of passengers disembarked and wandered about the station or

through the town from 9 a.m. till 5 p.m., when the Arrowhead train left for the Columbia River. It was a long wait, and if it could be arranged for trains from the Coast to make closer connection with the Columbia River boats it would, I think, add much to the business of the line. But I do not suppose this can be done without seriously interfering with the running arrangements of the whole road. I would suggest, however, to the company to make the station more attractive than it is at present to enable passengers to kill time more pleasantly while waiting.

It is quite a distance from the station to the old town of Revelstoke, and the drive in winter is sometimes not very comfortable. Near the railway a new town is springing up rapidly, and I noticed quite a number of buildings in course of erection. There are several comfortable hotels in both the old and new towns, but they are quite unable to accommodate the people who pass through Revelstoke during the summer months. The running of the daily boat from Arrowhead may relieve the situation somewhat this season, but I am inclined to think that there is room for more hotel accommodation in Revelstoke. In any case the existing hotels will have all they can do the coming season.

There is, I hear, a demand for town lots at Revelstoke, and activity in building operations is looked for. The Imperial Bank has opened a branch there. The C.P.R. proposes to make it an important point on their line and everything tends towards an immediate era of prosperity for the town. What they want is incorporation to bind together the conflicting interests which now to a certain degree retard the welfare of the place. There are two newspapers published in Revelstoke, and its Board of Trade is composed of active, enterprising members from both the old and the new towns.

About 5 p.m. after the arrival and departure of the express from the East we made a start for Arrowhead, which we reached in about two hours' time. Here again we had another wait until a number of freight cars were shunted to allow the passenger coach to run alongside the steamer. This delay could be avoided by the railway company having an extra engine at Arrowhead, which no doubt they will furnish, when the inconvenience and discomfort to passengers of being penned in a car for half an hour or more waiting to be transferred to the boat is pointed out to them.

In due time, however, we reached the steamer *Nakusp* and the air of comfort which her well-lighted saloons presented was a pleasant change from the dingy railway carriage. The *Nakusp* is really a most comfortable boat and her staterooms and general appointments excellent. She was packed full of freight when we boarded her, amongst which was a large blower for the Nelson smelter, and everything being ready for a start no time was lost in getting away on the trip down the river. The air was sharp and there was a good deal of floating ice which, however, did not seem to interfere with the speed of the boat, but inside, the saloons were warm and comfortable.

A tasty supper was served just after leaving

Arrowhead which I certainly thoroughly relished, and then while enjoying a fragrant cigar I had time to look about me and note the different types of passengers we had on board. I observed that there were a few of the "prospector" class, but a good sprinkling of men from the East, among whom was Hon. Mr. Foster, late Minister of Finance, on his way to Rossland. The boat even at this early season of the year was crowded and I thought of what it would be when spring and summer came and travel to the mines really set in. There is no doubt that the line will do an immense passenger and freight traffic this year, and I understand the company are preparing for it. Not only will there be another boat larger than the *Nakusp* on the route by the beginning of April, but a fast steamer for passenger business only is to be built immediately. The railway now building from Trail to Robson is expected to be finished about the beginning of May which will shorten the river service considerably. The C.P.R. managers are evidently alive to the situation and are determined to cope with it. About 11 p.m. I retired to bed and enjoyed a very comfortable night's rest, expecting to find myself near Robson in the morning. But on awakening I found that the steamer had run on a bar in the narrows about thirty miles below Nakusp and there we were hard and fast, the gravelly bottom on which we rested and over which the water was rushing, being plainly visible from the deck of the steamer. With the aid of a small stern wheeler we managed to slide off the bar soon after daylight and made our way down a narrow channel cut through the ice. At the bow was a strongly built barge which we pushed ahead of us and thus kept the steamer from coming into contact with the ice. The ice we were encountering was lodged in the narrows between the upper and lower Arrow lakes, but when we passed through this channel it disappeared and we had open water all the way to Robson. The C.P.R. have a number of men engaged in improving the navigation of the narrows, a work which is really the duty of the Government to undertake.

About 4:30 p.m. we reached Robson and there the Trail passengers were transferred to a railway train which took them a short distance down the river where another of the company's boats was waiting to carry them to their destination. This transfer is caused by the shallowness of the water at this season of the year just below Robson. When the Trail passengers had left, the Nelson train drew alongside the steamer and we who were bound for Kootenay Lake embarked thereon. It took us about two hours to reach Nelson, a longer time than it should have done, and about 7 p.m. we drew into the station of the central city of West Kootenay. It was too dark to see the splendid scenery along Kootenay River, but we heard the roar of the falls and the rapids as we passed along winding our way around the many curves of the road.

The first thing one notices on arriving at Nelson late in the evening is the utter absence of lights on the streets. You have to pick your way in the dark the best way you can, and there have been, I am told, cases where strangers have suffered serious mishaps from stumbling. Why Nelson should be so

backward in this respect is a mystery to everyone who visits the place.

Nelson since my visit has been incorporated, and street lights and other improvements will, I have no doubt, be soon forthcoming. In the enlargement of the Hall smelter, the tall chimney which was built now carries off the reddish coloured smoke from the works high in the air. This is a benefit to the town of Nelson, which of itself is one of the prettiest places in Kootenay, as the smoke from the smelter, when it had a low chimney, sometimes marred the beauty of the place.

I spent a quiet Sunday in Nelson, and on Monday took the steamer *International* to Kaslo. This is a new boat run by the International Navigation and Trading Company, and, I understand, the fastest on the lake. The saloon of this steamer is a gem for comfort and elegance combined, and one of the best features in it is the row of large plate glass windows on each side which permit of a splendid view of the lake as you skim along. Darkness overtook us quickly, however, and I did not enjoy the view very long. The dinner served on board was excellent, and the extent and variety of the bill of fare a genuine surprise to me.

The *International* now connects with the Spokane Falls & Northern R.R. at Five Mile Point, near Nelson and takes the passengers from that road on to Kaslo and intermediate points. The *Kokanee* used to make this connection, but since the C.P.R. took over the boats of the C. & K.S.N. Co. the Spokane road made an arrangement with the International Navigation and Trading Company to do the service. The C. & K.S.N. Co. boats will hereafter be run purely in the interests of the C.P.R. system.

The *International* had a large number of passengers on board, and fearing that there would be a scarcity of room in the hotels at Kaslo I telegraphed from Ainsworth to secure accommodation. To my utter disgust, however, the boat reached Kaslo before my telegram, and I was the only one of the passengers who could not get a room, the house being, even at this season of the year, full of guests. The proprietor of the hotel, which, by the way, is named the Kaslo, very kindly interested himself and secured me very comfortable quarters for the night in a neighbouring house. The Kaslo is a most comfortable hotel, the bedrooms being handsomely furnished and heated with hot air, and the table everything that could be desired. It is a great improvement on the miserable accommodation which strangers visiting the town had to put up with not long ago. But let me say a word to Kaslo. If the people there do not interest themselves at once and have a large first-class hotel erected in time for the spring trade they will lose an immense influx of visitors, who will be obliged to go elsewhere for accommodation. The hotels now in Kaslo will not be able to accommodate one-third of the strangers who will visit the town during the coming summer.

Kaslo is wonderfully improved, its streets are brilliantly lighted by electric lamps, it has a system of water works with force enough to control any fire. As one citizen remarked, if the water does not put the fire out it has force enough to knock the building into smithereens. Large sampling works, (a

description of which appeared in the March number of the *Record*), saw and planing mills, ship-yards and several factories of various kinds are among the industries. The Bank of British North America and Bank of British Columbia each have branches in the town, and building operations, which were very active the past season, are expected to be still more so during the present year. Kaslo cannot fail to be a most important place, especially as it is the doorway to the great Slocan district.

My visit was necessarily a short one, and on the evening of the second day I went on board the steamer *Kokanee*, of the Canadian Pacific line, a very beautiful and fast boat. I took a berth in a roomy and most comfortable stateroom, and being tired, soon fell asleep. The steamer left the dock at Kaslo about seven in the morning for Nelson, so when I awoke we were well out on the Kootenay Lake. A tasty breakfast, followed by a pleasant smoke, was enjoyed, and soon afterwards I found myself once more in Nelson.

The weather all this time was delightful, the air being invigorating without being cold, with a bright sun and a little snow on the ground. The next morning I left Nelson about 11 a.m. for Robson and had an opportunity of viewing the splendid scenery along the Kootenay River. I am told that the fishing is excellent at certain seasons of the year, and there is a rumour that the C.P.R. intend establishing a resort for sportsmen somewhere along their line between Nelson and the Columbia River.

About noon we arrived at Robson, which at present consists of an hotel and railway station, and there we had to lounge about for over two hours waiting for a train to take us down the river. The Columbia just below Robson at this season is not navigable for steamers, so the C.P.R. have built a short spur to connect with one of their steamers about four miles down. I would call the attention of the C.P.R. authorities to the necessity of doing away with the delay which passengers have to endure at Robson. The quicker it is done the better, for it is seriously injuring their route and creating a bad impression with the travelling public, which it may be difficult to overcome later on. The trouble seems to lie in their trying to run passenger and freight at the same time, the latter having rather the preference. When daily boats are established I look for a great improvement and am glad to learn that the C.P.R. intend building a wharf at Nelson, which will be a great accommodation to passengers.

We now boarded the freight steamer *Trail*, and it looked as if we would have to go without dinner, but a vigorous representation of our state of hunger brought the steward to time, and we were served with a good meal.

The river all the way to Trail is at this season of the year one succession of shoals and rapids, and navigation is very difficult. The building of the railway from Trail to Robson is therefore an actual necessity for the proper carrying on of traffic. We stopped at Montgomery and Waterloo, two new towns which have sprung into existence during the past few months through the proximity of promising mines and several logging camps in the neighbourhood.

I noticed, however, that the timber was very small and the hills are not thickly covered with wood. We now sighted the railway track, on which construction is being carried on, and it seemed as if work was being pushed with vigour. On the way down we had to stop at several points and discharge contractors' supplies, and this consumed so much time that it was almost dark when we stopped at the Trail landing.

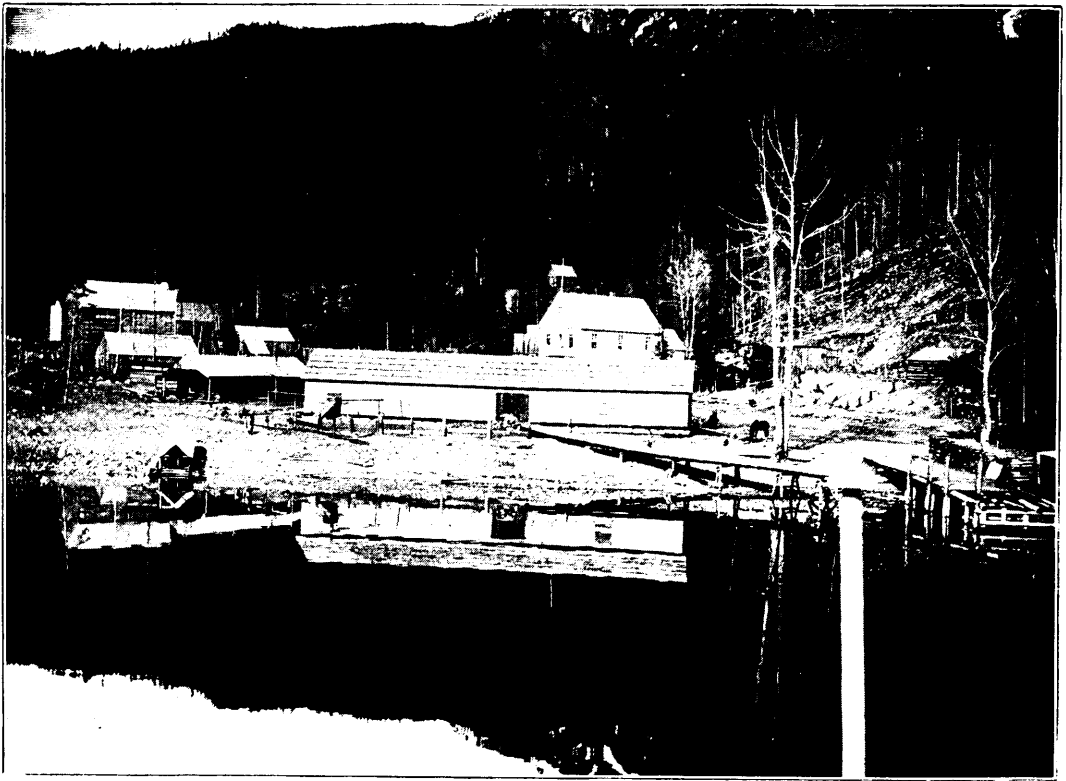
During the evening I had the pleasure of attending a meeting of Mr. Bostock's constituents, at which that gentleman made a most effective speech and, if I am able to judge of his popularity by the reception given him by the citizens of Trail, the member for Yale-Cariboo has certainly succeeded in winning the hearts of the people he represents in Parliament.

Kamloops B.C.

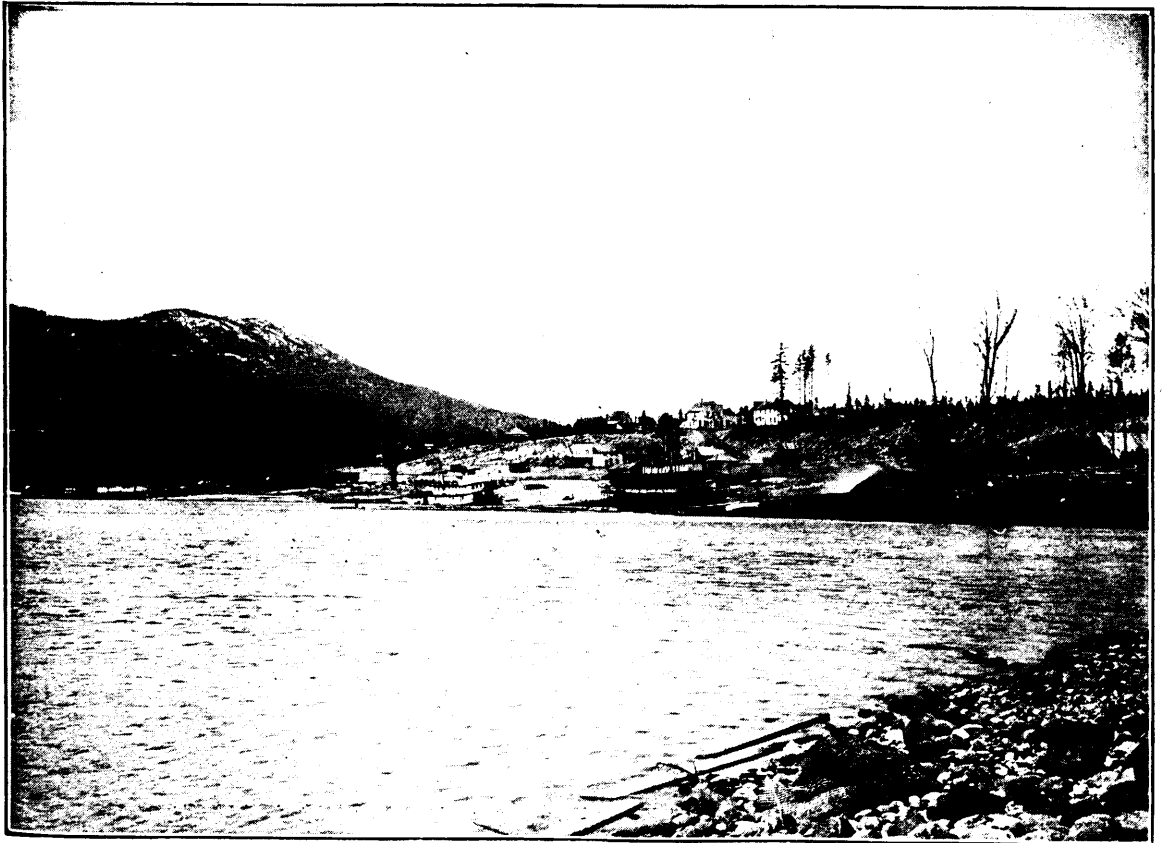
FROM what has been revealed in the past year by the mineral development in the Kamloops section of this province it is destined to equal, and in the matter of variety, surpass many of the districts which have become famous as mineral wealth producers. Heretofore we were concentrating our efforts on the North Thompson River, believing that extensive mineral bodies would be found, and Kamloops would, as a matter of course, reap the benefit resulting from their development. But never for a moment was our attention drawn to anything so near home as the discoveries of last summer. In dealing with Kamloops as the centre of an exceedingly promising mining district I will confine myself to an area fairly within her limit and tributaries, and in which I am either personally familiar or in receipt of reliable and correct information. Including as this will the Cinnabar mines which are situated on the north side of Kamloops Lake, and about fourteen miles west of Kamloops, which the British Columbia Cinnabar Mining Company have satisfactorily prospected. Here are in course of construction extensive buildings in which will be located furnaces for the successful and economic treatment of the ore, giving employment to from twenty to twenty-four hands during the winter. On the Tenderfoot, copper lead, which is situated half a mile east of this property, beyond establishing the fact of the existence of a large body of copper ore, not much development work has been done.

Six miles east we come to the Tranquille Creek, where placer mining has been carried on more or less for the past twenty years by whites and Chinese alternately. Of late the improved method has been introduced, there being no less than three hydraulic companies owning tracts and making preparations for commencing operations the coming season.

Crossing over to the south of the lake and retracing our steps westward, we come to the Glen iron mines, admittedly the largest body of iron ore on the Pacific slope, from which the Tacoma smelter has been obtaining her supply of iron for flux. From here the entire area lying east, and to the south, extending back and into a portion of the



SILVERTON, B.C.



NAKUSP, B.C.

Nicola Valley, have given indications of the existence of both precious and base metal.

At Rockford several locations have recently been made by the Scott family, specimens from which have given value in gold and silver of \$15 to the ton.

Drawing nearer home, the Coal Hill Camp, which practically lies to the south, embraces nevertheless an area five miles west of the city to ten miles south, and the same distance east. In this particular area there are upward of 260 claims that have been located since August last, the veins being capped by a heavy iron capping and carrying principally gold, silver and copper. A ten-inch vein of asbestos has been located a little south of the C.P.R. track three miles west of the city and is visible the length of three claims in a north-westerly direction. South-east and north-west seems to be the general course of the veins, with a slight dip to the south and from surface appearances, and the development accomplished I judge the dip to be at an angle of about ninety degrees.

Already there are some excellent showings among the claims under development. The Pythion, the first located, is down with a shaft fifty feet on the lead cutting through a six-foot highly mineralized diorite, through which runs a fourteen inch ore chute. From that level the vein was cross-cut to the east and west, the pay streak widening in places, in the main maintaining the width given above. Picked samples from this claim gave a value of \$70 to the ton in gold, silver and copper.

The Thora H. and Rosebud are two claims in which C. Hove and Kiefer, of Everett, Wash., are interested, the former being the architect and superintendent of the Everett smelter. They are concentrating their development on the Thora H., which is down thirty feet through a similar mineralized rock through which an ore chute which began at four inches has increased to sixteen inches at that depth.

A. G. McDonald and R. H. Lyons refused \$10,000 for two of their claims, the Bonanza and Pot-
hoop on which a limited amount of work has revealed such encouraging showing as to warrant the refusal of the sum named. The Lucky Strike, or Guiren Fraction shows a five-foot solid ore chute. This claim has been bonded to Jas. Cobledick for \$13,500, of which \$500 was paid down. The Chieftain Nos. 1 and 2, owned by ex-Mayer R. H. Lee, have shafts which are showing encouraging results.

The five claims in the immediate surrounding of the Guiren Fraction have been bonded to F. P. Carey, late of Spokane, Wash., for \$25,000, who is under bond to commence work by the first of March. The Iron Mask, which is situated a little to the west of this group, is owned by a Toronto company represented by W. Thos. Newman, and is showing a little in the lead of any in the camp. Its situation is very favourable for economic operation, as it offers exceptional facilities for tunnelling. A tunnel is now being driven in a northerly course on the strike of the ore which gives a pay chute varying from two to four feet, carrying gold, copper and silver to the

value of \$42 to the ton. The tunnel is in fifty feet and timbered within six feet from the face, and the ore dump, 31 feet in length, 4 feet high, by 7 feet wide, is estimated to contain 110 tons of ore. Further to the south and south-west of this location and around the Sugar Leaf Knoll, there are a number of locations of which mention will be made as they come to the front.

Further to the east is Joko Lake, in the vicinity of which are located a number of claims of promising future. Lately a representative of English capital visited this portion of the camp and took with him to England fifty pounds of surface ore from three of the claims. A few days since a cash offer of \$5,000 was made to the owner, and on his acceptance \$1,000 of the amount was immediately cabled him, the remaining \$4,000 to follow in due course.

Stepping across a slight declivity (which practically divides the mountains, and through which the waggon road passes) we enter into a slightly higher range, which is covered with a somewhat denser growth of timber. In the more open portion of this range a number of mineral claims have been located recently, assays from three of which were shown me as giving their mineral value at \$37, \$42 and \$45 respectively. To the east of these in consequence of the heavy fall of snow very little prospecting has been done, and a scope of country about ten miles in extent has thereby been skipped, to be taken up again at the first opening of spring.

The conditions of the Coal Hill Camp (immediately adjacent to the City of Kamloops) are identical with the conditions found to exist elsewhere in other mining camps of the province which are now famous as mineral wealth producers. It is a well-known fact, the great majority of the ore-shipping mines of Kootenay have never seen what is strictly termed defined walls, yet they have proven to be mines of great value. The same result is looked for here; in fact a number of the claims that are now being opened in our camp show a far better surface showing than did those that are now paying mines in Kootenay.

Leaving this shattered surface through which thousands of mineral veins pass, and in which millions of treasure lie hidden, we cross the South Thompson River and follow up its northern bank to the Little and Big Shuswap Lakes. Along these shores extensive leads of gypsum are encountered which will in the near future form a part of our mining industry. A little further to the east Scott's Creek is reached, on which in 1885-6-7 a number of placer claims were worked. A local company is now in possession of a tract of bench land along this creek, and the coming season will no doubt witness systematic operation by the hydraulic process.

By scaling over the mountain lying to the north we descend on Adams' Lake, and by taking a northwesterly course in crossing the lake we gain the pass that leads to those mammoth veins that are exposed on the Homestake mines. This lead can be traced from the lake running along the side of the mountains to the north of the valley for a distance of seven miles without a break, and the vein shows at the point where the first opening was

made, twenty-two feet solid ore. Here a tunnel was driven twenty feet on the ore, when a rich streak of gray copper sixteen inches in width was encountered, from which wire and leaf, both gold and silver, were obtained. The grade of the mountain pitch being about seventy-five degrees, it was deemed advisable to drop down eighty feet below tunnel No. 1 and start No. 2, which was estimated would tap the vein in 125 feet, at a 70 or 75 foot level, and thus determine its permanency. The results proved satisfactory. At a point 150 feet above tunnel No. 1 a mammoth deposit shows up thirty-two feet of solid ore (low grade galena). After careful and judicious experiments in the various methods in the treatment of this class of ore, a company has been incorporated under the name of the Yale Homestake Mining Company to operate these mines, and treat the ore on the ground by the cyanide process.

Eight years ago I discovered a lead of copper and iron ore running through this valley at a point some six miles west, the veins being capped by a heavy iron capping, the characteristics of the mineral leads in this section of the province. In those days it was next to impossible to work up any mining interest here, but these veins have now all been taken up. Indications point that in the very near future the Adams' Lake Valley (in which there are no less than sixteen locations at present) will form an important part in the mining industry of this district.

Passing through this valley westward to Louis Creek which empties into the North Thompson River we find evidence of gold-seekers of a few years back, the gold being very fine and difficult to save in sluices. Dixon Creek cuts through the mountains two miles to the north, flowing west into a small valley, thence north into the Barrier River, which also flows into the North Thompson. On Dixon Creek coarse gold has been mined at intervals extending over years. Six years ago a nugget was handed me, taken from the creek, that weighed three and a-quarter ounces; the metal, however, seems to be in spots, and the creek is difficult to handle.

A short distance up the main river we come to a coal bed, extending over an area of four miles in width by seven miles in length. This coal is bituminous; it has been tested by the C.P.R. and pronounced a first-class steam producer. Its coke test giving 70 per cent. of that commodity, it is scarcely necessary to enlarge on the importance of this material in a district such as we have been describing.

Looking westward, again, fourteen miles from Kamloops, is Jamieson Creek, on which placer mining of varied success has been in operation for years and where attention is being turned to the quartz veins. Thus it will be seen that the Kamloops mining district will extend over an area of nearly fifty square miles in which a showing far exceeding our most sanguine expectations in gold and silver, iron, copper, asbestos, gypsum and coal have already been given. Nor could I close without special mention being made of those wonderful and extensive mica leads known to exist in the Tite Juan Cache section which is also a tributary to the Kamloops district. These mines were re-

ported on by an American expert last summer, who examined them in the interest of an American company and his report was highly complimentary, being pronounced by him to be the most extensive in existence, capable of controlling the market of the world in the supply of mica crystals for the various uses to which that mineral is now applied. During the past season mica crystals in blocks were obtained weighing from 50 to 300 pounds respectively, and averaging from 4x6 to 20x36 inches, of a flat surface. The quality was also tested for electrical purposes, and was found (though from the surface) to be fairly equal to the best India mica.

JOHN F. SMITH.

Miss-Fires.

We give below part of a paper on miss-fires, written in 1894, by Mr. J. D. Kendall, and published in the Transactions of the Federated Institute of Mining Engineers:

The usual method of charging holes is to put the explosive into the hole first, the last cartridge having the cap in it, then to stem with a more or less clayey material to the top of the hole. In very wet ground water alone is usually employed for tamping.

Miss-fires arise either from defective materials or bad workmanship.

DEFECTIVE MATERIAL.—Miss-fires from defective materials may arise as follows:—

(a) INFERIOR EXPLOSIVES—Arising in many, if not most, cases from exudation of nitro-glycerine. This is a defect, however, which is fortunately not of very frequent occurrence now.

(b) INFERIOR DETONATORS—are also met with occasionally, but not often.

(c) DEFECTIVE FUSE.—This is a most abundant source of the miss-fires which arise from the use of inferior materials. Even in fuse of first-class make there are sometimes found lengths in which for two or three inches not a trace of powder is to be seen, and sometimes the powder is of an inferior quality for short lengths. Fuse of either of these descriptions may be most dangerous, for even if it should eventually "run," it must "hang fire" more or less, which may so deceive the miner as to lead him back again into his working, merely to be shot. The touch-thread or threads burn at rates varying from 1½ to 5 inches per minute in the open air, but confined in the fuse they will burn much more slowly, and be much more likely to die out. It is quite possible, too, that a deadening of the fire conveyed by the touch-threads may so occur that the rate of burning in a barren part of the fuse may be reduced to that at which the yarn enclosing the powder-train is consumed; that is, from 0.38 to 0.85 inch per minute in the open air. As confined, even this slow rate may be reduced to one-half; so that a piece of fuse barren for 3 inches may hang fire for a quarter of an hour. This to a miner, waiting for a shot to go off, is a very long time, and many cases have occurred in which he has gone back too soon and been seriously injured in consequence. The usual rate at which fuse runs is about 2 feet per minute, although in some cases it is much slower, only 1.4 foot per minute. Therefore from 1½ to 2½ minutes is sufficient for any ordinary length of fuse to run, and when this time is exceeded a miner concludes either there has been a miss or that the fuse is hanging fire. If he lack caution, or be very anxious about his work, he may go back too soon and suffer in consequence, as many have done. A miner should never return to a working in case of a miss-fire, unless he heard the cap explode, before the expiration of at least twenty minutes.

Fuse is no doubt, however, often blamed for miss-fires when the real cause is defective charging.

DEFECTIVE WORKMANSHIP.—Miss-fires from defective workmanship may arise in several ways:

(d) The detonators may be so insecurely fixed on the fuse that in course of stemming the two may be separated, especially if the swab-stick be rather too thick and draw back the fuse during the operation of stemming. In such a case the fire may not reach the detonating-material. Before this could happen, however, the fuse must be pulled completely out of the detonator or it must be defective, so that it will

not spit properly, to use the miner's expression; for when both the fuse and detonators are good the latter are exploded, even if the fuse only just enters the cap. It is a common opinion among miners that the fuse must be cut very square at the end, and then fixed in contact with the detonating-material, but that is not necessary. All that is needed is that the detonators shall be firmly fixed on the end of the fuse, so that they cannot be separated in the course of stemming. It is of no consequence if the cap be pulled out of the dynamite; detonation of the latter will take place just the same, provided, of course, that they are in contact. Some miners knowing this, often, in charging their holes, put in the explosives first, and then the cap with the fuse attached, on the top of it. It is a common but erroneous opinion that the cap must be placed within the explosive.

(e) In wet ground it is necessary to grease the cap; that is, to fill up the space between the sides of the cap and the fuse with tallow, so as to prevent water from gaining access to the inside of the cap. This is sometimes neglected or imperfectly done, and miss-fires are the consequence. The writer has had greased caps and fuse immersed in water for twenty-four hours, yet the fuse ran and the caps exploded, just as if they had not been in water at all. Caps with fuse attached, but not greased, would not explode after immersion for the same length of time. The explanation is probably that a comparatively thick film of water intervenes between the fuse and detonating material in the ungreased cap, so as to prevent the fuse-fire from reaching the latter, because caps that have been immersed in water for three-quarters of an hour, and afterwards drained, explode in the usual way, and fuse so treated runs as usual, so that mere dampness is not sufficient to account for miss-fires of this description.

(f) The sawdust, with which the caps are filled as they leave the factory, may also cause miss-fire if it be not removed. The writer has made experiments in this direction. Caps that contain only sufficient sawdust to barely cover the detonating material will explode, but one-sixteenth inch of sawdust will prevent explosion. If the sawdust be not quite dry, it is most difficult, and in some cases impossible, to shake it out of the cap, and it is not advisable to attempt its removal by any sharp-pointed instrument, unless it be of wood; therefore, caps in which the detonating material is not visible should be rejected. The writer has tried to explode caps both by scratching and hammering on the detonating material with pointed pieces of wood, but he never succeeded. Nor could he produce explosion by scratching with a sharp-pointed piece of iron, but hammering with the same instrument was always successful. Gently crushing the cap and the detonating material within it will not cause explosion.

Miss-fires, whether arising from defective materials or bad workmanship, sometimes occur unknown to the miners; as, for example, when two holes are supposed to have exploded simultaneously, whereas in reality only one of them has exploded, the other having missed fire. To prevent this kind of occurrence, there should be at least two inches difference in the length of any two fuses fired together, even though all the holes fired at that time be of the same depth.

From whatever cause, however, miss-fires arise, it will probably not be possible to prevent them altogether, although they may be greatly reduced in number; for we are not likely in the future, any more than in the past, to obtain, at all times, either perfect material or faultless workmanship. The question, then, is: How can miss-fires be dealt with so as to avoid the serious accidents which sometimes follow on them? At present the usual practice is either to remove the stemming, or by either a wooden or iron pricker to make a passage in the stemming and pass through it another cap. Both these practices are most dangerous; the latter, however, is only so when an iron pricker is used, and this is occasionally done unknown to the managers. The principal danger in both cases is of the same kind, and arises from the possibility of coming into contact with an unexploded cap and causing it to explode by a blow, either from without or within, that is, directly on the detonating material.

For the purpose of obviating any necessity or excuse for resorting to either of these practices, the writer some time ago carried out two sets of experiments, which showed that miss-fires may be dealt with in a most simple manner and with absolute safety. One set had reference to the quantity of stemming necessary to enable the explosive to do its work properly. Shots were fired in the presence of experienced miners, who were all in favour of heavy stemming, with various thicknesses of stemming, ranging, in the different holes, from fourteen inches down to half an inch, and these miners all agreed that the burden in each case was as well thrown as it would have been had the hole been stemmed up to the neck. A number of holes were also fired without any

stemming whatever, and these were almost if not quite as satisfactory. The unanimous conclusion arrived at by all who witnessed these experiments was that two to five inches of stemming, according to the nature of the ground to be thrown, was as effective as two feet.

The other set of experiments were made for the purpose of determining the thickness of stemming through which a charge of gelatine-dynamite could be exploded by another charge placed on the top of the stemming. The *modus operandi* was this: Two cartridges, without a cap or fuse, were put into the bottom of the hole. These were stemmed with a certain thickness of clayey stemming; another cartridge or half-cartridge with a cap in it, and fuse attached, was placed on the top of this stemming, and a further lot of stemming, generally not more than an inch or two, was put over this last cartridge or half-cartridge. The primary stemming, that between the two lots of explosive, was tried of all thicknesses up to fourteen inches, and in every case the whole of the dynamite in the hole was exploded, and the work intended to be done by it executed satisfactorily. In one experiment five inches of paper was put between the two lots of explosive and two inches of paper on the top of the last cartridge, no clay stemming whatever being used. The hole was a very strong one, in the middle of a narrow forehead, but the ground got by it was all that could have been expected if any amount or quality of stemming had been employed.

The lesson to be learned from these experiments is this: It is quite unnecessary to put more than three to six inches of stemming at the most into a hole; but if this were increased, say, to eight inches in deep holes, so as to partly meet the prejudice of miners generally, yet even then in case of a miss-fire, all that has to be done is to put another cartridge, or part of one, on to the top of the stemming, and the first charge will be exploded in the manner described above. No unramming of a hole is necessary, and no pricker need be used, so that all the risks attending these two operations will be avoided.

The writer has caused the holes made in a number of mines to be charged as above suggested, for several months, with complete success, miss-fires being now most simply and easily dealt with.

These experiments were made with gelatine dynamite, containing a higher percentage of nitro-glycerine than giant powder.

East Kootenay.

THE Fort Steele mining division of East Kootenay district, which is now beginning to attract considerable attention in consequence of the large bodies of mineral which have been discovered there within the last few years, is, to all intents and purposes, practically an entirely new field, and as in all probability the coming season will witness the commencement of the construction of the Crow's Nest Railroad, which will bring this section into contact with the outside world and give an immense impetus towards the development of its mineral wealth, a short sketch, descriptive of the discovery of its gold placers and mineral-bearing veins may be of considerable interest.

In the summer of 1863 a half-breed named Findlay, with two companions, while passing through the country found gold on a creek, which in after years became known as Findlay Creek. They cleaned up about \$700 worth of prophyskin gold, which they sold to the Hudson Bay factor named Linklater, who was in charge of a post on Tobacco Plains, and the only white man resident in the valley. They then proceeded on their way to Frenchtown, near Missoula, where they wintered. The following spring, news of the discovery having spread, quite a number of men made their way into the country, for the purpose of prospecting the Upper Kootenay and its branches. One party of fifteen men came in from Hell Gate, Montana, arriving at the crossing of the Wild Horse Creek on March 15th, 1864, finding the

spring well advanced, with grass from four to six inches in length. Pushing on to Findlay Creek they were disappointed to find the country still blocked up in ice and snow, consequently they returned and camped, some of them on the large grassy bottoms adjoining the river situate about four miles above the mouth of the Wild Horse and known ever since as Bummers' Flat, others in the vicinity of the present site of Fort Steele. About the same time another party, composed of five men, two of whom—Curly Carrol and Bob Dore—are still in the country, came in from Walla Walla by way of the Moyie River. Members of these parties started prospecting on the Wild Horse, and finding gold enough at the crossing of the trail to encourage them to continue, they worked their way up the creek, the prospects improving as they advanced, until they finally struck the rich ground about three or four miles from the Kootenay.

When the first crowd got up to the mouth of what is now called Boundry Creek they ran across a fine black cayuse steed, giving rise to the original name "Stud Horse Creek," which, with the consent of the miners, was changed to "Wild Horse Creek" a few years afterwards by Gold Commissioner P. O'Reilly.

Bob Dore recorded the first claim, calling it the Dore; then followed the Cuddy, French, Fisher and others. As much as \$7,000 was taken out of the Dore in one day, the average being about \$3,500, producing altogether in three years the sum of \$521,700.

During the season of 1864 there were in the neighbourhood of 8,000 miners on the Wild Horse, about 100 on Findlay Creek, with one or two hundred prospecting round in other parts of the country. The Wild Horse diggings paid from \$20 to \$50 a day per man. About 800 men wintered in the district in 1864, very little gold being taken out of the country that year. In the spring of '65 provisions became very scarce. Flour went up to \$1.25 per pound, tobacco \$15, and other things in proportion. No beef to be had, some enterprising individual brought in 100 head of sheep and sold them for fifty cents a pound. In fact more than half the people were forced to hunt and fish for a living. It was not until the 15th of May that supplies arrived from the Flathead Mission, and the wants of the camp were relieved. The summer of 1865 was a very prosperous season, the output of gold rivalling the palmy days of the California placer camps. There must have been from 5,000 to 6,000 men in the district, hundreds making from \$3,000 to \$5,000 in a few months, some as high as \$20,000. The Fisher Co., with six partners, about \$100,000. The Dore Co., ten partners, \$150,000. Reese & Co., \$75,000; Griffith & Co., three partners, \$30,000 while dozens of other companies made their thousands. Hundreds of nuggets were taken out ranging from sixteen ounces downwards, and ten-ounce pieces being of common occurrence. The largest nugget was found by the Michael Reynolds Company, weighing thirty-six ounces. Altogether there must have been five millions in gold dust realized during the season, most of it going to the States, *via* Walla Walla and Montana, as the majority of the miners were Americans or American citizens.

Large sums of money were spent in the construction of ditches. The Victoria ditch, Dore & Co., cost \$40,000; the Town ditch, Reese, Dore & Co., \$15,000; Stone & Co.'s ditch, \$12,000; Dawson & Co. \$10,000, all completed that year. At this time the camp was in a very flourishing condition, with fully five thousand men mining on the creek, besides numbers of prospectors, traders, horse and cattle ranchers, butchers, etc. The Hudson Bay Co. also moved their post from Tobacco Plains to the banks of Wild Horse not far from where Fort Steele now stands, Michael Phillips, who is still a resident of the country, succeeding Linklater as factor. The first gold commissioner was I. C. Haynes, appointed in 1864, succeeded by the Hon. P. O'Reilly. The first mining recorder was Wm. Young. Wild Horse remained the head office of the district until, on the completion of the C.P.R. in 1885, the headquarters of the gold commissioner were removed to Donald.

Prior to Confederation the Government imposed a tax of fifty cents an ounce on all gold going out of the country, which was the cause of a lot of smuggling, the consequence being that the returns given in the mining reports give a very inadequate idea of the amount of gold taken out of the creek. It has been estimated by those conversant with the subject that there must have been, at the very least, nine million dollars extracted from Wild Horse during the three or four years following its discovery, and they consider that a fair estimate of the total output up to the present time would be in the neighbourhood of seventeen million dollars.

It was a natural sequence to the discovery of the rich Wild Horse placers that men should make diligent search up the numerous streams and creeks of the country for further deposits of the precious metals. These quests were successful to a certain extent, resulting in gold being discovered on Perry Creek, a branch of the St. Mary's, in 1868, on Palmer's Bar Creek, and other branches of the Upper Moyie River in 1870, the most important being that on Perry Creek, when a town soon sprang up and numerous claims were worked to advantage. The first claim, called the Jewelry Box which was easily worked and produced lots of nuggets, was situated just below the falls, where work has been carried on at intervals almost ever since, with varying degrees of success. When the surface diggings had been worked out at this point some parties undertook to drive a tunnel, following an old channel, which appeared to run round one side of the falls. This is known as the Mount Cenis tunnel. The work proving too expensive for individual miners, it passed into the hands of the Black Hills Company, and then into the possession of the present owners, the Perry Creek Mining Company, who have spent large sums in development work and buildings, and are making preparations to carry on operations in a much more extensive manner the coming season.

In a few years the rich deposits in these streams were worked out, and the number of men in the country were greatly reduced, only a few private companies and individual miners being left, who carried on desultory work on the various creeks until about the year 1882, when quite a little ex-

citement was caused by the discovery of gold on Bull River, a stream which flows into the Kootenay about twenty miles below Wild Horse Creek. The discovery was made by Mr. Phillipps, who at the time was engaged in building a bridge across the cañon in the river where it debouches from the mountains. He was amusing himself one Sunday by prospecting the sides of the cañon, when he ran across a crevice in which he took out and washed in a gold pan coarse gold to the value of sixty-two dollars. There was an immediate rush to the spot, but the diggings did not prove very profitable or extensive, Joe Bourgeois and Charles Clemm being the two most successful men, taking out a few thousands. The largest piece on this creek weighed about \$16 in gold, washed out by Sam Brewer and Roger Moore.

Since that time placer mining has been confined principally to hydraulic companies who are operating on the various streams, prospectors having turned their attention now more particularly towards the discovery of mineral veins and gold quartz.

The first mineral claim that was recorded in the Fort Steele mining division was located on Wild Horse Creek in the fall of 1884, and was situate about five miles up the creek from the old town, near the head of the Victoria ditch, but it was allowed to lapse, the ore not being of a sufficiently high grade to warrant the expenditure of any money on development work, owing to the backward state of the country at the time. For the next few years very little prospecting was done, the next location on the creek being in 1887 by Wm. Voss, who still retains possession of the property. This claim is situate at the head of Victoria Gulch, a branch of the Wild Horse. The ledge is about sixty feet in width, showing a fine body of ore which carries gold silver and lead. A tunnel has been run in on the lead for a considerable distance. But it was not until the summer of 1893 that the prospecting of Wild Horse began in earnest. It was during this summer that Banks and Young discovered and staked off the Dardanelles group. Numerous other locations were made the same season by other parties, and the number of claims have increased rapidly ever since, until, at the present time, they can be numbered by the hundred and are scattered over both sides of the main stream and its tributaries for a distance of ten miles from its mouth, the character of the rock being principally gold quartz, but development work has necessarily been confined to the actual assessment work, which has been done in order to retain possession of the property, consequently very little is as yet known as to the value of this mineral belt.

Prior to these discoveries on Wild Horse, in the fall of 1890, James Dibble and two other men located what has turned out to be a most valuable mineral deposit, which is now known as the Dibble group, in a gulch of the Rockies about ten miles east from Fort Steele and the same distance south from the Wild Horse. The ore is a grey copper carrying gold and antimonial silver, some of it going very high in gold and silver. This property may now be ranked as an ore producing mine, it being under a bond at present to some Montana

mining men. This mineral belt has been traced for a considerable distance in a northerly direction over the divide to Shingle Creek, on which there are quite a number of locations.

The next discovery of importance was on the now celebrated North Star mine, staked out and recorded by Joseph Bourgeois and James Langell in the summer of 1892. They immediately started in to develop the property and very soon had a very fine showing of galena and carbonates. It soon passed into the hands of D. D. Mann, of Montreal, who formed a company and commenced operations in the beginning of 1893. Work has been carried on almost continuously ever since, until now this mine is recognized as being one of the most valuable properties in the Kootenays, and from the indications on the mineral bearing veins in the vicinity there seems very little doubt but that there is an immense body of silver-lead ore awaiting development. The whole country for some miles surrounding the original locations has been staked off, on many of which considerable development work has been done, and several have lately passed at good figures, into the hands of mining companies who no doubt intend to commence work as soon as possible.

The next mineral group worthy of reference is situate on the Moyie Lake about thirty miles south from Fort Steele. This ore body was discovered by an Indian while hunting in the summer of 1893. He stumbled across a large outcrop of galena where it was exposed to view on the precipitous side of a cliff about 1,500 feet above the lake. On reaching the mission he informed Father Ceccola of his find, who, making a satisfactory arrangement with the Indian, immediately set out for the spot, accompanied by James Cronin, who was on a visit to the mission. At the same time Messrs. Hogg and Houghton, engineers engaged in exploring the country in the interests of the C.P.R., being camped in the vicinity, got wind of the discovery and were soon on the ground. They all located claims, on which considerable work has since been done. The ore is galena and of the same character as that found in the North Star, on the St. Eugene and the Peter, the original locations. Six hundred feet of tunnelling has been run in, more than half of which being on the lead with drifts and connecting shafts, so that now this property may be ranked as a working mine and as soon as proper transportation facilities are established will ship large quantities of ore.

Numerous other mineral belts have been discovered in other parts of the country within the last four or five years, the ore attracting the most attention at present being the gold quartz leads on Perry Creek, extending for some miles adjacent to and above the old placer diggings. The original claim was staked by a man named Sherwood in July, 1895. There were so many locations being made all over the district that the value of this discovery escaped notice until the following year when interest was gradually awakened and men began to realize that the country in the vicinity of Perry Creek was well worth prospecting, the consequence being that in a very short time the hill sides bordering the creek were staked off for a distance of seven or eight miles. There has been

little opportunity so far toward doing development work. Although a few companies are working this winter with satisfactory results, it is only surface work, consequently the value of these properties still remains in abeyance, but from present appearances it will not be long before not only Perry Creek but all the other mineral belts of the district will be in a process of active development, brought on by the construction of the long-talked-of and hoped for Crow's Nest Pass Railroad. It seems strange that this route has not been utilized before for railway purposes, for ever since 1873 it has been known to exist. In that year Mr. Phillipps, who is at present a stipendiary magistrate for this district, passed through it to the north-west with a companion named Jno. Collins. In the same year Phillipps and a man named Morrissey while camped close to the mouth of a tributary of Elk River, noticed a large amount of what Morrissey supposed to be black sand in the creek, but which, on examination, proved to be coal dust from the coal measures in the vicinity now in the possession of the Crow's Nest Coal Company. Mr. Phillipps reported the discovery of this pass to Rogers, the engineer in charge of the C.P.R. surveys, when he was exploring the country, but at that time the Government objected to the location of any railway line within 100 miles of the international boundary, consequently it was passed over and no examination made of it. About the year '79 or so the Government made a small appropriation towards cutting a trail through the pass, which was completed on or about the year '82. It was not until the year '84 or '85 that the coal limits were staked off and applied for, the first portion being in the vicinity of Marten Creek, which now proves to be near the eastern boundary of the known coal fields. The following year Wm. Fernie, who was looking after the interests of the company, becoming aware of the existence of the coal measures on the main Elk River, took steps so as to gain control of the whole coal field, which now constitutes the property of the Crow's Nest Coal Company.

Some few miles south, within a short distance of the international boundary on the branches of the Flathead River, large coal oil springs were discovered shortly after the coal measures had been taken up. These springs are supposed, on reliable authority, to indicate the presence of large quantities of oil in close proximity to the surface, but all the lands in this section of the district have been reserved by the Government for reasons best known to themselves.

Before concluding this article it will not be out of place to give an account of how Fort Steele, the present distributing point for the district, came into existence. The town is situated on a bench overlooking the Kootenay at its confluence with the Wild Horse Creek and St. Mary's River about five miles from the site of the old mining town which sprang up in the vicinity of the placer grounds. A ferry and trading post was established here by Jno. T. Galbraith, Col. Keeler and Marion Nolan in the fall of 1861. Jno. T. Galbraith having located the ground and buying out his two partners, carried on the business with the assistance of his brother, James Galbraith, who was succeeded by R. L. T. Galbraith, the present owner of the pro-

perty. For a number of years it was known as Galbraith's Ferry, but on the arrival of the North-West mounted police, under the command of Major Steele in 1887, who established a fort at this point, the name of the place was changed to Fort Steele. It has now become quite an important centre for the mining interests of the section and will, no doubt, make rapid progress during the next few years, for a change has come over the spirit of the scene, owing to the promised early construction of the railroad, which will place this portion of British Columbia not only in touch with the sister districts, but also with the outside world. The Fort Steele mining division may now look forward with confidence to an era of great prosperity, and the old difficulty with regard to proper transportation facilities may be relegated to the past, and looked upon as ancient history. McV.

From Vernon.

THERE can be no doubt that we are on the eve of a bright awakening after our long state of somnolency. The tide which had been against us for so long is on the turn, and at last Dame Fortune may think fit to favour us. Since attention has been paid to our mineral wealth some very promising finds in and about Vernon have been made.

On some of these claims considerable work has been done, and assays so far have proved that the propositions, in many instances, are well worthy of consideration; but the great drawback to development has been the want of capital to make the necessary investigations.

Exceptionally good results have been obtained from the assays made, ranging from \$3 or \$4 up to \$1,300 per ton.

THE BON DIABLE MINING COMPANY, LTD

This claim was among the first to attract attention in this district. It is situated on the B. X. ranche, about three and a-half miles north-east of the city, being owned by L. Simmons and others, and in the fall of last year a limited liability company was formed to develop the property. Their capital stock is \$75,000, of which \$35,000 has been set apart as treasury stock. The shares are \$1 each, which, unlike many companies, they issue at face value fully paid up.

The first assay made by Mr. F. H. Latimer, of Vernon, is dated October 23rd, 1895, in which the ore is described as white quartz with some sulphurets and iron oxides; weight per ton (2,000 pounds), gold, 12 ounces 4 dwt.; silver, 4 ounces. Total value, \$244.80.

A good deal of work has been done on the property. They have cribbed a shaft and tunnel of over eighty-five feet. Unluckily they have come to a fault; but I think they will find the lead in a few days, from present indications.

THE RUBY GOLD MINING COMPANY.

The Ruby Gold Mining Company's property is situated seven miles south of the city on Okanagan Lake.

There are seven other claims included with the Ruby, namely: Golden Summit, Golden Tiger, Golden Sunset, Golden Twilight, Golden Dragon, Golden Mountain Peak, and Queen of Sheba; but work has only been done on the Ruby Gold, where

a shaft fifteen feet has been put down, and work has begun on a new contract for sinking another twenty-five feet. The character of the ore is white quartz very heavily mineralized, of which there is a twelve-foot ledge.

The results of the last assay, by McKillop, of Nelson, give gold and silver, with a strong trace of tellurium. On the Golden Sunset there is a ledge of between forty and fifty feet, which extends the whole length of the claim.

On the Golden Dragon there is a ledge of twelve feet width cropping right out of the cliff, with another of five feet width running parallel within fifteen feet of the twelve-foot ledge.

Five of these claims can be approached by boat, as they are right on the shore of the lake. The company contemplate purchasing three more claims to complete their group.

THE SILVER STAR MINING COMPANY.

This property is fifteen miles north-east of Vernon, and is of quite a different character to the foregoing. The company has a shaft twenty-six feet down with a lead six feet wide, showing six inches of solid galena on the foot wall. The quartz is very heavily mineralized. Several assays have been made of this rock: one by Mr. Latimer, dated March 1st, 1897, gives \$61 gold and silver to the ton. This property, which is owned by Messrs. O'Keefe, A. G. Fuller and others, is one of the most promising in the district. The same owners have several other claims of a similar kind on Round Lake, twelve miles north of the city.

THE BLUE JAY CLAIM.

Owned by Mr. F. N. Latimer, has been bonded for \$10,000, the assay from which topped \$1,300 per ton, but I have no reports as yet from the owner.

The Falcon claim, owned by the same person, and like the Blue Jay, almost within the city limits, is to be opened up next week, weather permitting.

Reports from Camp Hewitt and Mordan's Camp will follow.

F. ADRIAN MEYER.

The Province Mining Map.

WE have received from the publishers a copy of the above which we understand is the first of a series of maps which the Province Publishing Co., Ltd., intend issuing. The title "map" is a misnomer as the folder which is in handy form for carrying in the pocket, contains more than one; viz. a key map of the whole province, a map of the Southern division of west Kootenay, showing the mineral claims located, a large and general map of the same division, and a map of the Toad Mountain division of West Kootenay.

The folder itself contains much information useful to mining men, amongst which may be particularly mentioned "A Short Telegraphic Code" which will prove to be most serviceable to business men.

Altogether the publication is a most creditable one and the Province Publishing Co. in undertaking to issue a series of maps of the various mining districts of British Columbia, are not only filling a much felt want but are showing a degree of enterprise which is highly commendable. They should have the support of the community in the work they have undertaken.

The Coast and Islands, Etc.

ON the seaboard of the province and on the islands of the Gulf of Georgia, localities very convenient of access by boat from Vancouver, from which port a splendid service affording twice-a-week communication is provided by the Union Steamship Company, and from Victoria by the Canadian Pacific Navigation Company, there are extensive deposits of mineral from which great things may confidently be expected. Just at the present writing little news can be obtained of a definite nature, but it is known that a large number of properties are being placed under bond or sold outright. Development work is being vigorously pushed, the snow disappearing in this district much earlier than is the case in the interior, which must always be an advantage to those interested in the mining industry on the coast. The sale of the properties of the Channe Mining Company for \$135,000 is not yet closed, but Mr. Grant Govan, the representative of the syndicate which is purchasing the property, is expected to arrive in Vancouver daily, when he will complete the details of proving the title and sign the final papers. The completion of this deal, which has been delayed owing to circumstances preventing Mr. Grant Govan from visiting the province earlier, is looked forward to by mining men because of the impetus it will naturally give to the industry in this rapidly developing section. The properties of the company included in the deal are amongst the best known on the coast, and considerable intelligent development work has been done upon most of them during the last few months.

Reports from Jervis Inlet are decidedly encouraging, some rich finds having been made by Nanaimo parties who are proceeding with the necessary work to prove their value. There are persistent rumours of rich strikes having been made in this locality, but confirmation is difficult to obtain owing to the secretiveness of the parties interested who are arranging to secure other properties if their expectations are realized. In Frederick's Arm a large deposit of copper has been discovered and many claims staked. It is believed by many that this strike will prove of wonderful richness, and many prospectors are now thoroughly looking over the adjacent country.

Considerable money is being invested by local men in outfitting prospecting parties, one well-known firm having no less than six parties either already in the field or on the eve of their departure. Two of these will spend the summer in the Coast districts, the others extending their operations to hitherto neglected localities in the interior and going as far north as Cassiar. It is confidently expected that the result of this organized prospecting will be the discovery of mineral deposits in localities hitherto considered too difficult of access by the haphazard prospectors to whom the work has been confined. As an indication of the number of prospectors who will cover the field during the summer it may be mentioned that three weeks ago fifty miners' licenses were issued out of the New Westminster office, two weeks ago eighty-one, and last week one hundred and five. A large proportion of these will prospect in the Harrison and Pitt Lake districts, and it is hoped by New Wesmin-

ster and Vancouver business men that some good locations will be made in those localities, the trade from which would naturally be tributary to the Coast cities and the Mainland. To prove the extent to which the mining fever has extended amongst all classes of the people, it is interesting to note that amongst the prospectors who will leave the city in a few days one at least is a titled gentleman, Lord Sholto Douglas.

The search for coal on the Mainland is still being vigorously prosecuted, and rumours are current to the effect that a valuable deposit of black diamonds has been located by Vancouver parties. Samples shown give evidence of true vegetable deposit and much interest has been created by the positive assurances made as to its extent and value.

From Kamloops news is received of great activity in the camp and development work is being done on twelve or fourteen claims, but legitimate mining news is somewhat crowded out by the recent claim jumping sensation. As far as can be ascertained two claims, the Phoenix and the Blue Bird, have been "jumped" by three men claiming to be from the Kootenay. They re-staked the claims and swore according to mining law that mineral was in place, and, strangest of all, that the property was not occupied. They claim that Mr. Jenms, of Victoria, and Mr. Morrison, of Kamloops, who originally staked the property, swore that mineral was in place when they had no proof of its existence. The "jumpers" have built a cabin on the property and will stay there until the courts settle the difficulty. One of them claims to be a British subject, while another is reported to boastfully remark that the three men were sent to jump the claims and are in receipt of salaries until their action is either confirmed or pronounced illegal.

Great activity is noticeable in regard to properties situated in the Lillooet district, and claims under bond now will be taken up at the expiration of the stated periods. A new syndicate claiming to have a property equal in value to the famous Golden Cache is under way and will without doubt be incorporated within the next few days. Mining men express themselves as convinced that as far as rich deposits are concerned in this district the "end is not yet." The Gold Reef Mining Company are operating some very promising claims near the Golden Cache and arrangements are being made for development work to be proceeded with immediately. The average assay from the rock on the surface runs about \$150 and the directorate of the company is composed of some of Vancouver's most responsible citizens.

The Athabasca Mining Company, whose properties are located in the Nelson district, are proceeding with development work. The stock of this company is very largely held in Vancouver and New Westminster, the mine having been promoted and principally worked from the latter city. News has recently been received of a rich strike of ore cross-cutting the main ledge at 155 feet. The main tunnel is now in about 200 feet, and the ore at this depth averages from \$100 to \$250.

Messrs. C. N. Davidson, of Vancouver; A. A. Davidson and — Russell, of Victoria, have associated themselves with Mr. Levi, wholesale jeweller,

of Hamilton, Ont., and are purchasing in the Fairview camp no less than forty properties. Messrs. Davidson Bros. being so well-known and having the reputation of being possessed of more than ordinary good fortune in their investments, news from the camp is received here with great interest and from private sources the following information will be appreciated: Not the least promising is the Faunce mine which, in the opinion of experts, will pay "from the grass roots," and on this property a shaft down twenty-five feet and a tunnel of thirty-five feet have proven that the ledge is of exceptional richness and averages about five feet. The Elmore, Randolph, Highland Chief, California, Quartz Queen, White Swan, Tin Horn, Winchester, Comstock, Mammoth, Ocean Wave, Iron Clad, Reco, Gold Hill, Shamrock, Silver Bow, Smuggler, Stenwinder and Morning Star, constitute the principal holdings of this fortunate partnership and opinions obtained from experts who have visited the properties are to the effect that the ore in the large majority of the claims is of great value. On the Winchester there is \$3,000 worth of ore on the dump and there is little doubt that there is \$50,000 worth of ore in sight. The ledge is four feet wide and assays as high as \$500 have been obtained from it. That this is a grand property there can be no doubt, the development work, which consists of a shaft down about forty-five feet, another of fifteen feet, and several open cuts, having proved beyond all possibility of doubt the wisdom of the parties who have stayed with the property for a number of years, knowing they had a good thing.

Altogether one may sum up the situation in the mining world at this writing as one of great promise. The amount of development work being done, the systematic and careful prospecting now being organized for the coming summer, all will have the tendency of proving the richness of the mineral deposits in the various districts of the province, and it may confidently be expected that the approaching season will be productive of great results.

GOODMAN.

Vancouver, B.C.

A Most Important Invention.

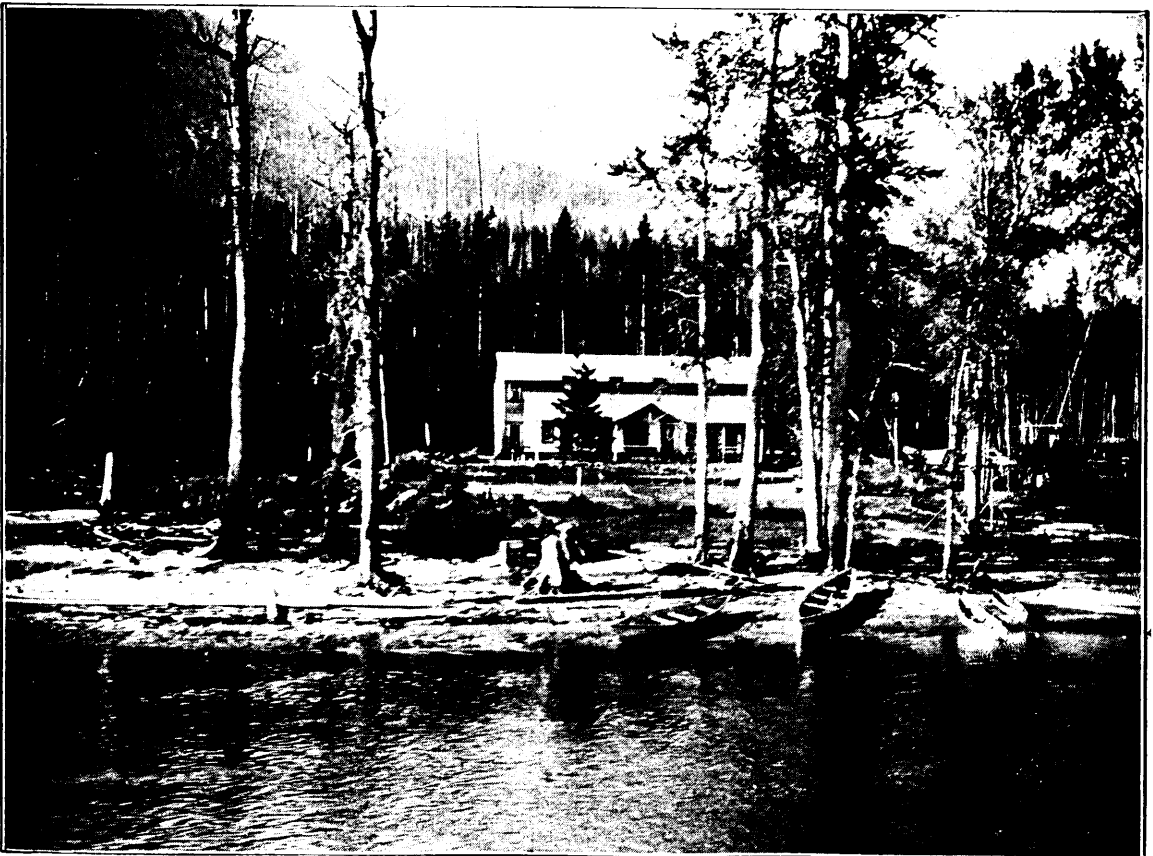
A NEW ROCK CRUSHER.

VICTORIA bids fair to become an important centre for the manufacture of mining machinery of various kinds. Only the other day a test was made at the shops of the Albion Iron Works with a new rock crusher, which practical men pronounce to be the most perfect machine of its kind in the market. The inventors of this crusher are Mr. B. R. Seabrook, manager of the Albion Iron Works, and Mr. J. R. Brown of Harrison Hot Springs, patents being applied for in all countries. There are several other kinds of mining machinery, the invention of Mr. Seabrook, which will be brought out in due course; but at present, the manufacture of the rock crushers we are describing will be made the nucleus of extensive mining machinery manufacturing works by the Albion Iron Works. Already a large number of the machines have been spoken for, and when thoroughly ready to undertake their manufacture on a large scale, due notice will be given.

The crusher which was worked the other day



RUTH AND RUTH MINE, GOLDEN, B.C.



THE OUTLET HOTEL, BALFOUR, B.C.

in presence of a number of prominent men, on invitation of Mr. R. P. Rithet, M.P.P., though lacking many minor improvements invented by Mr. Seabrook which he was unable to have ready owing to lack of time, satisfactorily demonstrated to all present that it could do all that is claimed for it.

About eight and one-half tons of rock, including trap rock, cobbles and quartz were put through the machine in forty-five minutes and reduced to coarse dust.

The following is a description of the machine given by Mr. Seabrook:

"The machine will be known as the "Seabrook-Brown Improved Lever Rock Crusher," and the Albion Iron Works will at once begin the work of manufacturing them, as they have received several orders already. Immediately over the machine is a large telescope hopper. The lower part of this hopper is so constructed that it may be arranged sufficiently high to admit of changing the dies as required, thus avoiding vexatious delays and expense of moving and shifting the hopper. Immediately on top of the upper oscillators, or crushing portion of the machine, is a heavy hood which will convey the rock directly into the mouth of the crusher, allowing it to engage with the die plates. The rock is sheared, crushed and given a downward movement with a half revolution. On the backward half revolution the rock is turned over by the use of the teeth and placed in a suitable position for the return movement of the machine. While the top oscillators are in action and crushing constantly, the material is discharged upon a grizzly or screen of suitable mesh to deduct all the rock which has been crushed fine enough before the remaining rock is discharged upon one or more lower oscillators. While the rock is being further crushed by the lower oscillators, there is another grizzly which takes all the rock that is not too large to pass through. This large rock is again treated by the lower oscillators, so that it is impossible for the uncrushed rock to pass through the machine. The lower oscillators have exactly the same movement as the upper ones, with the addition of one-third more travel to each. It is therefore impossible to clog the machine. The rock is crushed very evenly, as it changes its position with every movement. The crusher cannot be over-fed, because the lower oscillators will handle more material than the upper one

"Another distinct advantage is that the crusher is so designed that it can be made into sections, or self-contained, according to the facility for transportation. It is claimed for the machine that it can crush the hardest trap rock or earth boulders. Having five distinct movements while crushing the wear of the die is about one-fourth that on an ordinary crusher.

"The crusher has immense leverage power, and therefore only requires about $2\frac{1}{2}$ nominal horsepower exerted on the wheel or lever. It is so arranged that any kind of power can be used. The crusher is calculated to treat 500 tons of rock in 24 hours."

The machine, Mr. Seabrook also stated, can be made to any capacity to meet the requirements of purchasers. One machine has been designed to crush two tons per minute. The crusher can be regulated in a very few minutes by a simple con-

trivance, so that the rock can be crushed to any degree of fineness.

This is not Mr. Seabrook's only invention, patents being applied for a large quantity of mining machinery. Messrs. Dier, Davidson and Russell have already spoken for a crusher for their properties in the Fairview district, and Mr. Archer, of Chicago, who is deeply interested in Kootenay, and who was present at the trial will also order two crushers. Other orders are also in hand.

The inventions of Mr. Seabrook mean much for Victoria. They mean the employment of a large number of men in the near future, and the making of the city a centre where mining men will look for the appliances necessary for the development of the mines. The excellence of Mr. Seabrook's several inventions having been already satisfactorily proved, makes it certain that a very large trade will be done by the Albion Iron Works in their new departure.

The Town of Trail.

BESIDES the large smelting and refining works established at Trail there are the extensive machine works, a large saw mill and several other industries in full operation. Already it is a railway and steamboat centre for the distribution of supplies throughout the district and its position as an important commercial and manufacturing centre is assured. Building operations have been very active the past year and a regular boom in that line is looked for during 1897. It is not surprising therefore to hear that real estate values have a decidedly upward tendency at the present time, but there is no appearance of any unhealthy boom. In fact the growth of Trail has been steady and sure and it is likely to remain so. Thanks to Mr. Heinze it has a good system of water works and electric light, and the townspeople have organized an efficient corps of volunteer firemen. The people of Trail are public-spirited and united in anything likely to advance the welfare of their town, and this is a most promising feature of the place. Only the other day the Bank of British North America opened a branch in the town, and from all accounts it will have as much business as it can attend to. Altogether we look forward to Trail becoming one of the largest and most important centres in Kootenay.

ITS MINES.

In the neighbourhood and tributary to it are a number of mines being opened up, of which the following is a short summary:

A number of companies are at work on Lookout Mountain employing about fifty men and several private owners are engaged developing their claims. Of these the Little Joe, Red Paint, Joker, Imperial, Sovereign, Stemwinder, Sultana and Norway are among the most prominent companies now at work.

The result of the work on all these claims has proved as satisfactory as any done in other portions of the district.

Sullivan Creek, where development is being carried on very extensively during this winter, is fast becoming a district which is interesting capital, and among the most active companies now developing is the Heather Bell Company, working six-

teen men, with some good assays. The Queen Victoria Gold Mining Company's claim gave an average of \$21 in gold and is now working eight men.

The St. Paul Gold Mining Company, which received returns of \$64 and \$70 from large samples sent to the Omaha smelter, are at present working four men.

The Goldie Rene Company are working six men, with assays of \$54. This company intends doing a great amount of work during the present year.

Across the Columbia River opposite Sullivan Creek is the Minnie group. Development work will be commenced soon on a vein thirty feet wide by an eastern company. A little further south along the Columbia River is the Granite Mountain group, working four men with fifty feet of tunnel and veins are in sight.

The C. and J. group is being got in readiness for heavy development by a New York company. This property is supposed to be the continuation of the Le Roi-Columbia Kootenay mines at Rossland.

But the man who is most active in looking after the mining industry of the town and who gives to it the benefit of his long experience is Mr. E. S. Topping, the first owner of the Le Roi at Rossland, and who subsequently became the founder, or as he is known, the father of Trail.

A large amount of quiet, steady development work, is being prosecuted on Lookout Mountain, though the seasonal conditions will prevent any tangible result for a short time. The shipping ore recently uncovered in the Sovereign continues to show up well. The crosscut on the Joker is now in thirty-four feet and is expected soon to tap the ledge.

The owners of the Little Joe group have now incorporated under the name of the Little Joe Consolidated Gold Mining Co., Ltd. The consolidation includes the Little Joe, a full claim, the Western Spy, fraction, about 650 by 1,500 feet, and the Kangaroo, fraction about 1,250 by 1,500 feet. The ground extends eastward from the northern corner of the Hidden Treasure, one of the Crown Point Co's claims. Considerable development work has been done, and the property is considered among the best in the district. The latest assay from the ore in the tunnel, gave a gold value of \$238, while assays across the ledge have returned an average value of \$59.95 in gold.

Some excitement was created here last week by a report that some workmen excavating a foundation, had discovered placer gold in paying quantities. Investigation showed the report to be merely one of the periodic stories that start up every now and then owing to the fact that occasional colours can be found almost anywhere in the gravel along the water courses here.

Machinery has recently been installed at the Pug mine situated on the east bank of the Columbia about two miles above Waneta.

The dispute between the Buckeye and the Maud S. in the Waterloo camp has been settled practically in favor of the owners of the Maud S., and thorough development work is being done. The ore is a free milling quartz which has returned unusually high values.

The work on the refinery in connection with the Trail Smelter, is being pushed as rapidly as possible. The machinery has arrived.

The electric light plant is expected to be in operation in two weeks.

The discovery of tin ore is reported from the North Fork of the Salmon River. The report is believed to be well founded though the claim on which the tin was found is not yet known.

D. M. W.

Notes From Kaslo.

THE skating rink is in full blast. Curling and hockey matches have been played with the Rossland, Nelson and Sandon teams, carnivals, tugs-of-war and all other sports with crowded houses have made the rink the centre of attraction during the winter months. The rink which is all covered, is 70 by 165 feet, having two curling rinks with the large skating rink in the centre. Kaslo still lacks hotel accommodation, a grand opening for a large hotel is here presented, as parties are compelled to wire from Nelson or Ainsworth on the way up the Lake to secure rooms. Parties interested in a hotel site should look Kaslo up and see the advantages and good investment here offered. We have good accommodation in the hotels now running but we still need another first-class house, which would be a profitable investment to the right party.

Mr. Hewitt Bostock, M.P. for the Yale-Cariboo district, paid us a visit recently and gave a fine address to his Kaslo friends, touching on several local matters which he brought up in Ottawa, especially the opening up of the Duncan and Lardo country, and while here he inspected the water works which he was highly pleased with expressing himself as more than surprised at the progress made in Kaslo since his last visit.

Work has commenced on the Lardo River, for clearing the drift and falling trees, the distance between the Kootenay Lake and Howser Lake, being 14 miles. The work is only the preliminary part of opening up this valuable mining district in the near future, and it is hoped to make the stream navigable for steamers to ply and supply provisions to several mines in the Duncan district.

There is a rumour that the Pilot Bay smelter will change hands in the course of a few days, and that operations will commence sooner than expected.

Several large Slocan deals have changed hands in the last few days. Transfers are frequent, and as soon as the snow is off the ground, the hills will once more be crowded with prospectors, opening up their claims and searching for more finds.

J. M. Harris, president of the Reco Mining Co., is on the war path, owing to a dispute over town lots to overcome which he gave instructions to have a tunnel commenced, thereby throwing earth and rocks on the building being erected, and the building operations had to be stopped.

The Hon. Geo. E. Foster, ex-minister of finance who is taking a business trip through Kootenay on behalf of his company, The British Canadian Gold Fields Co., was welcomed by his political friends, who tendered him a banquet at The Kaslo. ELMA.

Texada Island.

THE known mineral belt occupies the extreme northerly end of the island, embracing about twenty-five square miles of territory with the iron mines at the south-west corner. The steamers land at the Van Anda mine, as the principal work so far done is easily accessible from this point.

TOPOGRAPHY.

Commencing at the steamer landing at the Van Anda mine, the land rises at the rate of about twenty degrees, attaining an elevation of about 1,800 feet at the highest point in the known mineral belt. Near the water on the easterly side the formation is very much out of place on the surface. On the westerly side the rise from the water to the highest elevation is very sharp, the full elevation on this side being attained within a mile from the shore.

COUNTRY ROCK.

The main rock of the mineral belt is porphyry and lime, porphyry predominating. At several points in the interior of the island some slate shows.

DEVELOPMENT.

The largest amount of work has been done at the Van Anda mine. This property embraces fifteen or sixteen claims, and has several known veins, work, however, having been done on only one, and the work to date having been largely of an exploring nature. A shaft has been sunk 128 feet, partly on the vein and partly through the adjacent line, ore having been developed to a depth of sixty feet. It is expected the shaft will again strike the vein in about thirty feet. The ore taken from this vein has ranged in value from \$2 or \$3 at the surface to over \$1,000, assays on picked samples. A recent shipment of forty tons to the Everett, U.S.A., smelter gave returns of:

Copper: 19½ per cent., equalling 390 pounds to the ton. Gold: \$18.60. Silver: eleven ounces.

At the date of my visit, 18th January, 1897, there were about thirty tons of ore on the dump that would average fully twenty-five per cent. copper. Mr. Blewett informed me it would run much better in gold than the shipment above alluded to. While I was at the mine between four and five tons of ore were hoisted that would average fully forty per cent. copper (being largely bornite). The vein, as far as developed, has shown from one to four feet of shipping ore, commencing about twenty feet below the surface and the ore increasing in value with depth, as well as in quantity. A drift has been run 180 feet at the 60-foot level, and the bornite ore above alluded to came from the head of this drift. Preparations are being made for pushing the work actively and in a systematic manner on this property, it being the opinion of Mr. Blewett that they will be in permanent formation by the time the 200-foot level is reached.

RAVEN

Lies southerly from the Van Anda one and a-half miles. A shaft is contracted for and work commenced. A tunnel has been run down 100 feet, cutting the vein about seventy feet below the surface. The ore from this property is quite similar in gen-

eral appearance to that from the Van Anda. About forty tons of ore were shipped recently.

KIRK LAKE MINES.

This group of property lies about one and a-half miles westerly from the Van Anda. Shaft down on the vein fifty feet and good ore being raised. Here, as at the Van Anda, wherever oxidation has taken place free gold is found. The mineralized formation of the Victoria is fully 300 feet wide. Four veins are known to exist within its limits; work, however, having been done on but one.

NUT CRACKER

Corners on the Kirk Lake group to the south-east, with the Lorindale lying south of it, and the Yellow Jacket to the east. A well defined vein shows on the Nut Cracker, running north of west. Work consists of a fourteen-foot shaft which has developed a vein of about four feet. The same vein is found in the Yellow Jacket, where about the same amount of work has been done and shows a similar class of ore.

LORINDALE.

Adjoins the Nut Cracker. Has a well defined vein. Work enough has been done on this property, which, had it been done in a legitimate manner, would have meant at least a 150-foot shaft. The property, however, has been badly "gophered," every effort having evidently been directed to an attempt to obtain samples of free gold, and apparently no intention towards the systematic development of the property. The property merits very different treatment from what it has received.

SURPRISE.

This property presents some peculiar features. The shaft is down sixty feet. The vein is well mineralized its full width, four and a-half feet, and has both walls well defined. This property is owned by a party of men from Comox, who are developing it on the co-operative plan. The result of their work shows what men of limited means, but with a disposition to develop their property, can do.

GOLDEN SLIPPER •

Is on the westerly side of the island and about a mile north-easterly from the iron mines. Mr. Millar has done a good deal of general prospecting work on this property and has uncovered the vein at several points. At one place he has a shaft about fifteen feet deep showing the vein to be a strong one, nine feet in width. This property lies on a steep hillside and in a position to be developed economically. There is every indication that with the proper amount of development it will prove most valuable property.

TIP TOP

Adjoins the Golden Slipper on the northerly side. The Golden Slipper vein extends through this property and is readily traceable the length of the claim. There are two other veins on the property nearly parallel to this one, and a cross-vein extends across this property, also across the Copper King and Nigger Baby properties. This vein outcrops on the Silver King, near tidewater, and as the Tip Top, Copper King and Nigger Baby are fully 1,500 feet above tidewater, this vein will afford an avenue for opening up all of these properties.

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COPPER KING

Adjoins the Tip Top on the north-east. There are two strong, well defined veins bearing north-westerly, and the one referred to as cross-cutting this and other property which bears south-westerly. A shaft some fifteen feet deep on this vein has developed nearly five feet of good looking ore.

SILVER TIP

Adjoins the Surprise on the north-west. Two veins cross this property. On one a shaft has been sunk sixty-four feet with between four and five feet of ore in the bottom of the shaft, worth about \$40 per ton. This ore is most peculiar, as it looks as though it was rapidly changing to gray copper, but numerous assays show the value to be chiefly gold. This ore has steadily improved with depth.

OTHER CLAIMS.

A large number of claims have been located in this mineral belt, on which little or no work has been done. It can safely be said that there is not a claim on the island that has been fairly prospected and it is doubtful if the number of veins actually existing in any of the claims are known to the owners. The formation is of such a nature that if situated near the famous Cripple Creek, Col., camp, there would be a rush on the part of capitalists to get men and machinery on the ground for a thorough exploitation of the territory. It is not a poor man's camp, but one that requires a considerable investment of capital to put a property on a paying basis, and the claims should be handled in groups.

POCKETS.

An impression has been given out by parties who have been guilty of "gophering" that the mineral is in pockets instead of in regular veins, although the reverse is unquestionably true. It is a fact that while the formation is readily traceable through a claim and from one claim to another that well defined walls are rarely encountered until some depth is reached. One can travel along a vein and can dig through the decomposed vein matter which is usually three to five feet, and can take the material so excavated and wash out from a few colours to a dollar or more of gold. This is true of various claims, and at almost any point on the vein where oxidation has occurred to any extent.

The camp presents an inviting field for capital, and indications are such as to warrant a liberal expenditure in exploration and development, but the work should be under the direction of mining men backed with capital sufficient to properly develop a property.

JOHN R. WOLCOTT.

Vancouver, B.C., 15th February, 1897.

The Proposed Increase of Duty on Ore by the United States.

THE proposed increase of the duty on the products of our mines by the United States if carried into effect will only result in injury to themselves and in benefit to Canada. At first it will perhaps serve as a check on the mining industry of British Columbia, but this will only be temporary, because smelting plants will soon be erected near our mines and the necessity for exporting ore to the United States will cease to exist. The smelters on

the other side of the line and the American railways will be out just that much and Canada will be so much the richer. It is difficult to see what the United States expect to gain by increasing the present duty, but probably they know their own business better than we do. At all events, whether the proposed increase of duty on the product of the mine become law or whether it is dropped, one thing is certain, that it teaches us in Canada a lesson we should not forget.

It teaches us that we may at any time and without warning receive a check to our mining industry if we continue to rely upon the United States for the smelting of our ores. We must set to work at once to make ourselves thoroughly independent, and this can only be done by the immediate erection of smelters within our own borders.

The action of the United States in proposing to heavily tax our ores is the strongest argument that can be presented in favour of the early construction of the Crow's Nest Pass Railway to supply us with cheap fuel for the use of our smelters. In the face of the menace levelled by the United States at the welfare of the mining industry of this province the Dominion Government will certainly be neglectful of its duty if the Crow's Nest Pass Railway is not commenced without delay and pushed to an early completion.

Ainsworth Notes.

THE No. 1 mine made another shipment the past week. The continued cold weather having cut their water supply short compelled them to close down the concentrator for a time, the company instead of laying off the mill men, put them to work doing development in the mine.

The "Little Donald" and "Black Diamond" made a shipment of 18 tons the past week. They now have thirty odd men employed and are pushing development as fast as possible.

The Tariff is making regular shipments, about twenty-five men being engaged.

Guss. W. Roche, of Spokane, is in the camp, looking after his mining interests, and reports the Albion tunnel now in 280 feet. Last week they passed through a fifteen-foot vein showing about two feet of good ore. The main vein which they are running the tunnel for, they expect to reach in about forty feet more.

Hon. Al. McCune is in to start up the "Maestro." This with the "Banker" they expect to develop into a shipping proposition in the next four months, and later on a "tramway" will be put in to the Lake Shore about eighteen hundred feet.

The C.P.M. & M. Co. have closed their concentrator on account of the continued cold weather. They have been making shipments of concentrates the past week and now have about one-hundred tons on hand. Mr. W. B. Drummond has returned from his Southern trip and is back at his old place at the mine.

A barber shop and a broker's office have been opened here the past week.

Several mining deals, one or two of considerable importance are being negotiated.

The "Black Diamond" and "Little Donald," which resumed work less than thirty days ago, have

already shipped thirty-four tons of ore and now have ready over 500 sacks more.

In the past thirty days, the "Silver Glance," "Annie May," "Ellen," "Bonanza King," "Noble Three" and "Early Bird" have been sold for cash, prices ranging from \$1,000 to \$15,000. And at the same time there have been fifteen properties bonded at prices ranging from \$15,000 to \$75,000. Several of them have already commenced development. At present there are about 175 miners employed here, but that number will be doubled in the next ninety days, or as soon as cabins can be erected. Prospects are very bright for the Hot Springs Camp for the season of 1897. F.

Rossland Notes.

QUITE the most important event of the past month has been the concentration tests on the low grade, silicious ores of the Le Roi. The matter was first brought up through the suggestion of Manager Rust of the Tacoma smelter that these ores could be successfully concentrated and a few days ago a test of ten tons, taken at random from the dump, was made in the O. K. mill under the superintendence of Dr. Willis, E. Everette and Capt. Hall, superintendent of the Le Roi.

The result of the test was as follows:
Gross value of ore milled, 10½ tons at
\$16 per ton \$168.00
Gold and silver saved on plates 67.85
Gross value of concentrates 43.82

Total \$279.67
The percentage of extraction was 65. The ratio of concentration 6 to 1. The tailings assayed \$5.00.

The above result is so surprising and so entirely at variance with all previous experience, here or elsewhere, with sulphide ores of the character typical of this camp as to have been largely questioned by the practical men of this section. Should the more extensive tests contemplated bear out these results, it will establish a fact of immense benefit to the camp, by showing that large bodies of ore hitherto considered waste can now be made of commercial value.

The Walters company acting in the interest of eastern investors have bonded four-fifths interest in the Pilgrim for \$80,000. The Pilgrim is a fractional claim of about twenty acres, lying north of the War Eagle, and between the Mugwump and the Monita. It is understood that A. W. McCune, the owner of the remaining fifth will sell at the same rate in the event of the bond being taken up.

The hoisting machinery and compressor plant is now in position on the Deer Park, and work is being pushed rapidly. An unexpected find of high grade ore was recently made here at a depth of only fifty feet when preparing the shaft for timbering. Assays ran as high as \$120.

The usual rumours regarding the purchase of the Le Roi, by the ever present English syndicate at figures varying from \$4,000,000, to \$5,000,000, are going the rounds. The latest appears to have some foundation it being stated that Dr. Everette who recently spent a week examining the mine is authorized to offer \$5,000,000.

The Gunnis-Neame Syndicate, of London, Eng., has secured options on the Jumbo, Commander,

Gertrude and Maryland. The figures are believed to be \$500,000 for the Jumbo; \$250,000 for the Commander; \$125,000 for the Gertrude and \$20,000 for the Maryland. The options are all in the name of Douglass John Neame, and all mature on or about April 1st. Deposit has been made in every case and it is confidently expected that the options will be taken up. Mr. Neame has also purchased the Sunday Sun, No. 2, a property located on Deer Park Mountain, a short distance west of the Sunset.

Some interest has been aroused by a letter received from R. G. McConnell, of the Dominion Geological Survey. The letter, which is addressed to the superintendent of the Kootenay-Columbia, states that specimens obtained from this mine last summer are found to contain Gersdorffite, a nickel arsenosulphide, and that "it is possible the ore may contain a nickel value worth considering." W.

A C.P.R. Hotel at Revelstoke.

WE are glad to observe that the Canadian Pacific Railway Company have decided to erect a large hotel at the Revelstoke station. Travelers to West Kootenay will be glad to hear of this and it is one more move on the part of the railway company which shows that they are fully alive to the increasing importance of the Kootenay trade.

A New Mining Paper.

WE have received a copy of No. 1, Vol. 1, of the Trail Creek Miner published at Trail, B.C. It is well conducted; well edited and the make up of the paper shows that experienced men are at the helm of management. Trail is to be congratulated on now having two live newspapers to represent its interests. The Miner is all right and will succeed.

Revelstoke.

THE chief event in mining circles during the past month has been the bonding of the True Fissure claim on the Great Northern group near Ferguson by the Lillooet, Cariboo & Fraser River Gold Fields, Ltd., locally known for short as the Horne-Payne Syndicate. This company has been doing considerable development on the Broadview and Old Sonoma, adjoining claims to the True Fissure, and the results of the work were sufficient to induce them to bond the True Fissure, which is only a prospect with wonderful surface indications, for the sum of \$50,000.

Every week adds to the certainty that the Lardeau River, which empties into Trout Lake, is going to be the scene of big development next summer. The surface indications are extraordinary and what development work has been done has proved the permanent character and richness of the leads to the greatest satisfaction. The consequence is that nearly all the vacant lots in the surveyed portion of Ferguson, the coming mining camp of the Lardeau River, are sold, and building is already commencing there.

The beginning of April will see the official opening of the aerial tramway and concentrator put up by the Horne-Payne syndicate at Lawrie, for which a special train is to be run from Vancouver. The two spans—3,000 feet each—of the tramway are the widest on the continent. The Lanark has a large quantity of ore on the dump

and will be a shipper when the concentrator is working.

A strike was made by two prospectors on the same slope as the Lanark mine in the early part of March which possesses very satisfactory surface showings. The first four shots on the ledge disclosed two feet of galena.

The owners of the Last Chance deep placer mine on French Creek, Big Bend, intend to carry on the work of developing their claim. J. Macfarlane, one of the best practical placer miners in Kootenay, has gone up there to carry out a plan of operation which he thinks should result in success, as he has great faith that, when bed-rock is struck, big money will be made in the claim.

Development work, which has been going on all winter on the Great Western, a claim on the north arm of Arrow Lake, has revealed very satisfactory showings, and the miners are getting out shipping ore from the lead.

Surveyors are making a preliminary survey for the proposed railway from Kootenay Lake to the north-east arm of Arrow Lake and thence up Fish Creek. The Horne-Payne syndicate will build their line from Galena Bay to Ferguson next summer if their mines are turning out enough to warrant the construction of the road, of which at present there is every prospect.

Travel is pouring down into the lower country already, but a good many investors express their intention of returning to Revelstoke, and there is every prospect of a good influx of population and even something very closely resembling a boom in this place during the coming season. G.

Bewick, Moreing & Co.

THE fact that this firm having a world-wide experience, has established a branch in Vancouver, B.C. speaks well for the possibilities of the mining industry in British Columbia. The firm's affairs are managed in this province by Mr. J. D. Kendall who as a mining engineer has had over thirty years' experience, and stands at the top in his profession.

The head office of the company is at Broad Street House, London, England, with branches in western Australia, New Zealand and Vancouver B.C. The members are practical men brought up to mining from their youth and in addition to representing large development and other companies in various parts of the world, they act in British Columbia, among others for the London and British Columbia Gold Fields, who recently bid \$900,000 for the War Eagle mine.

It is firms like Bewick, Moreing & Co. that we want to see established in British Columbia, to give a healthy impetus to the mines of the province

CORRESPONDENCE.

Correspondence on subjects connected with mining affairs in British Columbia invited.

We do not hold ourselves responsible for the opinions which may be expressed in this column. No notice will be taken of communications unless accompanied by the full name and address of the writer. Brevity is essential to insure publication.

Editor of B.C. Mining Record:—At the regular meeting of the Fort Steele Mining Association, held at Fort Steele on Saturday evening Feb. 20th 1897, the enclosed resolution was passed, and I was instructed to forward you a copy of the same, and ask you if you would kindly publish it in your *Mining Record*. Yours respectfully,

H. H. M'VITTIE, Ass. Sec. F.S.M.A.

RESOLUTION.

The following resolution was passed at a meeting of the Fort Steele Mining Association, held on Saturday evening, Feb. 20th, 1897: Moved by R. L. T. Galbraith, seconded by O. S. Frizzell, while the Fort Steele Mining Association wish to show their appreciation of the efforts of Mr. O. F. Venosta in the furtherance of disseminating knowledge of this district, we feel bound to correct an inaccuracy that appears in an interview in a foreign paper and copied into the Fort Steele Prospector. We refer to certain hydraulic works on Perry Creek which are not being worked as stated. In justice to Mr. Venosta we wish to state that we believe these statements have crept into the published interview through an error on the part of the reporter, and as such errors may lead to great misapprehension in the minds of the outside public who would be led to infer what is not a fact, we deem it advisable to place this correction on record.

The Omineca Consolidated Hydraulic Mining Co., Ltd.

Incorporated under the "Companies Act, 1862" (Imperial).

CAPITAL, \$100,000,

SHARES (PAR VALUE) \$1.00 EACH.

Payable in instalments of 10 per cent at intervals of 60 days.

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SECRETARY-TREASURER, J. T. BETHUNE.

MANAGER, C. N. BLACK, C.E.

Offices: 30 BROAD STREET, VICTORIA, B.C.

Only \$10,000 of this Stock for Sale.—The company's property comprises 720 acres of placer ground and two-thirds interest of the same on Mouson Creek, Omineca District, and possesses a water grant of 4,600 inches. Ditch nearly completed last season. Will commence operations early in May next.

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THE MINING JOURNAL,

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Subscription for British Columbia, £1 8s. per annum.

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— REPRESENTING —

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Gives a fair and square assortment, and allows full value for all kinds of Raw Furs.

Shipments solicited.

Prompt returns assured.

Large Lots from Cariboo District, ship care of HARVEY BAILEY, Ashcroft.

Railway Items.

The rapid development of means of communication in the Kootenays is receiving a great impetus this year. No less than five wharves are now under construction at Nakusp, Roseberry, New Denver, Silverton and Slocan City in connection with the new rapid transit route via Nakusp Slocan Railway, Slocan Lake, Slocan River Railway, and Columbia and Kootenay Railway to Nelson. There will be a choice of routes from the coast to Nelson, Trail and Rossland—one by the Columbia River and Arrow Lakes and the other by the mixed rail and steamer on Slocan Lake. The distance from Nakusp to Nelson over the new route is about ninety miles, and as it is proposed to make the trip in daylight the varied scenery and numerous attractions on this route cannot fail to make it popular. The Slocan River Railway will be in running order in September next, the work being very actively prosecuted. The surveys of that portion of the Crow's Nest Pass Railway from Goat River to Balfour along Kootenay Lake is nearly completed. Mr. C. E. Perry, who has had charge of the Surveys is superintendent of construction.

A Promising Enterprise.

THE National Mining and Development Company has been organized in Toronto, and has purchased the following properties:

Victoria, North Star, Mary Ann, Scott, Gold Drop, Charlotte L., Margarette S. and Irma. These claims are located in Fairview, Trail Creek, Rock Creek, North Fork of the Salmon, and Boundary Country. From the reports and assays made there is every reason to think that they will prove to be valuable properties. Some of the most influential men in Toronto are interested in this enterprise, and we understand it is their intention to fully prove the value of the claims by development work and then place them on the English market. Mr. C. A. Godson, of Victoria, is the prime mover in the matter; he having secured the claims from the original owners and placed them at a low figure in the hands of the National Mining & Development Company. We expect to hear good reports from the operations of this company in the near future, which will no doubt be one of the most successful mining organizations on the coast.

Held Over.

Interesting articles from Rossland, Greenwood City and New Denver, also an account of the New Victor Mining Co. are unavoidably held over till next issue, having reached us too late for publication.

F. ADRIAN MEYER BROKER

Sub-Collector of Customs. . . .

Deputy Collector of Inland Revenue.

Notary Public

VERNON, B.C.

A. W. TAYLOR,
Stock : and : Mining : Broker.

MINING SHARES AND MINES BOUGHT AND SOLD.

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No "Wild-Cats" Handled.

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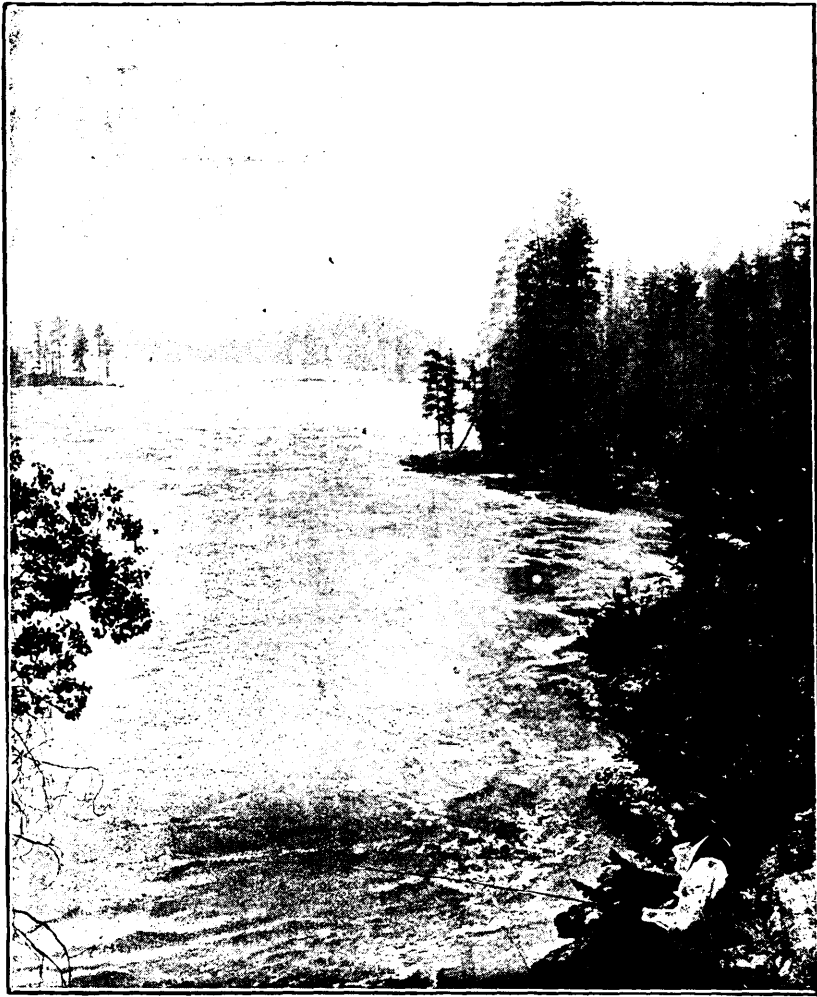
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and all other reliable Stocks bought and sold
on commission

Hastings Street.

VANCOUVER, B.C.

Mining Stocks.Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C.
on 23rd March, 1897.

| Companies. | No. of Shares. | Par Value. | Price. |
|-------------------------------|----------------|------------|--------|
| TRAIL CREEK. | | | |
| Alberta | 1,000,000 | \$ 1 00 | \$0 15 |
| B.C. Gold King | 1,000,000 | 1 00 | 0 10 |
| Beaver | 750,000 | 1 00 | 0 10 |
| Big Three | 3,500,000 | 1 00 | 0 15 |
| Bluebird | 600,000 | 1 00 | 0 10 |
| Bruce | 1,000,000 | 1 00 | 0 10 |
| Butte | 1,000,000 | 1 00 | 0 05 |
| Caledonia Con. | 500,000 | 1 00 | 0 06 |
| California | 2,500,000 | 1 00 | 0 15 |
| Camp Bird | 1,000,000 | 1 00 | 0 05 |
| C. & C. | 500,000 | 1 00 | |
| Celtic Queen | 750,000 | 1 00 | 0 04½ |
| Centre Star | 500,000 | 1 00 | |
| Colonna | 1,000,000 | 1 00 | 0 26 |
| Commander | 500,000 | 1 00 | 0 23 |
| Crown Point | 1,000,000 | 1 00 | 0 0 |
| Deer Park | 1,000,000 | 1 00 | 0 20 |
| Della Colla | 1,000,000 | 1 00 | 0 04½ |
| Delaware | 1,000,000 | 1 00 | 0 12 |
| Eastern Star | 500,000 | 1 00 | 0 20 |
| Enterprise | 1,000,000 | 1 00 | 0 20 |
| Eric | 1,000,000 | 1 00 | 0 05 |
| Evening Star | 1,000,000 | 1 00 | 0 13 |
| Georgia | 1,000,000 | 1 00 | 0 15 |
| Gertrude | 500,000 | 1 00 | 0 10 |
| Golden Drip | 500,000 | 1 00 | 0 15 |
| Golden Queen | 1,000,000 | 1 00 | |
| Great Western | 1,000,000 | 1 00 | 0 17 |
| Hattie Brown | 1,000,000 | 1 00 | 0 10 |
| Helen | 600,000 | 1 00 | 0 04 |
| High Ore | 500,000 | 1 00 | 0 06 |
| Homestake | 1,000,000 | 1 00 | 0 10 |
| Idaho | 500,000 | 1 00 | |
| Imperial | 1,000,000 | 1 00 | 0 05½ |
| Iron Horse | 1,000,000 | 1 00 | 0 20 |
| Iron Mask | 500,000 | 1 00 | 0 44 |
| I.X.T. | 1,000,000 | 1 00 | 0 13 |
| Josie | 700,000 | 1 00 | 0 50 |
| Jumbo | 500,000 | 1 00 | 0 62 |
| Knight Templar | 500,000 | 1 00 | 0 05 |
| Kootenay-London | 1,000,000 | 1 00 | 0 10 |
| Le Roi | 500,000 | 5 00 | 7 75 |
| Lilly May | 1,000,000 | 1 00 | 0 20 |
| Mabel | 1,000,000 | 1 00 | 0 15 |
| Mayflower | 1,000,000 | 1 00 | 0 14 |
| Monita | 750,000 | 1 00 | 0 25 |
| Monte Cristo | 1,000,000 | 1 00 | 0 15 |
| Morning Star | 1,000,000 | 1 00 | 0 04 |
| Nest Egg | 500,000 | 1 00 | 0 21 |
| Northern Belle | 1,000,000 | 1 00 | 0 15 |
| Novelty | 1,000,000 | 1 00 | 0 09 |
| O. K. | 1,000,000 | 1 00 | 0 30 |
| Palo Alto | 1,000,000 | 1 00 | 0 10 |
| Phoenix | 00,000 | 1 00 | 0 13 |
| Poorman | 500,000 | 1 00 | 0 06½ |
| R. E. Lee | 2,000,000 | 1 00 | 0 15 |
| Red Mountain View | 1,000,000 | 1 00 | 0 11 |
| Red Point | 1,000,000 | 1 00 | 0 10 |
| Rossland, Red Mountain | 1,000,000 | 1 00 | 0 22 |
| St. Elmo | 1,000,000 | 1 00 | 0 09 |
| St. Paul | 1,000,000 | 1 00 | 0 12½ |
| Silverine | 500,000 | 1 00 | 0 08 |
| Southern Cross & W. Con | 500,000 | 1 00 | 0 20 |
| Trail Mining Co | 2,500 | 100 00 | |
| Union | 600,000 | 1 00 | |
| Virginia | 500,000 | 1 00 | 0 12 |
| War Eagle Consolidated | 2,000,000 | 1 00 | 1 10 |
| West Le Roi | 500,000 | 1 00 | |
| White Bear | 2,000,000 | 1 00 | 0 19 |
| AINSWORTH, NELSON AND SLOCAN. | | | |
| Argo | 1,000,000 | 0 10 | 0 10 |
| Athabasca | 1,000,000 | 1 00 | 0 26 |
| Bondholder | 1,000,000 | 1 00 | 0 15 |
| Alamo | 500,000 | 1 00 | |
| Cumberland | 50,000 | 10 00 | |
| Dardanelles | 1,000,000 | 1 00 | 0 25 |
| Dellie | 750,000 | 1 00 | 0 15 |
| Eldon | 1,000,000 | 1 00 | 0 05 |
| Elise | 1,000,000 | 1 00 | 0 07 |
| Ellen | 1,000,000 | 1 00 | 0 07½ |
| Elkhorn | 1,000,000 | 1 00 | 0 10 |



VII
VIEW ON KOOTENAY RIVER, NEAR NELSON, B.C.



C.P.R. STATION, THREE FORKS, B.C.

| Companies. | No. of Shares. | Par Value. | Price. |
|------------------------------|----------------|------------|--------|
| Exchequer..... | 1,000,000 | 1 00 | 0 10 |
| Goodenough..... | 800,000 | 1 00 | 0 26 |
| Gibson..... | 650,000 | 1 00 | 0 12½ |
| Grey Eagle..... | 750,000 | 1 00 | — |
| Hall Mines..... | 300,000 | £1 | — |
| Idler..... | 1,000,000 | 1 00 | 0 12½ |
| Kootenay-Columbia..... | 400 | 100 00 | — |
| London..... | 600,000 | 25 | 0 25 |
| Minnesota..... | 1,000,000 | 1 00 | — |
| Northern Light..... | 250,000 | 1 00 | 0 15 |
| Noble Five Con..... | 1,200,000 | 1 00 | 0 60 |
| Ottawa and Ivanhoe..... | 1,000,000 | 1 00 | 0 12½ |
| Phoenix Consolidated..... | 1,000,000 | 1 00 | 0 15 ½ |
| Rambler Con..... | 1,000,000 | 1 00 | 0 54 |
| Reco..... | 1,000,000 | 1 00 | 1 35 |
| Slocan Star..... | 1,000,000 | 50 | 2 60 |
| Santa Marie..... | 1,000,000 | 1 00 | 0 05 |
| Sheriff..... | 1,000,000 | 1 00 | 0 24 |
| Silver Band..... | 1,000,000 | 0 25 | 0 25 |
| Slocan Queen..... | 1,000,000 | 1 00 | 0 10 |
| Star..... | 1,000,000 | 1 00 | 0 07 |
| St. Keverne..... | 1,000,000 | 1 00 | 0 05 |
| Sunshine..... | 50,000 | 10 00 | — |
| Two Friends..... | 800,000 | 30 | 0 34 |
| Washington..... | 1,000,000 | 1 00 | 0 25 |
| Wonderful..... | 1,000,000 | 1 00 | 0 11 |
| BOUNDARY. | | | |
| Old Ironsides..... | 1,000,000 | 1 00 | 0 06 |
| CAMP MCKINNEY. | | | |
| Cariboo..... | 800,000 | 1 00 | 0 50 |
| REVELSTOKE. | | | |
| Orphan Boy..... | 700,000 | 1 00 | 0 07 |
| TEXADA ISLAND. | | | |
| Texada Proprietary..... | 1,000,000 | .25 | 0 25 |
| Van Anda..... | 5,000,000 | 1 00 | 0 15 |
| Victoria-Texada..... | 600,000 | 0 25 | 0 25 |
| ALBERNI DISTRICT. | | | |
| Alberni Mountain Rose..... | 250,000 | 1 00 | 0 06 |
| Consolidated Alberni..... | 500,000 | 1 00 | 0 36 |
| Mineral Creek..... | 500,000 | 1 00 | 0 05½ |
| Mineral Hill..... | 750,000 | 1 00 | 0 10 |
| Quadra..... | 500,000 | 1 00 | 0 10 |
| CARIBOO. | | | |
| Cariboo Gold Fields Ltd..... | £100,000 | — | — |
| Cariboo Hydraulic..... | 300,000 | — | — |
| Horsefly Hydraulic..... | 200,000 | — | — |
| Horsefly Gold Mining Co..... | 100,000 | 10 00 | 1 50 |
| Slough Creek..... | 500,000 | 1 00 | 0 50 |
| LILLOOET DISTRICT. | | | |
| Golden Cache..... | 500,000 | 1 00 | 1 75 |
| FAIRVIEW CAMP. | | | |
| Tin Horn..... | 800,000 | 0 25 | 0 25 |

† Dividends declared to date are as follows: Le Roi, \$325,000; War Eagle, \$187,000; Cariboo, \$140,000; Slocan Star, \$350,000; Reco, \$100,000; Rambler Cariboo, \$40,000; Rambler Consolidated, \$20,000. Alamo, Cumberland, Noble Five and Goodenough have also paid dividends. Since last month's return was made up the following dividends have been declared: Slocan Star, \$50,000; Rambler Cariboo, \$20,000; Le Roi, \$25,000.

The Northern Light.

THE prospectus of the Northern Light Gold Mining Company, Limited Liability, which we have before us, is free from any of the extravagant statements seen so often lately in the prospectuses of the mining companies organized in this province. The capital is moderate, \$250,000, and the evident intention of the company is to develop the property (the Northern Light mineral claim on Goat Mountain) in such a way as will give the shareholders the full benefit of any good that may come of it. The prospectus is not a lengthy document, and is clear and concise in the statements made. It seems like a straightforward proposition.

Fast Time to Kootenay.

WE call attention to the change in the time-table of the Northern Pacific Railway, by which passengers are enabled to go from Victoria to Rossland in 31 hours, Nelson 33 hours, and Kaslo in 36. This is brought about by shortening the time between Seattle and Spokane, and making close connection at the latter place with the Spokane Falls & Northern Railway. It is evident the railway and steamboat lines are alive to the importance of the Kootenay traffic during the coming season.

Advertising Contracts.

May be made at Yerex, Wheeler & Co., Vancouver, B.C. Street & Co., 30 Cornhill, London, England. E. O. Dake's Advertising Agency, San Francisco. Gray's Agency, Montreal.

Agents.

THE RECORD is on file at 253 Broadway, New York.

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| Gordon & Gotch, St. Bride Street..... | " " |
| Dake's Advertising Agency..... | San Francisco |
| Gray's Agency..... | Montreal |
| Yerex, Wheeler & Co., General Agents..... | Vancouver, B.C |
| Clarke & Stuart..... | " " |
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| Hotel Vancouver News Stand..... | " " |
| C. P. R. News Agent..... | " " |
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| J. F. Shaw..... | Wellington, " |
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| H. S. Wallace..... | " " |
| M. W. Simpson..... | " " |
| — Martin..... | Sandon, " |
| H. G. Parson..... | Golden, " |
| P. H. Kellegher..... | Nakusp, " |
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| Slocan News Co..... | Slocan City, " |
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| Wm. M. Shaw & Co..... | Spokane, Wash |
| Shaw, Borden & Co..... | " " |
| E.A. Thomas & Co..... | " " |
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| Lowman & Hanford..... | " " |
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| G. B. Salmund..... | Brantford, " |
| Windsor Hotel..... | Montreal, Que |
| K. T. Takahashi..... | " " |
| San Francisco News Co..... | San Francisco, Cal |

Mining Papers on File.

The following papers are kept on file at the offices of the B.O. MINING RECORD for the use of visitors who may wish to consult their columns:

| | |
|---|--------------------|
| Mining and Scientific Press..... | San Francisco, Cal |
| Mining and Electrical Review..... | " " |
| Pacific Electrician..... | " " |
| Mining and Metallurgical Journal..... | Los Angeles, Cal |
| Mining Herald..... | Seattle, Wash |
| Washington Mining Journal..... | " " |
| Miner and Electrician..... | Spokane, Wash |
| Mining..... | " " |
| Spokesman Review..... | " " |
| Western Mining World..... | Butte, Montana |
| Mine, Quarry and Metallurgical Journal..... | Chicago, Ill |
| American Adviser..... | " " |

| | |
|-------------------------------------|----------------------------|
| Engineering and Mining Journal..... | New York |
| Manufacturers' Record..... | Baltimore, Md |
| Mining Journal..... | London, Eng |
| Shareholder..... | " " |
| The Colonies and India..... | " " |
| Financial News..... | " " |
| Canadian Gazette..... | " " |
| Chamber of Commerce Journal..... | " " |
| Australian Mining Standard..... | Sydney, N.S.W |
| Standard and Diggers' News..... | Johannesburg, South Africa |
| Canadian Engineer..... | Toronto, Ont |
| " Electrical News..... | " " |
| Canada Miner..... | " " |
| Industrial Canada..... | " " |
| Canada Lumberman..... | " " |
| Monetary Times..... | " " |
| Toronto World..... | " " |
| Toronto Globe..... | " " |
| Mining Review..... | Ottawa |
| Money and Risks..... | " " |
| Mining News..... | Montreal |
| Edmonton Herald..... | Edmonton, N.W.T |
| Revelstoke Herald..... | Revelstoke, B.C |
| Rosslander..... | Rossland, B.C |
| Rossland Miner..... | " " |
| Evening Record..... | " " |
| Kootenaian..... | Kaslo, " |
| Miner..... | Nelson, " |
| The Tribune..... | " " |
| Trail Creek News..... | Trail, " |
| Trail Creek Miner..... | " " |
| Boundary Creek Times..... | Greenwood City, " |
| Slocan City News..... | Slocan City, " |
| Grand Forks Miner..... | Grand Forks, " |
| Ledge..... | New Denver, " |
| Golden Era..... | Golden, " |
| Vernon News..... | Vernon, " |
| Paystreak..... | Sandon, " |
| Advance..... | Midway, " |
| Prospector..... | Fort Steele, " |
| Inland Sentinel..... | Kamloops, " |
| B.C. Mining Journal..... | Ashcroft, " |

| | |
|-------------------------|-------------|
| Nanaimo Free Press..... | Nanaimo, " |
| The Province..... | Victoria, " |
| The Times..... | " " |

Catalogues of Mining Machinery and Supplies.

We will be pleased to forward to any subscriber or reader catalogues and printed matter from the following firms:

| | |
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| John Taylor & Co., San Francisco, Cal. | Mine and mill supplies, chemicals, etc. |
| Canadian Rand Drill Co., Montreal and Rossland. | Mining machinery. |
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| Colorado Iron Works, Denver, Col. | Milling and smelting plants, etc. |
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| John Boyd & Co., | Machinery and Supplies, Vancouver. |
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Motors adapted

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Lighting Plants for mines and buildings. Our S.K.C. system renders distant water powers available for all classes of mining work.

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DIRECT LINE to
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ONLY 22 hrs. from Victoria to Spokane
 30 " " " " Rossland
 33 " " " " Nelson
 36 " " " " Kaslo
 36 " " " " Grand Forks



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Pullman Sleeping Cars,
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SAVE both **TIME** and **MONEY** if you are going to the gold fields of Kootenay or Kettle River Districts by travelling via

The Northern Pacific Railway

THE FASTEST ALL-RAIL ROUTE.

Quick Time, and no delay in transit.

TRAVELLERS from the East or from the West will find this the Quickest and most Comfortable Route to the Gold and Silver Districts of British Columbia. . . .

TIME SCHEDULE—In effect November 29th, 1896—Trains leave Seattle for Spokane, St. Paul and East, Rossland, Nelson, Kootenay and Kettle River points, 6.00 p.m. This card subject to change without notice. Through tickets to Japan and China via the Northern Pacific Steamship Co—an American line. For full information, Time Cards, etc., call on, or address

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 Freight and Passenger Agent, **VICTORIA, B.C.**

A. D. CHARLTON,
 Asst.-Gen. Pass. Agt. 225 Morrison St. **PORTLAND, Ore.**

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Speed, 18 knots. Tonnage, 1147.

| | | | | | |
|---------------|-----|--------------|-----|----|------------|
| 8.30 a.m. Lv | Mt | Victoria | 110 | Ar | 3.30 a.m. |
| 11.30 a.m. Lv | 38 | Pt. Townsend | 72 | Lv | 12.30 a.m. |
| 2.30 p.m. Lv | 82 | Seattle | 28 | Lv | 9.30 p.m. |
| 4.15 p.m. Ar | 110 | Tacoma | Mt | Lv | 7.15 p.m. |

Steamer City of Kingston makes connection at Tacoma with Northern Pacific trains to and from points East and South.
 *Daily except Monday.

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The only all-rail route without change of cars between Spokane, Rossland and Nelson; also between Nelson and Rossland.

DAILY EXCEPT SUNDAY.

| | | | |
|------------|----------|-----------|-----------|
| Leave. | Spokane | Arrive. | 7:00 p.m. |
| 7:30 a.m. | Spokane | 7:00 p.m. | |
| 10:30 a.m. | Rossland | 3:25 p.m. | |
| 9:00 a.m. | Nelson | 5:20 p.m. | |

Close connections at Nelson with steamer for Kaslo and all Kootenay Lake points.

Passengers for Kettle River and Boundary Creek connect at Marcus with stage daily.

The Finest Train in the World!

The long-talked of Limited Trains on

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Minneapolis, St. Paul and Chicago,

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The press as well as the people who have inspected these trains admit that they represent the acme of the car builders' art. The engine is after the famous 999 pattern and from end to end the train is vestibuled with broad plate glass vestibules which completely enclose the platforms and add greatly to the beauty as well as to the comfort of the train.

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Excursion or other classes of tickets are good on this train and no extra fares are charged for the superior accommodations.

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Newly fitted and equipped with all modern conveniences.

SAMPLE ROOMS FOR TRAVELLERS.

Mrs. W. J. MEAKIN, Proprietress.

TRAIL British Columbia

The Kaslo

J. W. M. COCKLE, W. VIDLER PAPWORTH
RATES, \$2.50 per day.

FAMILY AND COMMERCIAL HOTEL.

Heated throughout with hot air.

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BEST ACCOMMODATION.
ST. LEON HOT SPRINGS, on Upper
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VICTORIA, B.C.

TRANSPORTATION COMPANIES.

Canadian Pacific Navigation Co., Ltd.

TIME TABLE NO. 28.
(Taking effect December 28th, 1896.)

VANCOUVER ROUTE.

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

NEW WESTMINSTER ROUTE.

LEAVE VICTORIA—For New Westminster, Ladner's Landing and Lulu Island Sunday at 23 o'clock; Wednesday and Friday at 7 o'clock. Sunday's steamer to New Westminster connects with C.P.R. Train No. 2 going east, Monday.
FOR PLUMPER PASS—Wednesdays and Fridays at 7 o'clock.
FOR MORESBY AND PENDER ISLANDS—Fridays at 7 o'clock.
LEAVE NEW WESTMINSTER—For Victoria Monday at 13:15 o'clock. Thursday and Saturday at 7 o'clock.
FOR PLUMPER PASS—Saturday at 7 o'clock.
FOR PENDER AND MORESBY ISLANDS—Thursday at 7 o'clock.

FRASER RIVER ROUTE.

Steamer leaves NEW WESTMINSTER for CHILLIWACK and way landings every Tuesday, Thursday and Saturday at 7 o'clock during river navigation.

NORTHERN ROUTE.

Steamships of this Company leave Victoria for Fort Simpson via Vancouver and intermediate ports on the First and Fifteenth of each month. If sufficient inducements offer, will call at points on the West Coast and Queen Charlotte Islands.

BARCLAY SOUND ROUTE.

Steamer "Tees" leaves Victoria for Alberni and Sound ports the 10th, 20th and 30th of each month.
The Company reserve the right of changing this Time Table at any time without notification.

G. A. CARLETON, General Agent. JOHN IRVING, Manager.

Union Steamship Co., Ltd., B.C.

Head Office and Wharf, VANCOUVER, B.C.

NORTHERN SETTLEMENTS—SS. Comox sails from Company's wharf every Tuesday at 9 a.m. for Bowen Island, Howe Sound, Sechelt, Jervis Inlet, Froeck, Texada Island, Lund, Hernando Island, Cortez Island, Read Island, Valdez Island, Shoal Bay, Phillips Arm, Frederick Arm, Thurlow Island, Loughborough Inlet, Salmon River, Port Neville; and sails every Friday at 11 a.m. for way ports and Shoal Bay, calling at Bute Inlet every six weeks.

MOODYVILLE & NORTH VANCOUVER FERRY.

LEAVES MOODYVILLE—8, 9.15, 10.45, 12 noon, 2, 4, and 5.45 p.m.
LEAVES VANCOUVER—8.35, 10, 11.20, 1.15 p.m., 3.15, 5.15, and 6.20. Calling at North Vancouver each way, excepting the noon trip.
Freight steamers SS. Capilano, and SS. Coquitlam; capacity, 300 tons d.w.
Tugs and scows always available for towing and freighting business. Large storage accommodation on Company's wharf.

H. DARLING, Manager.

Telephone 94. P.O. Box 771

Kaslo & Slocan Railway.

TIME CARD NO. 1.

To take effect Wednesday, Nov. 20, 1896. Trains run on Pacific standard time.

| Going west. | Daily. | Going east. |
|-------------------|------------|-------------------|
| Leave 8.00 a.m. | Kaslo | Arrive 3.50 p.m. |
| " 8.36 " | South Fork | " 3.15 " |
| " 9.36 " | Sprule's | " 2.15 " |
| " 9.51 " | Whitewater | " 2.00 " |
| " 10.05 " | Bear Lake | " 1.48 " |
| " 10.18 " | McGuigan | " 1.33 " |
| " 10.30 " | Bailey's | " 1.21 " |
| " 10.39 " | Junction | " 1.12 " |
| Arrive 10.50 " | Sandon | Leave 1.00 " |
| SANDON AND CODY. | | |
| Leave 11.00 a.m. | Sandon | Arrive 11.45 a.m. |
| Arrive 11.20 a.m. | Cody | Leave 11.25 a.m. |

For rates and information, apply at Company's offices.
ROBT. IRVING, Traffic Manager. R. W. BRYAN, Superintendent.

The Columbia & Kootenay Steam Navigation Co, Ltd.

TIME TABLE NO. 10.
In effect June 8th, 1896.

ARROWHEAD-TRAIL ROUTE, STEAMER "NAKUSP."

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. Daily except Sun.
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.

KOOTENAY LAKE ROUTE, STEAMER "KOKANEE."

Daily except Sun. 4.00 p.m. De NELSON Ar 9.30 a.m. Daily except Sun
8 p.m. Ar KASLO De 5.30 a.m.
Saturday, June 6th and every second Saturday following, steamer leaves Kaslo at 10 p.m. for Bonner's Ferry; returning leaves Bonner's Ferry Sun. at noon. Connections at Nelson with C. & K. R. to and from Robson, Trail, Rossland, Nakusp, Revelstoke and C.P.R. points; at Nelson with N. & F.S.R. to and from Spokane and way points; at Kaslo with K. & S. R. to and from Slocan points; at Bonner's Ferry with G.N.R.

The right is reserved to change this schedule at any time without notice. For tickets, rates, etc., apply at Company's office, Nelson.

T. ALLAN, SECRETARY. J. W. TROUP, MANAGER, Nelson, B.C.

INTERNATIONAL

Navigation & Trading Co., LIMITED

STEAMERS INTERNATIONAL AND ALBERTA on Kootenay Lake and River.

TIME CARD IN EFFECT FEBRUARY 1st, 1897.
Daily except Sunday—Subject to change without notice.

Leave Kaslo for—
Nelson, Ainsworth, Pilot Bay, Balfour, Way Points... 5.30 a.m.
Leave Nelson for—
Kaslo, Ainsworth, Pilot Bay, Balfour, Way Points... 4.40 p.m.
Close connection at Five-Mile Point with all passenger trains of the N. & F.S.R.R. to and from Northport, Rossland and Spokane.
Leav Kaslo..... 5.30 a.m. Leav Spokane..... 7.00 a.m.
Arriv Northport.. 12.30 p.m. " Rossland..... 10.30 a.m.
" Rossland.. 3.25 p.m. " Northport..... 1.27 p.m.
" Spokane... 7.00 p.m. Arriv Kaslo..... 8.00 p.m.

Through Tickets sold at lowest rates, and Baggage checked to all United States points.

GEORGE ALEXANDER, General Manager. Head Office, KASLO, B.C.
Kaslo, B.C., January 30, 1897.

Columbia & Western Railway Co.

Schedule No. 4, February 4th, 1897.

EASTBOUND.
No. 4 Passenger, daily except Sunday; leaves Rossland 4 p.m., arrives Trail 5 p.m.
No. 2 Passenger, daily except Sundays; leaves Rossland 7 a.m., arrives Trail 8 a.m.
WESTBOUND.
No. 3 Passenger, daily except Sunday; leaves Trail 8.00 a.m., arrives Rossland 10.00 a.m.
No. 1 Passenger, daily except Sunday; leaves Trail 5.45 p.m., arrives Rossland 7.40 p.m.
Connections made with all boats arriving and departing from Trail.
GENERAL OFFICES: F. P. GUTELIUS, General Superintendent.
TRAIL, B.C.

IMPORTANT NOTICE—Prospecting.

PROSPECTOR open for engagement to a Syndicate or Company desirous of securing mineral claims in British Columbia the coming season. Is well up in the geology and general conditions prevailing in the various mining districts. The past season located a number of valuable properties for his employers.

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