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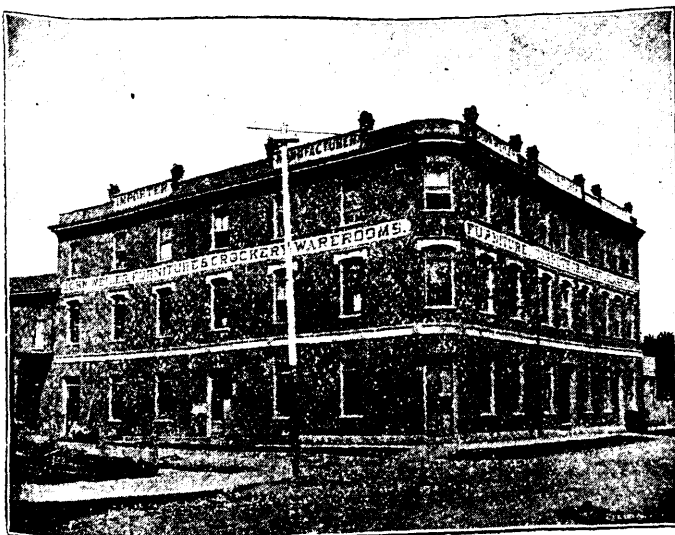
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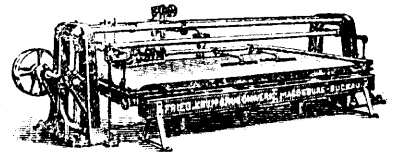
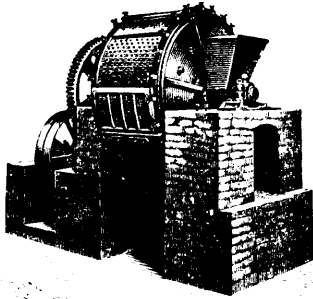
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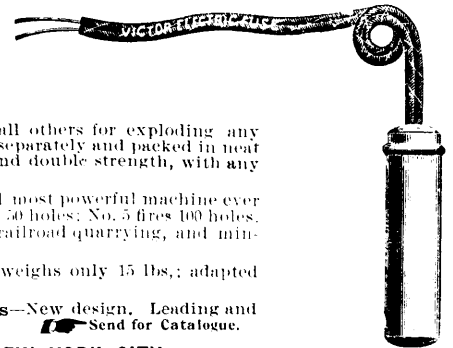
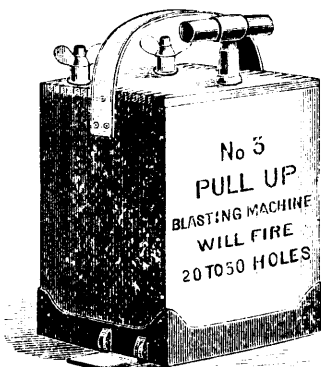
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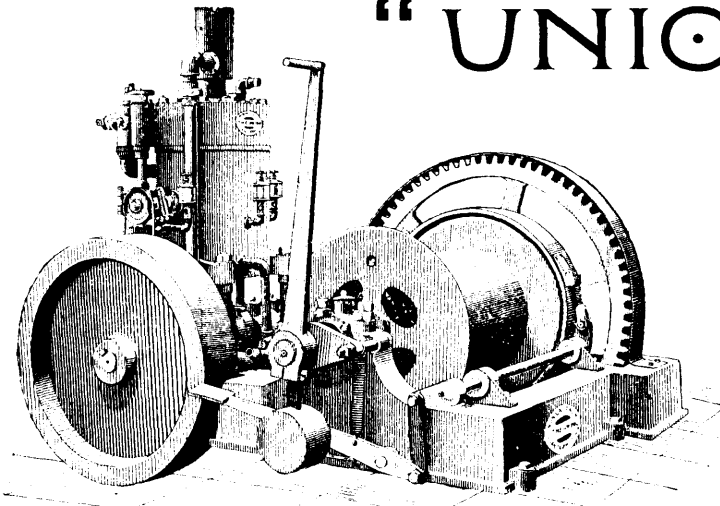
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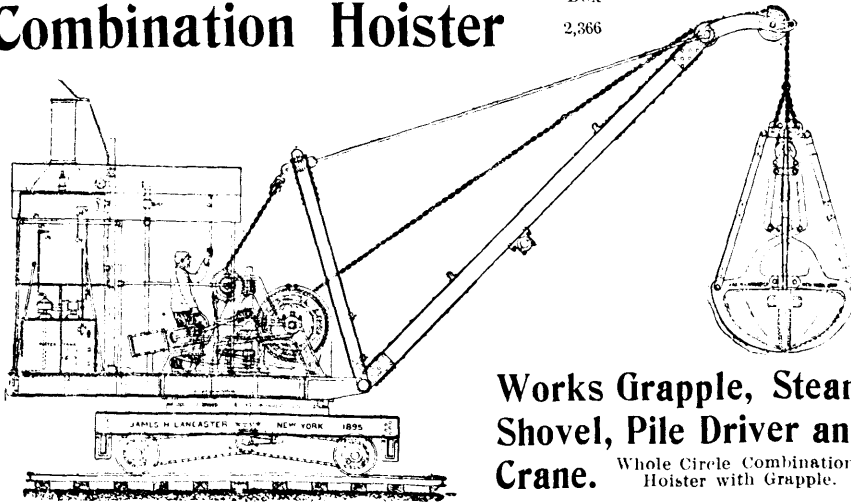
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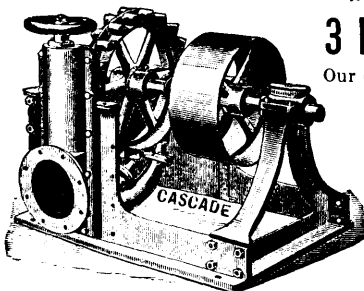
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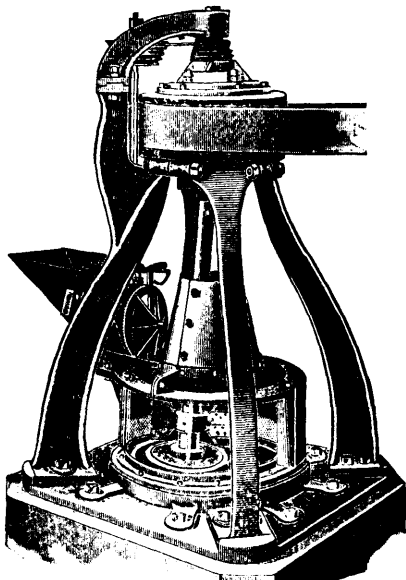
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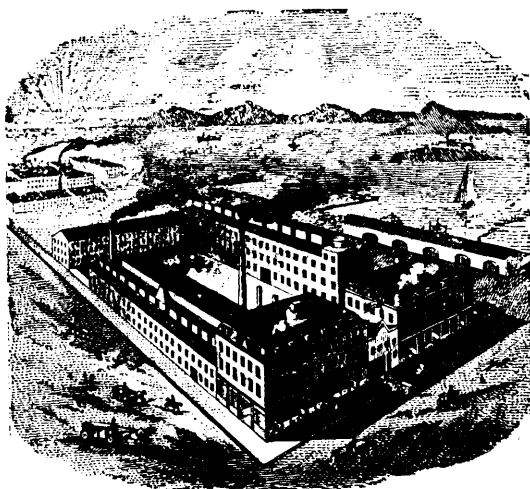
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# The Mining Record.

Vol. III.

JANUARY, 1897.

No. 1.

## BRITISH COLUMBIA MINING RECORD.

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ALEXANDER BEGG, Editor.

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### EDITORIAL NOTES.

WITH this number the BRITISH COLUMBIA MINING RECORD commences its third volume, and it is the intention of the publishers during the coming year to add fresh features of interest to mining men, so as to increase the usefulness of the journal.

The object of the MINING RECORD is to place before its readers at home and abroad reliable information about the progress of the mining industry in every section of the province, and by taking a conservative and truthful view of affairs to inspire confidence amongst investors and others in the vast mineral resources of British Columbia.

We do not profess to be infallible, and mistakes may sometimes creep into our columns; but we can assure our readers that the greatest care will be taken in the future, as in the past, to state only what we believe to be the truth. Should we at any time discover that we have erred or been misled, we will not hesitate a moment in making the necessary correction, so that

our readers may know that the MINING RECORD will not, either negligently or wilfully, mislead them.

People are so often inclined to place exaggerated estimates on the value of mining properties or discoveries that it is sometimes difficult to sift the good from the bad in communications sent in for publication. But our endeavour is to employ only reliable correspondents, and by this means we are able to reduce to a minimum the danger arising from inflated opinions concerning a mining district.

The past year has shown that "boom" methods are not required to bring the mineral resources of the province to the front. The richness of the mineral deposits in almost every section of British Columbia is becoming more evident each day. Experienced men who have carefully examined the country pronounce but one opinion—that it is ahead of anything so far discovered in any part of the world. We have yet to hear of an adverse opinion on that point and the only wonder is that the mineral wealth so bountifully bestowed has remained hidden for so many years.

In Great Britain and Europe, the United States and Eastern Canada there is an increasing interest being taken in our mines and it is not too much to expect that a vast amount of capital will find its way into the province during 1897. The incorporation of mining companies representing a large amount of capital (on paper), formed mostly for speculative purposes, will reach its level in due course and instead we will find investors placing their money where they can have some certainty of receiving returns from its investment. Sooner or later companies will have to show that they have something of known value behind them before people will invest in their shares. That public opinion will demand this before long may be taken for granted.

Gradually as development proceeds the *bona fide* companies having good properties are coming and will continue to come to the front and as surely will the purely speculative concerns sink out of existence. The year 1897 will be one of weeding out the good from the bad. Some innocent investors may suffer, but, on the whole, the effect will be good, and by the close of the present year we may expect to see the time when there will be little risk in placing money in a British Columbia mining company.

We have over and over again called upon the Government to compel mining companies to publish statements of their affairs at regular periods. It is absolutely necessary for the protection of the investing public that this should be done and the MINING RECORD will not stay its hand until it is accomplished. It should be made one of the conditions attending the granting of letters of incorporation and in this way investors would have something to guide them. More than this the law should be made retroactive so as to apply to all mining incorporations already in existence.

*Bona fide* companies with nothing to hide are not likely to object to the ordeal and if it should result in the collapse of a number of the purely speculative paper concerns it would be the clearing away of much useless lumber which at the present time is choking our mining industry. Once more we call upon our legislators to take this matter in hand.

The acquiring of the Columbia & Kootenay Steam Navigation line by the Canadian Pacific Railway Company is a step in the right direction. That the Columbia River for years to come will need an efficient line of steamers to supply the wants of the many rising settlements along its banks is without doubt, and the fact of a large and wealthy corporation having a hand in the steamboat service is likely to keep its efficiency up to the mark.

Moreover it is a sign of the wakening up of the railway company to the importance of the Kootenay trade and an indication that we may expect to see more energetic steps on their part to secure it.

The right of passage through the mountains by way of the Crow's Nest Pass is likely from all appearances to become a contested point. More than one party of capitalists is looking in that direction and more than one charter will be applied for to build a railway through the pass.

This is all very well and shows that the importance of the road is recognized and valued. But there is one point we would like to call attention to and that is the urgent need of early construction. Kootenay cannot wait while capitalists or corporations are squabbling over the right of way. It is the duty of the Government to decide who is to build the railway. If two separate companies are able and willing to build parallel lines through the pass so much the better for us, but what we want now is that one or more should commence to build without delay.

There are objections in many quarters to the railway being built and operated by the Canadian Pacific company, the idea being that it would shut out any chance of competition in rates and that it would be placing too much power in the hands of one corporation to control two passes through the mountains.

There is reason in these objections, but we would like to point out that the question of rates is one which rests entirely with the Government to decide. It is one which will have to be decided sooner or later not only for British Columbia but for the whole Dominion.

Capitalists who put their money in railways expect to receive some return for their investment, and the managers of the lines endeavour according to their judgment to use the best means toward this end. The difficulty seems to be that in the matter of rates there is not sufficient uniformity, and that some localities are made to suffer for the benefit of others. The question of rates is one upon which the railways and the people will never agree, and it will require a third party—the Government—to step in and say what is just for both sides.

We already have the assurance of the Minister of Railways that no matter who builds the Crow's Nest Pass road the question of rates is one which will remain under the control of the Government. This being the case what matter is it who builds the Crow's Nest Pass railway so long as the work is done quickly and well.

There is no sense in continually abusing the Canadian Pacific Railway Company and its management. If they do wrong let them be checked by the strong arm of the Government, which, as the representative of the people, is all-powerful. Abuse does not bring about a remedy. As a rule it generally has a contrary effect.

Kootenay wants the railway, and wants it badly. Capitalists are evidently scrambling for the right to build it. Now let the Government act firmly in the best interests of the people, and decide at the next session of Parliament who shall build the road. Then let construction commence immediately.

At the same time we trust there will be no delay in providing for the building of a direct line between the Pacific Coast cities and Kootenay.

Rossland has taken its second step towards being a great railway centre. The Red Mountain road has trains running regularly into the town. Other railway companies are preparing to effect an entrance, and before the close of the year we may expect to see construction in active operation.

But the tendency so far is to divert the trade of Southern Kootenay to the United States. Are British Columbians, and the Canadian people generally, really awake to this fact, or will they continue to slumber while their strength is passing from them? We look upon 1897 as the pivot year to decide this question, and the approaching session of Parliament at Ottawa will be an important one for this province.

There is a very general feeling amongst practical men that Vancouver Island is on the eve of great mineral discoveries. Already prospectors are at work with encouraging success, and it is a well-known fact that eminent geologists have proclaimed the island to be one of the richest parts of British Columbia in minerals. All that is required to demonstrate the truth of this is to have the country thoroughly prospected.

If we mistake not here is a field of illimitable possibilities for the prospector and before the close of 1897 we expect to hear of such discoveries on the island as will make it one of the wonders of the world as a great mining camp. Waken up, ye people of Victoria and Vancouver Island!

Each month shows clearly that the whole coast and islands are rich in minerals. What an opportunity is here presented to possess mines close to ocean navigation! What a chance for profitable investment! He is a wise man who gets in early.

Now let us enumerate:—There is Trail Creek and the Slocan districts already world famous; Boundary Creek now known to be fabulously rich, only awaiting transportation facilities to pour out its wealth of precious metals; East Kootenay, with its immense ore bodies lying idle awaiting the advent of the railway; Golden Cariboo from which millions have been taken and from which many millions are yet to come; the coast and islands as rich as the interior of the province; and lastly Vancouver Island, which an eminent authority once pronounced to be the richest part of British Columbia. These and other districts, which we have not named, are known to be overflowing with gold and silver; who can doubt the mining possibilities of this province, or the opening presented for profitable investment of capital?

From Rossland comes a complaint that preference is given in that town to the employment of American miners over Canadians. If this be true and the nationality of the workman allowed to interfere with his obtaining work, it is an outrage which should not be countenanced or allowed. The fitness of the man for the work required to be done should be the only test. In Canada we take broader views of such matters than they do in the United States. There a Canadian workman is regarded as an alien and refused employment. Here in the Dominion an American is not barred from getting work because of his nationality. But if the complaint coming from Rossland be true, that American mine owners will only employ American miners to the exclusion of Canadians, it is time to consider whether Canada should not put an alien law in force to protect her own people. We like Americans, we like to have them living amongst us and enjoying the advantages

of our country, but they must learn the principles of fair play if they wish our friendship to continue. We trust the complaint that has reached us is unfounded.

It is evident from recent occurrences that important amendments to the Act providing for the incorporation of towns are needed. At the approaching session of the Legislature the whole question should be thoroughly considered so that no doubt may rest upon the standing of any of our incorporated towns. That there should be the least suspicion of a doubt upon such an important matter as the incorporation of a municipality is altogether wrong, and the greatest care should be taken to rectify any errors or remove any uncertainty as to the meaning of the Act.

In view of the fact that several of our mining towns will be seeking incorporation in the near future this is a very important matter for the Provincial Government to consider.

There are a number of questions affecting the mining districts which should receive the earnest attention of the Legislature at its next session, but as we understand the local House is not likely to meet until February we will deal with these matters in our next issue.

In one respect, however, the action of the Legislature need not be waited for. We refer to better police supervision in some of the mining districts. Complaints of the absence of proper protection are coming in from several points, and we would suggest to the Provincial Government an immediate consideration of the provisions at present existing or altogether lacking in several localities for the prevention or detection and punishment of crime. The appointment of a few Justices of the Peace and constables pending a more complete police organization for the mining districts would undoubtedly have a good effect.

Once more we call attention to the advisability of forming a British Columbia Mining Association to have branches in every mining town or camp in the province. The good such an organization would be able to accomplish in many ways is incalculable. It would be able through its numerous branches to collect a great deal of valuable information about the mineral resources of the province and it would be in a position through its executive to make such recommendations to the provincial authorities as would enable them to act in the best interests of the mining industry. An annual convention of delegates from every part of the province might be held at some convenient place and the report of such a meeting if published and widely circulated would do much to make known the mineral resources of British Columbia.

The membership fee of such an association could be made small, not more than one dollar per annum, so

that everyone connected with or interested in mining could join. Foreseeing the great amount of good a British Columbia Mining Association can accomplish the editor of the *MINING RECORD* has resolved to take the initiative and will be glad to receive the names of parties who are willing to join in its organization. A report of the success attending the effort will appear in the February number of the *RECORD* and from then on each month until the association is fully formed. Send in your names.

The construction of the railway from Trail to Robson will give Rossland quick communication with the North. The time between Revelstoke and the chief city of the Trail Creek district will be one day's travel, instead of two or sometimes three as at present.

This will be a great improvement, and it is pleasing to note from a perusal of the *Railway and Steamboat news*, to be found in another column, that the Canadian Pacific Railway Company are not only alive to the necessity of extending their railway lines in several directions, but they propose to enter into the steamboat business quite extensively with the view of furnishing transportation facilities to important mining districts now being opened up. Thus the good work of opening up the country proceeds.

The means of communication between Golden and Fort Steele are very poor, especially during the winter months. The residents of both places have petitioned the Postmaster-General for a weekly instead of a fortnightly mail service, and this will probably be granted, as to refuse it would be an injustice to a very important section of British Columbia. A movement is also on foot to connect Golden and Fort Steele by cable, in order to give both telephone and telegraphic communication between the two places. What is needed is a railway to tap that wondrously rich district.

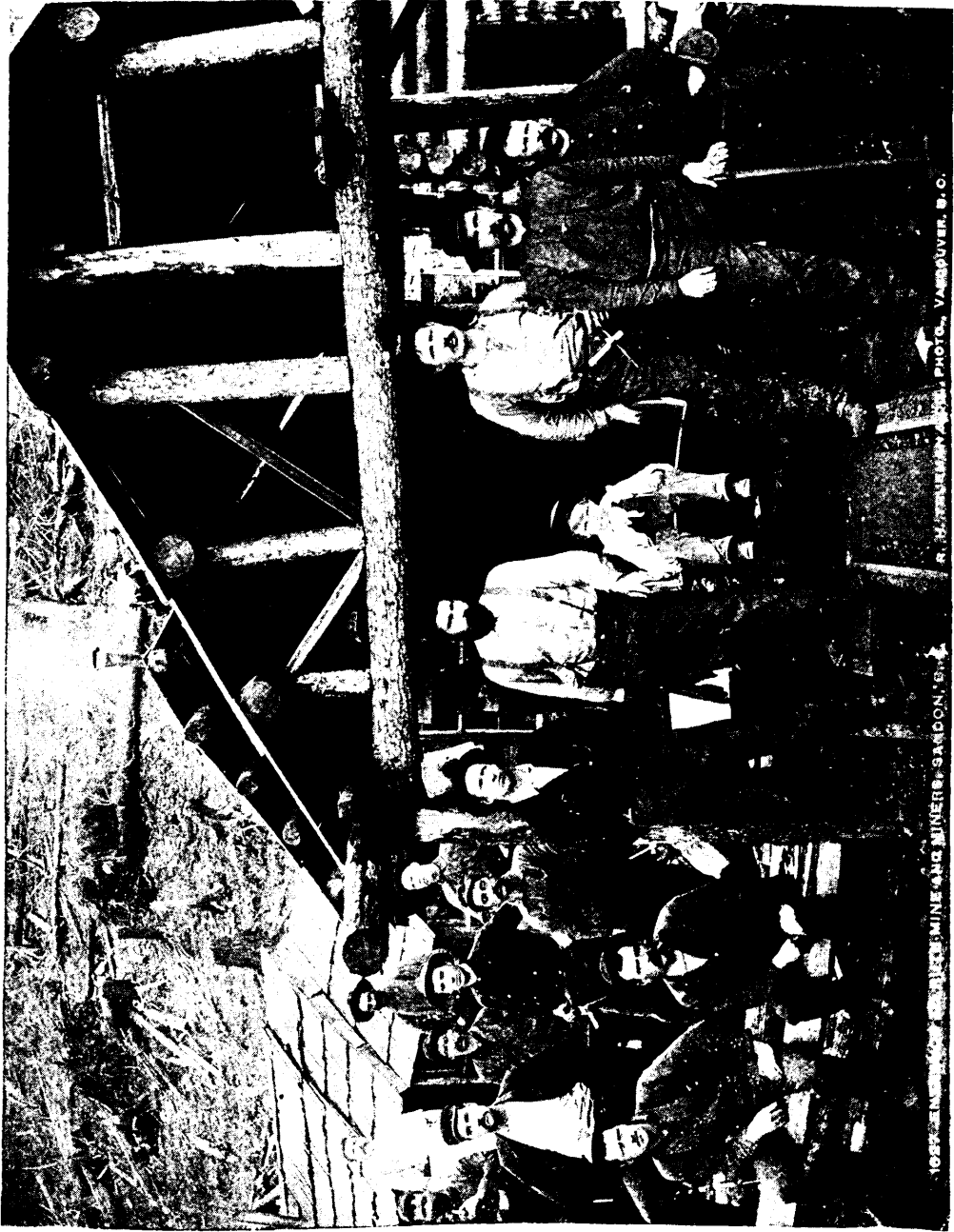
Kaslo is about to have a water supply; Nelson is about to have electric lighting. The former should have better lighting and the latter should have incorporation.

The report on the Slocan District, being prepared by Mr. Carlyle, the Provincial Mineralogist, will be issued about the 10th inst., too late we fear for any extracts from it to appear in this number. We understand the coming report on the Slocan will be the most complete and comprehensive of any yet issued, and we are glad to learn that during the coming year Mr. Carlyle will continue to issue reports on the various mining districts at regular intervals. These reports will do more to place the mining industry of this province on a proper footing in the eyes of the world than anything else. They may be counted on as reliable in every respect, and parties interested in the mines of British Columbia should not fail to send for copies.

Mr. Carlyle is also about to publish valuable statistics of returns from the various mines which will be looked forward to with interest. We are in hope that before this issue of the *RECORD* is through the press we will receive copies of these statistics for publication.

#### *Notes From Rossland, B.C.*

**W**INTER set in here abruptly, bringing to an end the labors of the prospectors and of those early birds who were bent on searching out and marking down the good things in the new camps. The year 1896 by the way has been prolific in new camps in this neighbourhood, and doubtless in many others in the West Kootenay. Not to speak of the many claims on Murphy Creek and Sullivan Creek, some of which had begun to attract attention in the previous year, we have the Waterloo camp with a large number of new locations, a very fair amount of development work, and a certain amount of "nibbling" on the part of the capitalist, as evidenced by the "bonding" of several properties. Some miles north of the Waterloo camp the country in the neighbourhood of Rover Creek, a tributary of the Kootenay River, has attracted some attention; good surface assays have been obtained, and a certain amount of work is being or has been done. But as the above district is in the jurisdiction of the Nelson Recording Office it should perhaps hardly be included among the new camps of this district. We shall be on safer ground if we drop down the river from the Waterloo camp and take note of the many promising claims on the hills that lie between Champion Creek above and Bear Creek below the town of Trail, and all the way down the Columbia River as far as Waneta and the International Boundary. If we were fortunate enough to have visited this country before the snow came we might have extended our observations so as to take in the Salmon River, the North Fork, Wild Horse Creek, etc. In that district, if report is true, we should have met many enthusiastic gentlemen, seen many extraordinary surface croppings, and heard tell of many remarkably high assays. Furthermore, we should have been assured with the utmost confidence by the above-mentioned enthusiastic residents that the surface showings in and around Rossland were as a mere pin-point compared with the magnificent indications of their own special neighbourhood. Precise and accurate calculations always inspire conviction, so we could hardly have failed to be impressed when we heard that in five years' time the new camp of our enthusiastic friends would have fifty shipping mines to one at Rossland, and would be numbering its output in as many tons as Rossland could show pounds. Such figures and prophecies stimulate the imagination and the vital energies, but what are we to think of them when we go into the Boundary country and hear the same identical tale, and when echoes of the same story float up from Alberni on the West, and from Rainy River, the Lake of the Woods, Sudbury, etc., in the East? The brain reels at the mere thought of such tremendous possibilities, and sober-minded men shrink from such a riotous debauchery of figures. Some few months ago the editor of a certain well-known Eastern newspaper sat down quietly on his return from a visit to Rossland to calculate the probable, or at all events possible output of the Trail Creek mines ten years from now. The problem is, of course, a delightfully simple one. Take the Le Roi mine and its daily output; imagine all the



TOP PHOTO: MINE WORKERS, SANDON, B.C. BOTTOM PHOTO: VAGGOUER, B.C.

ENTRANCE TO RUTH MINE NEAR SANDON, B.C.



rest of the mines, claims and prospects within a radius of four miles of Rossland to eventually contribute an output equal to a given number of Le Roi mines; supply the figures to suit your ideas of moderation and caution, and you will arrive at your total with the greatest ease. At least our friend the editor found it so easy to run up a big score that he was frightened at his own liberality, and was afraid to put his figures into print until he had reduced them to one-half of their original total. This was bad enough when he was dealing with Rossland alone, but where would he have been had he begun to make calculations as to the total output of all Rossland's numerous rivals, each one of them infinitely superior to that unfortunate and too well known locality?

In the meantime, through good report and evil report, the inhabitants of Rossland have been going steadily ahead. We have had to encounter a great deal of criticism, some of it reasonable enough, some prejudiced and unfair; and on the other hand we have hardly had justice done to the immense amount of honest, persevering hard work which has been put in throughout this district this year. We are constantly hearing of the many instances in which treasury stock has been sold for development purposes and yet no development work has been done. Why is it that in the first place we are never given precise details of these evil doings, and in the second place, that so little credit is given to us for the comparative economy, perseverance and success with which mining work has been carried on here for the last year or two? It is often said, and we have never heard it contradicted, that on the property of the Cariboo Hydraulic Company in the Cariboo district from \$500,000 to \$750,000 have been spent up to the present time. Add together the total expenditure up to date on fifty of the principal claims on Red Mountain and Monte Christo Mountain and we very much doubt whether the figures would greatly exceed the money spent on this one claim or group of claims in the Cariboo district, allowance of course being made for the fact that in the case of the Rossland claims we have to the credit of the account the sums paid in dividends by the Le Roi and War Eagle, amounting in all to \$447,000. It has been said that imitation is the sincerest flattery, but probably "detraction" would be the better word. The above comparison is not prompted in the least by a desire to say anything spiteful of what is generally reported to be a most valuable property, but is intended to emphasize what was said above as to the success and economy of operations in Rossland up to date.

But after all, interesting as it undoubtedly is to congratulate ourselves upon what has been done in the past, it is with the future of the camp that we are all most concerned. In attempting to make a forecast as to this future it must be admitted at once that we cannot go on indefinitely buoying ourselves up on the merits of the Le Roi and War Eagle mines—our two dividend payers. It may be confidently hoped that these two properties will be as heavy or even heavier producers in the future than they have been in the past, but we must all earnestly hope that they will be reinforced next year by two or three more dividend payers and by five or six more heavy shippers. After looking through the list of claims that are in the running as dividend payers, we may enumerate the Josie, the Columbia-Kootenay, the O.K., Jumbo, Crown Point, Centre Star, Commander and Cliff, and not improbably the Mayflower, which we undetstand is

looking extremely well. Out of this number it is quite on the cards that two or three may be able to declare a dividend. The list of probable shipping mines will of course be a very much longer one, comprising in addition to the above the Iron Mask, Nickel Plate, Deer Park, Lily May, Evening Star, Colonna, St. Elmo, and several others. In calculations of this kind, however, it must be remembered that the questions of transportation and of smelting play an important part. The situation as far as transportation is concerned has been much improved recently by the practical completion of the Red Mountain Railroad connecting us *via* Northport with the Spokane Falls & Northern Railway, and thereby with the Northern Pacific and Great Northern systems. As for smelting, we have in the first place the smelter at Trail, connected with us by the Columbia & Western narrow gauge railroad. The proximity of this plant to the camp makes it of course most convenient and serviceable, but even at the present time the railway is probably unable to handle anything like the total output of our mines, apart altogether from the capacity of the smelter. Small quantities of ore have been sent from one or two of the Rossland claims to the Nelson smelter, which is understood to be working most satisfactorily, and very much larger quantities have been transported at great expense to Tacoma and other points in the States. It is evident however that in spite of what has been done this year the ore production of the camp threatens to outstrip and altogether distance the present arrangements for smelting and transportation, at all events as far as they exist within the borders of British Columbia. Within the last few weeks we are glad to notice that there has been a good deal of talk about the probable building of a smelter at Northport with an output of 300 to 400 tons a day. It is said that the cost of necessary plant would be somewhere about \$250,000; that another \$100,000 at least would be required as a working capital; and that last, but not least, for the successful working of a smelter a very heavy line of credit from the banks is an absolute necessity. From this it will be obvious that a scheme of this kind requires to be very carefully and fully worked out beforehand if it is to be a commercial success. Of the desirability of the project under the circumstances in which we are placed there cannot be two opinions. It has been stated, for instance, in the most positive manner by one of the best known mining managers in the camp that by the erection of a smelter at Northport his own particular mine would benefit to the extent of \$6 per ton. The conclusion of the matter, therefore, is that the coming year will see for certain a very largely increased output of ore from this district, and that unless immediate and progressive efforts are made to dispose of the increased production by the erection of new smelters, we shall not be so very much better off in this respect at the end of 1897 than we were at the beginning of 1896. Those who wish to do justice to the mining industry in this part of the country would do well to bear constantly in mind that the mine manager here who has succeeded in finding and developing a large body of pay ore on his claim is not at the end of his work by any means, but only half through with it. He has constantly to be thinking: "Shall I leave shipping alone for the present and wait till the Northport smelter is built, thereby saving my company many thousands of dollars in the long run, or shall I, regardless of expense, ship all the ore I can lay hands upon to the nearest available smelter?"

Another point to be remembered is that at present in the discussion as to shipping ore, smelters, etc., the very large bodies of low grade ore known to exist in the camp are entirely disregarded, all calculations being entirely confined to bodies of ore running from \$20 to \$25 and upwards. As far as we are aware no figures on the subject have been made public, but would it be too much to hazard as a guess that for every ton of ore known to exist in the camp having a value of \$20 and over, there are three tons of a value less than \$20? A scheme is now on foot for the treatment of this so-called low grade ore by a well-known process which has and is being worked elsewhere with great success, and which, it is most devoutly to be hoped will prove equally successful here. We may probably anticipate that within the next few years smelting charges will be considerably reduced as the treatment of our ores becomes better understood, and as more competing smelters are built. But in the meantime we must all of us welcome with eagerness any process which promises to render available and profitable the large bodies of ore which at present are just below the margin of profitable treatment.

Within the last two or three months several large and important mining deals have been put through here. In the first place the Colonna Gold Mining Company, owning the Buckeye claim on Monte Cristo Mountain, has been bought out by a syndicate comprising some of the best known men in Montreal. From all accounts these gentlemen have a very valuable property, and are not likely to repent of their bargain. This purchase was followed up by the acquisition of the whole of the unsold portion of the Rossland townsite by the same or nearly the same syndicate, who, with a characteristic determination not to allow grass to grow beneath their feet, have begun to talk of running an electric street railway down the principal streets of the town, and have a scheme on foot for the introduction of electricity at a high voltage into Rossland, generated by water-power at the Pend d'Oreille River, twenty miles distant.

Much attention has been directed lately to the Josie mine, whose owners are understood to have refused an offer of nearly 90 cents per share, *i.e.* about \$600,000 for the property. The statement that an offer of 60 cents per share for the Deer Park has been made and refused is even more remarkable, and if correct is a very substantial tribute to the merits of the claim. Several very large deals are understood to be under negotiation now, but at the present stage it is not permissible to mention names.

Reference has been made once or twice in your columns to the Gold Star claim, five miles north of Rossland. This well-known prospect has been bought recently by a Toronto syndicate for \$15,000 cash, and work will be carried forward on the claim all this winter. The surface showing is very good, and after uncovering a ledge of nearly solid iron ore thirty feet wide, the owners have started to sink a shaft. We hear that recently some very good assays have been obtained. Another very well known claim in the north of the camp is the Union, which is reported to have been bought in England for \$30,000, but on what terms we do not know.

When commencing this letter we had intended to make some comments on a short article in your November number headed "An Outside Opinion," and expressing the ideas of Mr. James T. Kimball, a well-known New York geologist. The line of argument that we had wished to follow was not an attempt to

combat the truth of Mr. Kimball's criticisms, but to examine how far they were practical under past or present circumstances. Unfortunately this letter has reached such swollen proportions that we have no room left for the consideration of this subject.

## A RECORD OF THE PAST YEAR.

### Rossland.

#### A YEAR AGO AND TO-DAY.

ROSSLAND about a year ago had less than 400 of a population. To-day it is estimated to have over 6,000. Staked out as a pre-emption in 1892 it was surveyed as a townsite in 1894 and began to grow into importance as the centre of a rich mining camp in 1895. During 1897 it will become an incorporated city and the terminus of two important railways. In ten years from now we predict that it will have a population of over 100,000 and be not only a great mining and commercial point but the centre of half-a-dozen different lines of railway. Only the other day a syndicate of eastern Canadian capitalists bought several hundred lots in Rossland on speculation—what does that mean? It means that these moneyed men believe in the future of the place. Their confidence will be rewarded, for at the price paid by them it is safe to say they will more than triple their money within the next two years. Mr. Corbin, the president of the Red Mountain Railway, has large landed interests in the town and we understand it is his intention to place this property on the market for building purposes, leading the way himself by the erection of a number of first-class brick and stone buildings. Less than two years ago there were few who foresaw the great future ahead of this thriving town—to-day they are few who do not believe that it will be one of the largest cities in British Columbia. Surrounded by an immensity rich mineral district, tapped by two railroads and with several others surveyed into it to be built at an early day, who can entertain the shadow of a doubt about Rossland's future prosperity? A year ago it was but a hamlet of hastily erected wooden buildings—to-day it contains a large number of fine blocks, broad sidewalks, graded streets and is on the eve of a great building boom.

With twenty or thirty shipping mines in its immediate neighbourhood, the rapid advancement of Rossland will be one of the wonders of 1897.

### Trail.

#### A TOWN OF ONE YEAR'S GROWTH.

A year ago the site where Trail stands to-day was virgin forest—only three small buildings were erected on the spot at that time. To-day the town contains over six hundred buildings and is estimated to have a population of between 1,500 and 2,000. It is the connecting port for the steamers on the Columbia River and the terminus of the Columbia & Western Railway. Overlooking the town stands one of the great British Columbia smelters working night and day on the ores of Trail Creek district. From a mere hamlet to a town of several hundred houses, a number of fine hotels, mills and factories, graded streets and miles of sidewalk, electric light and other improvements is a pretty good step for a place to take in one year's time. The mountains surrounding Trail are

known to be rich in mineral and development work is being actively prosecuted. It is safe to say that within the next year or two Trail will not only be a great shipping and commercial point but its position and other advantages assure its being the great manufacturing centre of Southern Kootenay.

### Nelson.

#### THE CENTRAL CITY OF WEST KOOTENAY.

Nelson is probably the oldest town in Kootenay as it is certainly the most central. It was surveyed as a townsite in 1888 and for a time building operations were carried on extensively. Meantime two lines of railway tapped the town and the rich mining districts near it of which it was the supply mart caused it to grow in size and importance. The Hall smelter was built and other industries established and the central position of the town attracted attention to it. During the past year building operations have been very active and there are not a few who believe that Nelson will prove itself to be the chief city of Kootenay in the near future. It will be a terminal point of the great Crow's Nest Pass Railway and as such cannot fail to be the great distributing point for the whole of Kootenay. It will also become a great smelting centre and the works now established although already of large capacity are but the forerunner of probably the most extensive plants in the province. Already a number of wholesale houses are established in Nelson and in this line of trade the town is certain to become the most important in the interior of the province. In the matter of population it will be a race between Nelson and Rossland which will become the largest.

### Kaslo

#### THE DOORWAY OF THE SLOCAN.

Kaslo is the only incorporated town in Kootenay, and the management of its civic affairs is a credit to its people. Its finances are in excellent shape and in improvements to the town it has shown both enterprise and activity. It is the eastern doorway and shipping port of the great Slocan district. The terminus of one line of railway, it cannot be ignored in the railway construction of the future. Through Kaslo must pass tons upon tons of rich ore. In it must be erected in the near future great smelting works to treat the ores of the Slocan "near home;" situated on the waters' edge it will always be an important shipping and industrial point. Its position assures its standing as the metropolis of the silver district of West Kootenay. Its growth during the past year has been vigorous yet steady, and having passed through the evil effects of a "boom" its progress is now on a substantial basis. The people of the town, having the utmost confidence in its future show their faith in all matters affecting its prosperity by giving a strong pull—a pull all together.

### Sandon.

#### THE GREAT SILVER CENTRE.

Sandon, being situated in the centre of the great Slocan silver mining district, is and will remain, the chief headquarters of the camp. As its trade with the mines grows, so will its size and population. Although not a year old it has already between 1,200 and 1,500 inhabitants, and is one of the most active towns in the Kootenay. It may be termed even now a railway cen-

tre as it is the terminus of two roads, the Kaslo and Slocan and Nakusp and Slocan railways. Less than a year ago it contained only one or two roughly constructed houses, while now it has a number of fine buildings, large stores, railway stations, and is fast taking on the appearance of an established town. Its progress during 1896 has been remarkable, but with the impetus which will be given to mining in the Slocan during 1897 it is not too much to expect that Sandon will be a place of several thousand inhabitants before the close of next year.

### Revelstoke.

#### THE NORTHERN DOOR OF WEST KOOTENAY.

Revelstoke, although an old town as compared to others in West Kootenay, has made great progress during the past year. Thousands of travellers have passed through it bound for the gold and silver mines to the south and this has brought trade and money into the place. Near the station, building operations have been active and that part of Revelstoke has grown like magic. The railway company has erected commodious and handsome dining rooms and restaurant at the station for the convenience of passengers passing through, and not many rods distant a fine hotel (much needed at that spot) has been erected. The hotel accommodation during the past year in Revelstoke has been strained to the utmost by the large amount of travel passing through and it is likely to be so still more during the coming year. The rich discoveries of gold in the Big Bend and other adjacent localities have made things lively during the past few months in Revelstoke, and in 1897 it bids fair to become the scene of great mining activity. Being the connecting point on the C.P.R. where passengers take the southern route *via* the Columbia to Kootenay it will always be an important place and one of the chief towns in British Columbia. It will also be a smelting and manufacturing point and the distributing centre for the large and important mining districts surrounding it. The decision of the C.P.R. to remove the railway workshops to Revelstoke will give an impetus to the town during the coming year which can hardly be over-estimated, and if the various town-site owners would consolidate their interests into one it would add greatly to the immediate prosperity of the place.

### Ashcroft.

#### THE GATEWAY TO GOLDEN CARIBOO.

Ashcroft, as the stepping-off place for what is termed "the upper country," has been for years an important place in British Columbia. Here the great freighting teams take on their loads for Cariboo, and from this point the B.C. Express Company send their stages for hundreds of miles into the interior. The trade of Ashcroft during the past year, especially in freighting, has been the largest in its history, and although the place itself has not grown in size in comparison with other mining towns, its importance as a distributing point has increased greatly.

That Ashcroft before long will become the terminal point of a railway to the great Cariboo country seems certain, and that the building of such a road cannot be long delayed is evidenced by the immense amount of freight transhipped each month from the Canadian Pacific Railway and hauled by horse and mule teams hundreds of miles at great expense. Some idea of the

amount of freighting done at this point may be gathered from the fact that one firm alone—Harvey, Bailey & Co.—have had on an average from seventy-five to one hundred teams constantly on the road during 1896. Each of these teams is made up of from six or twelve horses, and carry from 9,000 to 18,000 pounds of freight. Ashcroft will always be an important point, and when railway construction to the north of it commences it will without doubt become one of the largest and busiest towns in British Columbia.

### **Kamloops**

DISCOVERS ITS MINERAL WEALTH IN 1896.

Kamloops is an incorporated town and one of the healthiest and most beautiful in British Columbia. It has an excellent system of water works and electric light with other advantages brought about through the energy and good management of its Town Council. The Dominion and Provincial Governments have their offices here and it is one of the sectional points on the Canadian Pacific Railway. During the past year rich and important discoveries of minerals—the ore resembling that of the Trail Creek district—have been made and now Kamloops bids fair to become one of the busiest mining centres in British Columbia during 1897. Kamloops may well write down the year 1896 as the most important one in its history.

### **Fort Steele,**

THE GREAT MINING CENTRE OF EAST KOOTENAY.

Fort Steele during the past year has grown in size and importance owing to the increased knowledge which mining men have acquired of the immense mineral wealth surrounding it on all sides. The splendid display of samples of ore from the districts surrounding it which Fort Steele sent to the Fruit Fair at Spokane spoke volumes for the great resources tributary to it and showed clearly what is in store for the place when the railway reaches it. The building of the Crow's Nest Pass Railway means much for East Kootenay and when that takes place Fort Steele, the centre of the district, will rival all other mining towns in British Columbia in point of wealth and population. The year 1896 has shown the Crow's Nest Pass Railway to be an assured fact in the near future and Fort Steele in a short time has jumped into prominence as the coming city of East Kootenay.

### **Greenwood City and Midway.**

THE RIVAL TOWNS OF THE GREAT BOUNDARY CREEK DISTRICT.

Those who have been through the Boundary Creek district and examined its wealth of mineral resources predict that it will be the greatest camp in British Columbia. All it requires is transportation facilities to enable the mines to put forth their ore. During the past year initiatory steps were taken to provide railway accommodation for the district, and although construction has been delayed there is every reason to expect that the iron horse will be running through that part of the province before the close of 1897. When that takes place the towns of Greenwood City and Midway will go ahead with leaps and bounds. Which will attain the greater prominence of the two is difficult to say at this time. Both will flourish—

both will become large and important mining towns. During the past year each has progressed rapidly in sympathy with the important mining development going on around them. But when the mines become shippers, with proper transportation facilities, not only Greenwood City and Midway but other towns will grow through the rich and boundless wealth of Boundary Creek.

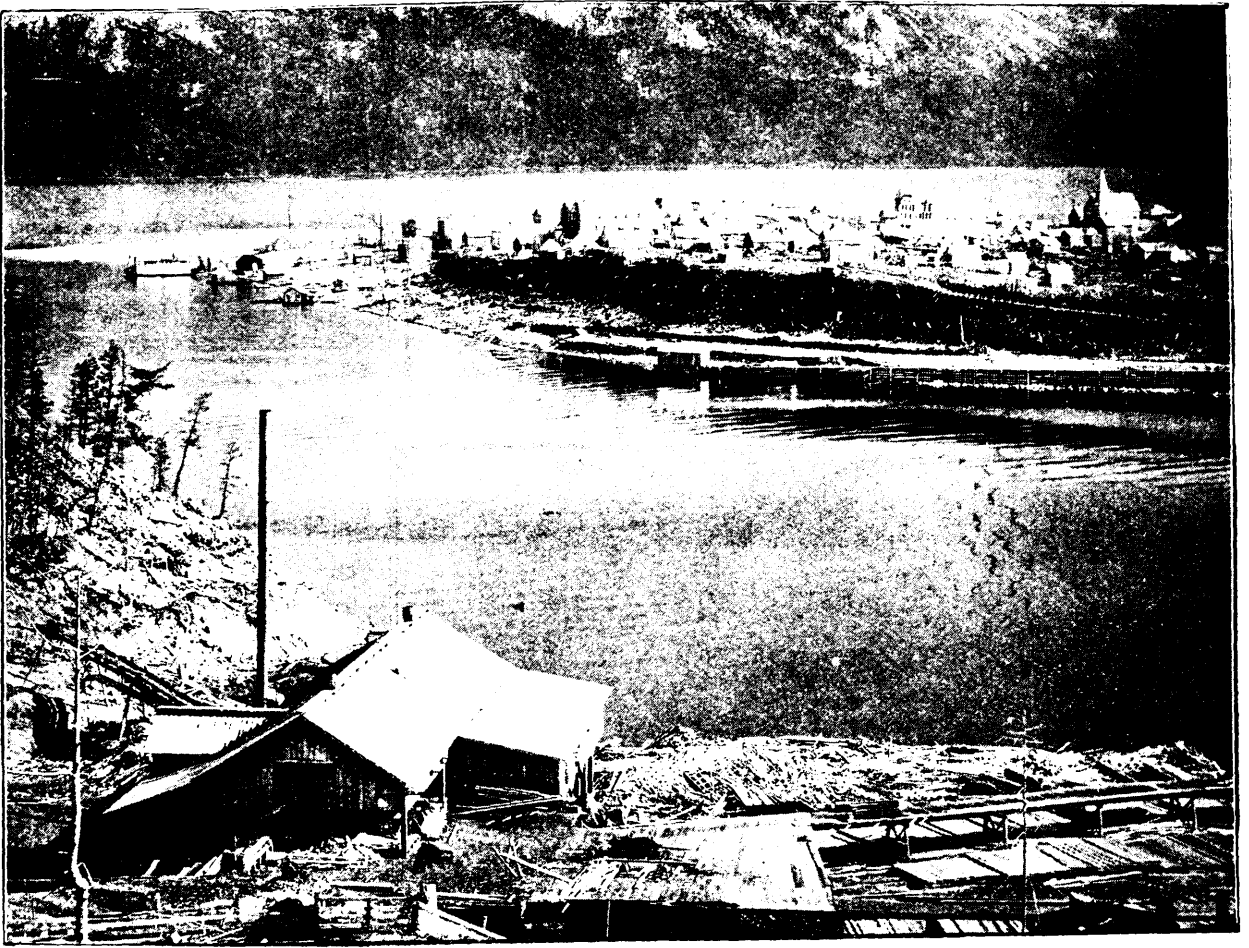
We have in this short sketch mentioned a few of the more prominent points in our mining districts, but there are others which might have been included in the category, such as New Denver, Slocan City, Ainsworth (risen from its ashes stronger than ever), Three Forks, Waterloo, etc., etc. All have progressed, all have steadily grown during the past year, and it is needless to say that on the eve of active development in mining throughout the province it is impossible to determine where the greatest activity will exist—where the most flourishing towns will grow. The year 1897 will be a time of general progress and activity, and places unthought of at this time will spring into existence. Others whose prospects may not seem as bright as their neighbours may forge ahead in the race. All we can say is to express the opinion that each and every mining town in British Columbia will, before the close of another year, show marked signs of improvement over their condition to-day.

### **Vernon Mining News.**

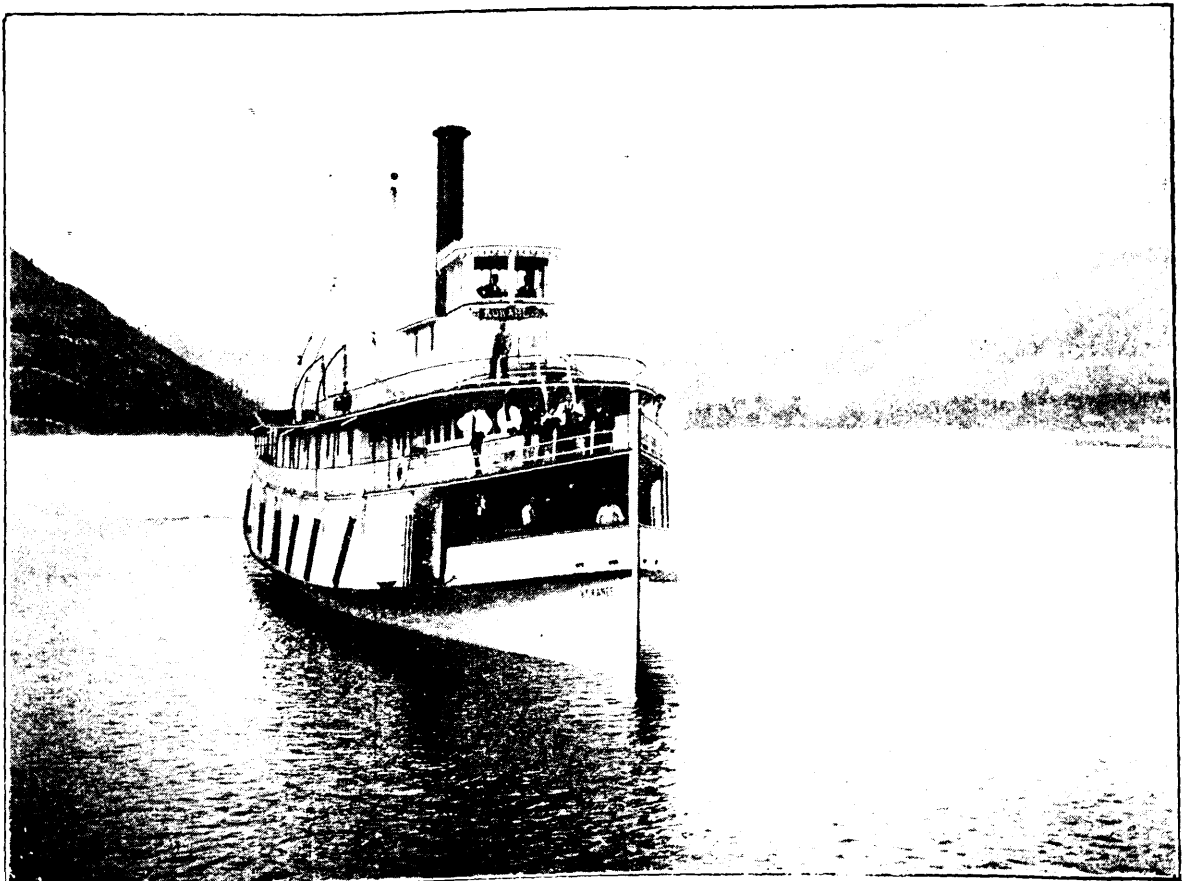
That the Okanagan Valley, of which the City of Vernon is the hub, is now taking a foremost place among the ore-producing districts of British Columbia there can be no question, but it was not always so. It has not been until the last two or three years that even the "swish" of the prospector's hammer could be faintly heard, and then it was only during the past summer that anything of any consequence was accomplished. As a farming district the Okanagan country was claimed to be *par excellence*, but with the advent of the prospector, the untold mineral wealth of this section of the country was more than made evident. Men of long experience in mining matters have "tramped" the hills; others equally well versed have personally examined the different mines and their ores, and to-day their anticipations are being fully verified by results, both in regard to quantity and quality of the ores taken out. That Vernon's possibilities are great there can be no doubt, as already capitalists are investing and money for development is coming into the different camps in the immediate vicinity from all quarters. Even the citizens themselves have every confidence in the different claims, as is evidenced by their large holdings of stock, and Vernon being a second Rossland is among the anticipations of not a few.

The general direction of the ledges is north-east and south-west; dips to the north-west. The formation runs north-west and south-east, and dips to the north-east. To the south of the city granite is the country rock; coming north, belts of schist and slate are encountered, with blow-outs of lime formation. One encouraging feature is that free gold, in size up to that of a small pea, has been found in the different locations, and in all cases the larger proportion of gold in assays has been free milling.

Probably the foremost mine in the district is the Morning Glory, situate on the west side of Okanagan



KASLO, B.C.



STEAMER KOKANEE, C. & K. S. N. CO.

Lake, about eight miles from Vernon. Work on this claim, which was staked last March, has been steadily pushed forward, and a shaft of eighty feet has been sunk. The walls are clearly cut and well defined, and the ledge is about eight feet wide, which increases in width as the work progresses. The rock is well mineralized, and a number of assays taken from the mine run from \$35 to \$81. Gold predominates, with considerable galena and a trace of copper. A testing smelter with a capacity of five tons in ten hours is now being placed in position at the mouth of the shaft, and as soon as it is in working order will begin treating the ore on the dump, which is estimated to amount to close on three hundred tons. Two other ledges, equally as rich in appearance as that in the main shaft, have also been uncovered on the same claim. The Morning Glory Mining Co., Ltd., the owners of the property, has a directorate of representative business men at its head, and with good management this property cannot fail to realize their highest expectations.

Another set of claims that looks equally as promising is the Camp Hewitt group, twelve of which have been consolidated into one grand company, to be known as the Camp Hewitt Mining & Milling Co., Ltd. The quartz is well mineralized, copper pyrites being the main feature. The rock also carries gold and a trace of silver, with assays running as high as \$80 per ton. It is estimated that \$6,000 worth of work has been done on these claims during the past twelve months. The most promising of the group is the Lake View, which is the best developed claim in the camp, and is situated close to the lake shore. On it a tunnel of forty-five feet has been run, besides several shafts on different parts of the claim. Mr. Susyman, a C.P.R. mining expert, during his visit to the Lake View the past summer, expressed his opinion that this claim was one of the most promising in the province. Work on two of the best claims in the group will be commenced immediately by the company.

The Bon Diable Mining Co., Ltd., recently organized as a stock company, has two claims on the B.X. ranch, about four miles north of the city. Large blow-outs of grey quartz, mineralized with iron pyrites and carrying free gold in considerable quantities are met with on all the claims of this group. Several shafts, one to the depth of thirty feet on the Bon Diable, have been sunk, disclosing on this claim a solid ledge about five feet wide. Work on this claim, which is thought to have the best lead, will be recommenced at once.

Some of the best looking quartz ever brought into the city is from the Silver Queen, the property of the Silver Star Mining Co., Ltd. This claim is situated on the summit of the mountain behind the B.X. ranch, and is about seventeen miles from the city. The ore is a heavy galena, mixed with iron pyrites, and carries silver and gold. A shaft some twelve feet deep has been sunk on the ledge, which appears to be solid and well in place, and a recent assay gave results of over \$80 per ton. Some twenty-five other claims have also been staked out in the immediate neighbourhood, but owing to the high altitude and the consequent depth of snow, little work has been done on them. It might not be out of the way to remark that up to the latter part of September the first claim had not been staked, so that with the advent of spring much activity in the way of development may be anticipated.

The Swan Lake group consists of some seven claims situate to the east of Swan Lake and owned by the

Swan Lake Mining and Development Co., Ltd. A large belt of gold-bearing quartz, assaying from \$4 to \$13 on the surface, cuts through the group northeasterly. These claims are a veritable "mountain" of rich quartz and are said to resemble the famous Treadwell mine in Alaska, both as regards formation and situation. This group is a free milling proposition.

Other equally well appearing claims, but which have not had very much development work done on them, may be mentioned: The Larkin group, situate close to Larkin station, which is similar in formation to the Swan Lake properties; the Lefroy group, on the west side of Swan Lake, particularly the claim owned by Shook, Milligan & Howard, and on which a tunnel of about twenty-five feet has been run; the Falcon, owned by W. T. Shatford, situate about two miles north-west of the city, which has a shaft of about twelve feet.

There can be no doubt but that next summer will see much activity in mining circles in this district, and with the first four companies above mentioned working large shifts of men a big impetus will be given to business generally.

W. J. POOLE.

### Interesting Notes From Kaslo.

BY G. O. BUCHANAN.

SO comprehensive, so voluminous have been the "write-ups" of Kootenay which have appeared during the last year in all sorts of publications from all sorts of writers that your present correspondent—one of the small colony of Kootenay Lake "old timers"—yields with misgiving to the kind invitation of the RECORD to furnish a *resumé* of events for 1896.

In the early '90's the settled residents at dates which had been announced for the last trip of the *Galena* or the last train over the C. & N. assembled at the depot or the landing and said good-bye to the miners as they departed for the season. Left to hold the fort through a long winter they beat the big drum and blew the big horn with incessant pow-wow lest they should be forgotten and abandoned by the outer world.

We clamoured and passed resolutions and petitioned and sent out deputations demanding trails and wharves and railways and gaols and postoffices. We fought for amendments to the Mineral Act and when they were made we insisted that the good Act we formerly had should be restored and that the Legislature should refrain from tinkering it. We were all newspaper correspondents and made full use of our privileges, loading the columns of many journals with roseate recitals of wonderful discoveries and optimistic forecasts of future achievements.

At an early date the adventurous printer arrived and newspapers as large as Japanese napkins carried leading articles as modest and unassuming and non-egotistical as the editorials of the *Arizona Kicker*.

Perseverance in advertising our wares was required for many months, but we were at length rewarded by reading in newspapers from the far East that "gold and silver had been discovered in the Kootenay mountains about 250 miles from Vancouver" and "there had been a stampede from that city to the diggings."

Definite information such as this, authoritatively published, speedily turned the scale of public interest in our favour.

It sometimes happens that when the incredulous

begin to believe they believe too much, and in this case those of us who live upon the ground and are conversant with the facts have had occasion to regard with amazement the extraordinary reports that have reached us from abroad as to the wealth of portions of our country, and with still greater amazement the avidity with which people from the "outside" have seemed to be launching out their money in exchange for interests in schemes purporting to be domiciled in Kootenay, B.C.

We are consistent in our attitude. We ask now, as we have always asked, that the public should enquire, examine and investigate in regard to what we have to offer.

And those of us who have fixed interests in the country regard the present era of reckless speculation, and unreasoning credulity, as calculated to injure us just as much as indifference and disbelief injured us in 1890.

On behalf of the old timers I desire to say that if strangers proposing to invest money in Kootenay would take the pains to communicate with any responsible business man or public official in the district they would get candid advice and in many cases valuable information.

For 1896 the record is one of steady and persistent progress. None of the important mining enterprises have been idle except that the Pilot Bay smelter and Blue Bell mine have been closed down during the last half of the year, a fact generally understood to indicate that a change of ownership is under negotiation.

At Nelson the Hall Mines Co. have greatly added to their facilities for handling and treating ore, and are now running full blast.

At Ainsworth a dozen mines are being worked, and continual improvement is reported.

At Woodberry Creek the C. P. Co. have made large expenditure upon water power, tramway, concentrator, etc., and an abundance of ore is reported in sight in their workings.

On the South Fork of Kaslo Creek the Messrs. Porter Bros. have developed the Black Fox into a promising mine.

At the head of the Fork Messrs. Nelson & Co. of Kaslo, made a strike of high grade galena during the month of August, and have been steadily at work since taking out valuable ore.

Nelson, Kaslo, Sandon, Cody and Slocan City have all been "boom towns" during 1896, and are in the aggregate nearly doubled in size by the year's work.

The saw-mills have been fully employed and a large amount of lumber has come in from Spokane and coast points.

Both the Kootenay Lake and Nelson saw-mills are adding to their capacity and making liberal preparations for a log supply for next year.

The Kootenay Lake fleet which seemed to be in former years of greater tonnage than the traffic warranted has been increased by two splendid boats, the *Kokanee* of the C. & K. S. N. Co. line, and the *International* of the International Trading Co's line. These boats are flyers, making travel on the lake a luxury and a recreation.

At the Summit, on the road from Kaslo to New Denver, the traveller sees a causeway projected by a snowslide across what would otherwise be a continuous sheet of water dividing it into two lakes, named respectively Bear and Fish. From Fish Lake the water runs to Kootenay Lake, forming the Kaslo Creek; from Bear Lake Seaton Creek runs to Three

Forks, and there becomes a part of Carpenter Creek, emptying into Slocan Lake at New Denver. These larger lakes terminate in rivers which unite, and thus create a peninsula, the isthmus of which is at the snowslide aforesaid. This peninsula is fifty miles in extreme length and about thirty in breadth. The towns of Balfour, Ainsworth, Cody, Sandon, Three Forks, Silverton and Slocan City are situated upon it. The towns aspiring to metropolitan rank—Nelson, Kaslo and New Denver—have been located upon contiguous portions of the mainland with a view to the necessities of future extension.

The apex of the mountain range is near the centre of this tract of land, and attains an elevation of 5,000 or 6,000 feet above Kootenay and Slocan Lakes.

The product of the heavy snowfall which accumulates is carried off by creeks, which radiate from near the centre in every direction to the surrounding rivers and lakes.

The trail of the prospector can be found following the course of every one of these creeks, and nearly every one now leads into a mining camp.

The number of claims located upon this tract of land which show some mineral and are possible future mines may be roughly estimated at 1,000. The number which have produced some ore and established some claim to be ranked as mines at about 100.

Off the peninsula proper but upon the slopes that look at it from across the narrow intervening water stretches are some mines and groups of mines among the best of the district.

The magnificent Silver King and Kootenay Bonanza of the Hall Mines Co., at Nelson; the Poorman gold mine west of Nelson; the immense Blue Bell on Kootenay Lake; the Whitewater, the Wellington and the London on Kaslo Creek stand in that position.

We claim for this tract of country so situated that it constitutes an empire of mineral wealth, of which enough is already known to warrant the estimate that it will produce during the next ten years one hundred millions of dollars with every probability that this will be multiplied by the results of further development.

Outside entirely of this territory yet more or less tributary to Kootenay Lake may be enumerated a long list of creeks and mountains upon which mineral discoveries have been made, some of them of the most flattering character.

The Lardeau and Duncan Rivers, which unite at about seven miles above the north end of Kootenay Lake drain with their branches an immense country profusely studded with mineral prospects. The ledges are big enough, the grade of ore high enough to make mining profitable but nature has provided no highway into this country except a rapid and badly obstructed river and the processes of nature have not as yet been supplemented by the efforts of man.

Prospectors have been to the summit of Foy Creek, on the north side of Kootenay Lake and report the indications of gold very marked.

On the face of the mountain opposite Kaslo a group of claims has been located during the last summer, and ledges of "Trail Creek" ore discovered.

On Crawford Creek and its tributaries large deposits of high grade ore are in process of development. Operations in the White Grouse Mountain camp have not, perhaps, resulted altogether satisfactorily so far to those concerned, but this is another instance where great difficulties of communication must be overcome

before work on the prospects can be advantageously performed.

The old Goat River camp is lying almost totally neglected, but not for any lack of enticing prospects. An influential American operator in the district once wrote to the president of a great railway that the Goat River camp was capable of supplying tonnage for his railway in excess of all that had ever been supplied by the Butte camp in Montana.

Along the International line from the Kootenay River both east and west, and on both sides of the line, fine prospects occur, one of which, the "Continental," lying near the line on the Idaho side, has been described as one of the biggest mineral showings on the face of the earth.

The Whitewater, seventeen miles from Kaslo, the property of Eaton, Retallack & Mann, has developed into a gem, and is thought to rank in importance close up to the Slocan Star.

Braden & Matthews are working Lucky Jim, near Bear Lake, having spent \$20,000, taken out 150 tons shipping ore, 75 oz. silver, and 70 per cent. lead. Also 1,200 tons which will concentrate about four into one, making a concentrate of the grade of the ore which has been shipped. They have also a few men working on the Ruby Silver, near the Surprise.

And at Ainsworth, ten men working on the Tariff four months, incline 100 ft. in ore all the way, 90 ft. drift in ore, about 15 inches solid ore body. They have made a waggonroad, from the mine to Ainsworth, about three-quarters of a mile.

#### *Relation of Farming and Hydraulic Mining.*

ON the lower Fraser there has been some agitation on the question of running silt in the river and the filling of the mouth with debris, but so far no line of action has been positively laid down by the farming community that live and thrive on the magnificent bottom lands of the lower Fraser, and there are many of them who are not inclined to the theory which has proved so disastrous to hydraulic mining in California, *i.e.*, that the hydraulic mines were directly responsible for the filling in of the river mouths.

It is true that hydraulic mining on the upper Fraser and Quesnelle is being prosecuted to some extent, and prospects are that movements are on foot to erect more plants and prosecute gold mining more assiduously than ever, but that the mines are directly responsible for damages to farms during high water is a stand the farmers, as a body, have not yet taken, nor is it probable that they will directly antagonize the industry that tends more than any other to make prosperity in the whole province.

As a matter of fact, the Thompson, the Fraser, the Quesnelle, and Chilcotin rivers and their smaller estuaries are the greatest silt carrying streams on earth. The whole region is overlaid with a fine silt, which in fact composes the soil of most of the inland ranches, which is so fine that the wind lifts and carries it in clouds of dust as it dries after a rain, or in the spring time, as the snow disappears.

It appears from surface indications that at one time there was a considerable lake in the interior, parts of which still exist in the vicinity of Kamloops, and also the Quesnelle lake. The big deep cañon at Yale shows evidences of having been cut away by the action of the water, and there is a series of cañons in the Fraser for nearly three hundred miles above that

point which carry the same marks of the action of the water as the stream lowered itself by cutting away the rocks, and silt, as it was gradually settling to its present channel. Thus were formed the great bottoms at the mouth of the river, and indications are that the salt water once reached nearly, if not quite, to Yale.

Natural causes are responsible for the formation of the great fertile bottoms, but the action of the elements is still continuing, and the running of silt will continue to the end of time, no matter if not a hydraulic mine is operated in Cariboo.

From Lytton north nearly to Quesnelle the river flows through a narrow gorge, the banks of which are hundreds of feet high, in some cases rising to almost 1,000 feet. The character of the benches is largely the fine silt mentioned, in which occurs layers of gravel. A slight change of the current is sufficient to undermine the bank anywhere and allow a veritable mountain to fall into the river, where it dams up the current till the stream rises to sufficient height to cut through the obstruction and continue its course to the ocean, carrying millions of tons of the silt in its progress.

At least three such incidents have happened in the river systems above Lytton, two in the Fraser and one in the Thompson, inside of the last thirty years and probably innumerable smaller ones which have received little or no attention. Either one of the slides mentioned have carried more silt into the Fraser River than all the hydraulic mines in the world working continuously night and day for thirty years could have done.

A hydraulic mine is not a silt deposit, but a gravel deposit, and there is very little sand, even in a mine. The gravel and boulders do not travel very far, but seek a resting place in the pools and deep channels of the rivers. It might be argued that navigation would eventually be impeded, but as it is impossible, and always has been, to navigate the Fraser, the argument would not avail. Along the Fraser clear up to and even above Quesnelle are many fine ranches, the soil of which is composed of the silt. A heavy rainfall, or the running off of the snow water in the spring, carries this silt into the rivers in probably ten times the quantities so carried by all the hydraulic mines.

There is no denying the fact that the farmers in the lower bottoms and on the deltas sustain great aggravations and losses by reason of high waters occasionally, but it would not be right, and not be good policy, under any circumstances, to allege the cause to be the mining operations of the Cariboo and upper country, when the causes which cause the aggravations really and truly lie hundreds of miles nearer home.

The MINING RECORD has not the remotest idea of antagonizing the farmers or any other worthy class of citizens of the province, and this article is only written to call attention to facts that might be overlooked in case bad advice should cause the farmers to declare war on the mining interest as was done in California a few years ago, the sequel of which was that the miners were almost entirely enjoined and the farmers have lost the best market the world ever saw. The physical conditions of the two regions, however, are radically different, and in the above case the mines were directly adjacent to the farms. In the case of the Fraser there is a long stretch of slow flowing river between the mines and the cañons, and from the head of the cañons to the farms it is more than 200 miles.

Incidentally we might mention that abreast and



opposite the ranch of C. T. Clark, at the 17-Mile post, on the Ashcroft-Lillooet Road, occurred about thirty years ago one of these slides, a large portion of which washed down the river; but there is a creek twenty feet wide at the top about 2,000 feet above the river bed, in the mountain, and when the huge mass is finally undermined and gives way, more debris will go into the river in the shape of pure silt, all of which will run with the current, than Hobson's "Cariboo" mine would discharge in twenty years. We would suggest that a committee be sent up the Fraser to thoroughly examine the banks and character of formations before there is any more agitation on the subject. S.

### *A Few Suggestions on Co-operative Mining.*

(Contributed.)

I HAVE written you several articles on the desirability of co-operation in the development of mining and am pleased to note that in Vancouver an association has been formed with this object in view. That is encouraging and I have no doubt that before long we shall have many of those associations formed among clerks, labourers and others who have only limited means and who individually are unable to acquire interests in claims.

The only objection I have to the objects of the association in question as stated is that it is proposed to develop mines for the purpose of "selling them." That is certainly better than floating the "everlasting" company, which is being formed and capitalized in a most ridiculous way, but it is not the best way. If a mine is a good property and worth a million or so in prospect why should the owners want to sell it? Why not hold on to it and operate it? If a foreign company can afford to pay anything from \$250,000 to \$1,500,000 with hopes of a big dividend then there is all that in it for the promoters.

If, on the other hand, the mine is not worth it or has no definite prospects—I mean if the owners have not faith in it, the honesty of endeavouring to unload it on a foreign company is not evident. The kind of finance by which worthless or doubtful properties are imposed on the investing public is the bane of the mining industry and gain gotten that way is little less than obtaining money under false pretenses, a refined and respectable species of fraud. Too much of it has been carried on in real estate, although it has been countenanced by some reputable firms and passed as clever financing. I say if men or companies have good paying prospects they should stick to them. There is only one supposition upon which they would be justified in a business way in disposing of them and that is in getting more for a mine than it is worth, and that is a supposition we should preclude in honest, legitimate dealing. If a company has a good property but not sufficient means to operate it let in capital on a fair basis and share the results. My contention is, first, last and always that if the mining industry is to benefit this province or benefit it in the greatest possible degree it should be controlled as far as possible by our own people and the profits be distributed at home. This cannot be done if the mines are controlled by foreign capital.

Reverting again to the question of excessive capitalization of mining companies I may say that while admitting it as a good thing to interest capital in the actual work of development the investment of foreign

capital in mining stocks such as are on the market to-day is money lost, that is, lost so far as *bona fide* mining is concerned. It goes into the pockets of a few people, it is true, but in the interests of the general economy that money might as well be made a gift to them so far as helping out mining is concerned. The aggregate of the nominal capital of all the mining companies incorporated or registered under the laws of the province is considerably over \$200,000,000—just realize it if you can! If it were all disposed of under the present system of "financing" mines, not more than five per cent. would be expended in mining. What good will "foreign capital" do to the country as a whole, to industry or to revenue invested in such a way? The thing is preposterous. The very length to which it is being carried in the initial stage of the industry will make the absurdity so apparent as to, I hope, soon explode it altogether.

I started out in this article with the idea of indicating a few of the needs of mining development in its early stages, or rather a few of the principles which should govern. First of all I should place the necessity of pursuing the industry on honest, legitimate business lines. As soon as these are departed from disaster sets in. Pursued as a speculation mining, like real estate, brings its train of ills. We have had our experience in the results of real estate booming. It has been a great curse everywhere it set in and has in British Columbia done in a comparatively few years what it will take years of patient plodding to undo. Pursued as a legitimate industry mining will result in making the province great and prosperous and will disseminate wealth among all classes.

Probably the second great need to place mining on a sound basis is a proper and comprehensive survey of the whole of the mining districts. This is a large undertaking but a necessary one in the interests of miners. What is necessary is a triangulation survey to establish the base lines. A claim should be surveyed when recorded or as soon after as possible. This would prevent the possibility of fraud or the confusion and litigation almost certain to follow the overlapping of claims. I would suggest that this work should be undertaken conjointly between the Dominion and Provincial Governments—one for geological cartography and the other to inaugurate a comprehensive and very necessary system. The Dominion Government does a lot of independent work in the province. As it is practically a new and wide field to cover there is no reason that it should not be common and serve both purposes, dividing and lessening the expenditure for each.

Then there is the necessity for a change of law with respect to the tenure of claims. The whole country side is being staked off and as far as possible Crown granted. That is, the prospectors and free miners do the necessary work and make the necessary payment in the majority of cases to get a Crown grant of about fifty acres. There is nothing afterwards to compel further development but the grant is perpetual and as real estate these mining claims are subject to no imposts under the law and hence may continue indefinitely without being worked or contributing to the revenue.

By this means a vast lot of land may become uselessly locked up. Much of this may contain mineral veins, but no one but the owner, who may either not have the knowledge or enterprise or means to exploit, can go on the land and develop it. As happens in very many cases, the claim owner, who is not always a permanent citizen, may leave the country alto-

gether and follow prospecting in another country. This is an evil which will surely develop later on, and now is an appropriate time for calling attention to it in order that some check may be placed on it, or that it may be provided against. A limit should be placed on the time during which a claim owner could have possession without development taking place, or in other words, his tenure should be made conditional. In Ontario, I believe, five or seven years are allowed before a claim becomes subject to taxation. That would probably provide the necessary safety clause, as a claim that was non-producing could not afford to pay taxes, and if sufficient time were allowed in which to permit development to begin, say five or seven years, before the real estate became subject to taxation, no hardship would be involved.

After securing sound conditions to govern development, a most important matter is the application of the principle referred to in my last article, namely, local assessment for improvement purposes. This would apply to branch railways, waggon-roads and trails to be constructed for the special benefit of a particular mining district or a set of claims, as is carried out in municipalities where the frontage tax or local assessment principle is in vogue for the construction of branch sewers, sidewalks etc., at least two-thirds of the cost would be assessed to the owner benefitted and one-third taken out of the general fund. The country should not be taxed for all these numerous development works required, which are of a local character and for the benefit of a limited number of claims or mines. Every district should stand on its own bottom in this respect; and if the necessary legislation were provided claim and mine owners would gladly avail themselves of the opportunity to provide themselves with the facilities wanted, at their own cost, and in a way best suited to their needs, doing away with the present unsatisfactory method of dispensing patronage, just as drainage is provided by local assessment in Ontario under the Drainage Act. Local railways and tramways could be built on a like principle. On the other hand, such mines and claims should be exempted from similar imposts for improvements in other parts of the province, and be taxed for nothing except the general purposes to which all have to contribute alike.

I had almost forgotten the great necessity which exists for a change in the law, setting beyond peradventure what stocks are, and are not, non-assessable. In fact, any legislation which will tend to discourage the incorporation of companies for speculative purposes would do good, but at least there should be absolute definiteness. All companies whether incorporated or registered here should come under the operation of one law. If, in addition, one-tenth of the nominal capital were obliged to be subscribed and paid up, and some general and healthy regulations imposed, it would greatly assist in the direction of *bona fide* finance, and render wild-cat schemes impracticable.

The adoption of the foregoing suggestions would, in my humble opinion, do much to establish the mining industry on a safe and permanent basis, and solve a good many problems that are vexing and will continue to vex those who have the administration of public affairs in hand.

EX LIBRIS.

#### *The Yukon Trade.*

IT is satisfactory to note that the Dominion Government see the necessity of securing the Yukon trade to the country, a few thousand dollars have been set

aside for the purpose of exploring a route *via* the Stickeen River and Lake Teslin, but whether a railway or waggon road or only a trail is contemplated is at present unknown.

It would be a good thing if the people of the province and especially those of the city would interest themselves more in this matter, especially as there is some encouragement from headquarters.

This would open up the northern part of the province to the prospector and the trader, and there is very little doubt that there is as much mineral wealth yet untouched in that quarter as in any other part of this Coast. The sources of the Yukon and its tributaries would be made accessible and quartz mining would receive an impetus as well as placer, besides the immense benefit the increased trade would be to the country if a good route was opened up through this province instead of the long and difficult routes at present used through Alaska.

#### *Gold on Vancouver Island.*

WHILE up to a few months ago the Kootenay mining district monopolized the attention of outside capitalists, it has gradually become better known that here on Vancouver Island there is mineral wealth that with the same amount of development will before long cause an inrush of investors. It was uphill work for several years for Kootenay to gain its just recognition, and it was not so long ago that the statement that Kootenay's output would reach five or ten millions a year, was actually laughed at. Now people no longer sneer, for the millions are mounting up by leaps and bounds with the impetus of judiciously invested capital. Just so will it be with Alberni. Prospects and mines have been opened out. development has resulted from the constant influx of prospectors, new mineral areas are being discovered, and Alberni is to-day just in the position that Kootenay was when it forced the attention of the world towards it. Take for example the Alberni Consolidated mine, on Mineral Hill. Money now has been spent in opening it up properly, with the result that the vein has been proved to be a large and a rich one, a three-stamp mill has been erected on Mineral creek, and a road two miles long has been built connecting the mine with the mill. A trial test of 400 pounds of the Consolidated ore put through a week ago, gave \$18 in free gold, besides the sulphurets, which bring the value of the ore up to \$100 a ton. Mineral Creek is connected with the town of Alberni on sea water by a fine waggon road, so that communication for shipping is excellent.

A couple of new hotels have been erected at Mineral Creek to accommodate the constantly increasing demand, for where there were only a few scattered prospectors a year ago there are now over two hundred men working on Mineral, China and Granite creeks and in the vicinity. At Alberni the little town has made a sudden start, for twenty-five new buildings were erected there during the year, and what is known as the "New Townsite" has been made a customs port of entry. The development of the quartz mines on Mineral Hill has been very marked, and a large number of claims have obtained Crown grants in the year just closed. The Quadra group on Mineral Hill has considerable development work going on. The Missing Link and Champion have the same rich vein as the Alberni and showing even wider on the surface. The Mountain Rose, belonging to Vancouver people, is having a hundred foot tunnel driven, and the Mineral

Hill Co., whose property lies north of the Missing Link and Champion will be shipping in the spring. The Adelaide and Jack Taylor, belonging to George Brown of Alberni, are showing up well as work opens up the vein, and the Minerva Casad and Happy Day, belonging to the Pacific Mining Co., are among some of the notable properties that are being worked on Mineral Hill. The Ace of Spades and Last Dollar, belonging to E. J. Saunders and associates, have obtained Crown grants, and the Minnesota group is having work done. All these and many more claims on Mineral Hill might be mentioned as showing what an extensive list of claims are really having work done upon them.

Just across Mineral Hill to the south of Mineral Creek is Douglas Mountain, where not many months ago the Regina group was staked out, that has proved with work to be extremely rich with a huge body of ore running in copper, silver, gold and lead; and there are other claims since discovered in the surrounding district that will before long make a long list of ore producers. What is needed now is capital, for there are many claims rich in themselves that cannot be developed because the owners have not the means to improve them. Money is needed to open up quartz claims, and without capital Rossland itself would never have risen to the enviable position it holds in the mining world to-day.

On China Creek, which joins Mineral Creek, is the Duke of York hydraulic claim, on which many thousands of dollars have been expended putting in a perfect hydraulic plant, with buildings, shops and all complete. The works are in full operation, and though the company had many drawbacks, owing to forest fires in the summer, everything is now in good shape again, and when the spring clean-up is made the returns will show that the enterprising men who put their money into the venture were wise in their generation. The Cataract claim is also on China Creek, and forest fires put its proprietors back far worse than the owners of the Duke of York, but it is expected operations will be resumed in the spring.

On Granite Creek, a few miles further down the Alberni Canal, are a number of splendid properties, including the Emma, Hannah and Starlight claims, the Islander and others, while some thirty miles or so below Alberni, a short distance from the mouth of the Sarita River, are the Sarita mines. Here there is an immense copper and iron deposit running in gold. Extensive development operations are in progress, and so highly satisfactory have they turned out that there is a very strong probability of a syndicate of capitalists erecting a smelter on the spot to treat the ore. Negotiations are understood to be in progress at present to this end.—*Colonist*.

#### *The Truth.*

**G**EORGE MITCHELL is reported to have said before the Tariff Commission that all mining machinery and tools used in mining should be placed on the free list. He contended that practically illimitable quantities of low grade mineral ores were not only unworked but unworkable under the present tariff. Nothing but an absolute reduction of the cost of production to the miners could develop the enormous mining areas of the country. The Kootenay ores, he said, contain a large proportion of lead which finds a ready market in the States. He said that by lifting the duties entirely from all articles entering into the operation of mines

or the erection and operation of smelters would not only result in all Kootenay ores being smelted in Kootenay but would also result in the ores of the Northwestern States being smelted in Kootenay as well. There is much truth in this and Mr. Mitchell might have added that the placing of mining machinery on the free list would give such an impetus to mining in British Columbia that trade would increase by leaps and bounds, and both manufacturers and merchants in Canada would be benefitted. Indeed, the manufacturers and merchants of Eastern Canada have as much interest as the mining men of British Columbia in seeing every obstruction to the development of our mining regions removed.

#### *Texada Island.*

**T**EXADA ISLAND has attracted much attention as a promising gold camp during the past summer, and a large number of prospectors have visited the district. The Van Anda, in which a number of Victorians and Chicago capitalists are interested, is turning out to be a great mine. The ore, which runs from 60 to 70 per cent. copper, is also exceedingly rich in gold, assays from some specimens going into the thousands of dollars per ton. On this mine hoisting machinery and buildings have been erected, and development work is progressing rapidly. Already a shaft 100 feet deep has been completed with a drift of 150 feet, while another of 100 feet is being sunk with crosscuts at each 50 feet to open up the vein thoroughly. About 100 tons of ore have been shipped, and it is intended to erect a 20-ton water-jacket smelter for matting purposes.

The Victoria is another wonderfully rich claim which is being developed. Specimens from this mine are literally studded with gold, and there is every reason to expect that as development proceeds, the Victoria will be known as one of the wonders of 1897.

The Lorindale is another claim which shows up well in free gold, and as prospecting on the island proceeds other rich finds will doubtless be made.

Altogether Texada Island bids fair to become a regular bonanza to those who are now giving it attention.

#### *Protection of Shareholders.*

**T**HERE is, we believe, no protection to shareholders against cooking of accounts or rendering of false statements. As matters stand they have to accept the report of the Board of Directors without any means of verifying its correctness. The directors themselves may be misled by the officers of the company and money may be squandered or misused without their being able to detect it. The board may appoint an auditor, it is true, whose duty is simply to see that the books and accounts are correctly kept. He is, however, merely a servant of the board like any of the other officers and is in no way responsible to the shareholders. What is required is a law giving to shareholders the right to appoint an auditor who will be responsible to them alone. His duty should be to report upon the books and accounts and the whole management of the company's business, and it should be rendered direct to the shareholders at their regular meeting independent of any statements submitted by the board. The appointment of such an official by the shareholders would be a guarantee to them that the true position of affairs would become known.

Any discrepancy between the report of the shareholders' auditor and that of the Board of Directors would be sure to bring about an investigation, and knowing this the tendency would be to make the directors doubly careful how the company's business was managed. This and obliging companies to publish at regular intervals a statement of their exact position would do much to protect investors in mining companies from fraud or mismanagement.

#### *Requires Attention.*

**W**HY Ashcroft, the doorway to the Upper Country, should not be a port of entry is one of the things past finding out. We know that it is not a port of entry, and we also know that it would be a great convenience to the public transacting business in that part of British Columbia if it were so; but why no action is taken in the matter by the Department at Ottawa is, as we said before, one of the things past finding out.

Petitions have been sent in asking that Ashcroft be made a port of entry, and promises we understand have been made that the prayer of the petitioners would be granted, yet Ashcroft to-day has no customs office established there. We suggest to the Government that no more promises be made, but that in lieu thereof there be immediate action taken in this very important matter.

#### *Metals More Precious Than Gold.*

**T**HERE are several rare metals that are much more valuable than gold. Gallium, for example, is quoted in the market at \$3,000 an ounce avoirdupois. Tons of zinc ores must be worked over in order to obtain a trifling quantity. Most costly of all metals save only gallium, is germanium, which is quoted at \$1,125 per ounce. Rhodium is worth \$112.50 an ounce; ruthenium, \$90 an ounce; osmium, \$26 an ounce; and palladium, \$24 an ounce. The last is about equal in value to gold. These metals are of no great commercial importance. Most of them are mere curiosities of the laboratory, having been discovered originally by accident, incidental to the analysis of ores. It has been suggested that some of them might be coined, but the supply of them is too uncertain. That was the difficulty with platinum, which the Russian Government minted in the first half of the present century. Iridium is utilized to some extent for making instruments of delicacy which must have the property of not corroding. It resists the action of all single acids. Its only important use is for tipping gold pens. For this purpose the grains of it, which are flat like gold dust, are picked out with magnifying glasses. At the mints it makes a good deal of trouble, the difficulty being found in separating it from gold bullion.—*American Journal of Photography.*

#### *A Suggestion by a Correspondent.*

**T**HE best way to obtain a mining property is, of course, to purchase a developed claim, provided you have the means. But if you wish to acquire a mineral claim and have only a small amount of money to invest a good way is to follow the plan which is working well in some of the coast cities, viz., a number of business men form a syndicate, ten or more paying in

say twenty dollars a month, according to the conditions, probable expenses, &c. Out of this capital they pay a reliable prospector to go out and locate mineral claims. The prospector usually has an interest reserved for himself in addition to his salary and expenses. This man brings samples of the ore from his locations, prepares reports, descriptions, etc., and if his "find" is a good one the syndicate has little difficulty in finding a capitalist or company to take it over at a fair figure. In this way a claim costing the syndicate about \$100 is often disposed of for \$1,000 with almost no development done on it. The past season several such small partnerships at the coast have made a handsome thing in this way. The plan is a good one because it not only puts good men on the lookout for mineral but when the same is discovered it is brought into contact with capital by business men not by the prospector, who, unfortunately, has often too exaggerated an idea of his location to part with it at a moderate price, thus preventing the development of the same. Sometimes where the syndicate secures a location that promises well a joint stock company is formed of the partners and regular mining operations commenced as soon as stock enough is sold to secure the required capital.

#### *Railway and Steamboat News.*

All the steamboats and plant generally belonging to the Columbia & Kootenay Navigation Company, and in use on the Columbia River and Kootenay Lakes, will be acquired by the Canadian Pacific Railway Company on February 1st.

A steamboat of the same design and dimensions as the *Nakusp*, which will be called the *Kootenay*, is now under construction at Nakusp and should be ready for operation about April 1st, on which date, or sooner, if practicable, a daily steamer service from Arrowhead will be inaugurated.

A schedule will be adopted whereby all detention, as at present unavoidably experienced at Revelstoke, will be done away with on coast business.

It is more than likely a second boat will be built at Nakusp by May 1st to be used as a quick despatch passenger, mail and express steamer to insure the daily connection already referred to.

With the early completion of the railway now under construction by Mr. Heinze and associates between Trail and Robson the C. P. R. will be in a position to deliver passengers, mail and express at the former place as expeditiously as to Nelson, which will be the same day from Arrowhead.

On Slocan Lake, at Rosebery, the C. P. R. are preparing to build a fine steamboat, equal in speed and capacity to any craft on the Kootenay Lakes.

With the completion of the Slocan extension of the Columbia & Kootenay Railway from Slocan Crossing to Slocan City, now decided upon, the railway company will handle all business for Nelson and district more expeditiously.

Freight, including ore, will be delivered without breaking bulk between Nelson and the main line, as is now being done with all Slocan business, and it is hoped in the near future with Rossland traffic. The steamboats on the Kootenay Lakes will be run to give the best possible despatch.

The C. P. R. also propose in the near future to give steamboat transportation north of Revelstoke to assist in opening up and developing the great Big Bend

country, and the company will be prepared in due time, when the mineral discoveries and development warrant it, to consider the matter of steamboat transportation north of Kamloops.

Coal will be used on the Columbia River steamboats to avoid delays and annoyances incident to the use of wood and loading up same *en route*.

Mr. C. E. Perry, engineer in charge of the survey in British Columbia for the C.P.R. is in Nelson, and will be engaged for the next month in making maps of the road from the foot of Slocan Lake to a connection with the C. & K. at Slocan crossing.

### Coal Shipments During 1896.

#### WELLINGTON COLLIERIES.

	Tons.
January	23,042
February	25,925
March	21,106
April	10,127
May	17,163
June	13,523
July	12,769
August	8,710
September	24,800
October	17,552
November	28,068
December	25,093
Total, 1896	227,878
“ 1895	235,951
“ 1894	249,049

#### UNION COLLIERIES.

	Tons.
January	18,909
February	10,850
March	21,080
April	17,664
May	19,360
June	8,323
July	11,269
August	6,198
September	9,565
October	11,534
November	300
December (approx.)	14,805
Total, 1896	150,657
“ 1895	207,543
“ 1894	203,598

#### NEW VANCOUVER COLLIERIES.

	Tons.
January	14,232
February	18,749
March	14,309
April	22,792
May	24,353
June	18,864
July	24,986
August	18,384
September	14,206
October	17,310
November	19,032
December	31,938
Total, 1896	320,900
“ 1895	241,495
“ 1894	289,018

#### TOTAL OUTPUT OF COAL.

	1895.	1896.
Wellington	337,146	321,530
Union	258,542	202,839
New Vancouver Coal Co	339,704	320,900

### Electric Mining Machinery.

BY IRVING HALE, COLORADO.

**E**LECTRICITY is being applied to the operation of every kind of machinery used in mines.

Hoists.—The first application of electric power and

one of the simplest, was to hoisting; the rotary motion of the electric motor being easily adapted to this work.

Most of the earlier machines consisting of street car motors, geared to flat friction or V-friction hoists. This type is very satisfactory for small or medium-sized machines, as the friction gear is an assistance to the motor controller in smooth starting.

For large hoists a positive geared motor is more reliable; but it is desirable to interpose a friction clutch or equivalent device at some point between armature and drum, as a safeguard in case of excessive strain on gearing, caused by the inertia of the armature when the drum is stopped by a too sudden application of the brakes. D. W. Burton, of Aspen, has designed a slipping pinion, which is used on the electric hoists in mines under his management, and serves this purpose admirably.

The choice of the best kind of motor depends considerably on the size of the hoist, its location, and the nature of the work. For an unbalanced hoist of moderate size, especially if placed under ground and exposed to dirt and water, the iron-clad series wound street car type is well adapted, as it is strong, well protected and designed to stand heavy work on intermittent service. In this motor, efficiency, low heating and absolute freedom from sparking are to some extent sacrificed for compactness and lightness. For large hoists, which are generally located in comparatively clean, dry places, and, if over-balanced, work almost continuously, hoisting and lowering, and in which high efficiency is more important than in small hoists, the stationary type of motor is usually preferable.

The speed controller is one of the most important features of an electric hoist. On many of the earlier hoists the commuted field, thrown into various combinations of different resistances by a cylinder-switch was employed; this form of control being at the time widely used in street-car service. This controller gave quite satisfactory results when assisted by friction gearing, but with positive gearing it would not give a sufficiently gradual start. On most hoists a variable resistance in armature-circuit is employed; and by making this resistance sufficiently high, a perfectly smooth start may be obtained, even with slack rope. The most satisfactory rheostatic controller, especially for heavy work, is one in which the resistance is cut in and out by a cylindrical switch with magnetic blow-out, which avoids the troublesome effect of arching at contacts, when the current is broken.

In some cases it is practicable to use a double motor equipment, with series parallel controller, such as is now employed almost exclusively in street car works.

By overbalancing a hoist, making the counter-weight equal to the dead load plus about half the live load, the work in hoisting and lowering can be made approximately equal, and the maximum current and size of motor can be reduced to considerably less than half of what would be required for doing the same work with an unbalanced hoist. This principle is used in the electric hoists at the Free Silver, Alta Argent and Della S. mines at Aspen, and the Silver Lake mines at Silverton, and will doubtless be employed more generally in the future than in the past.

The Alta Argent hoist, in addition to being overbalanced, is arranged in a novel manner. The hoist, with its motor, is placed on a substantial platform above the head of the incline, is out of the way of the operator, who is located with the controlling levers, just below the hoist and on the level where the cars are run off. This gives more room for handling the cars as



SLOCAN STAR CONCENTRATOR, SANDON, B.C.



THREE FORKS, B.C.

they are raised, and enables the hoist operator to do this work.

The largest electric hoist in the world is on the Free Silver shaft at Aspen, Colorado. It is an overbalanced double reel, flat rope hoist, equipped with a 100 Kw, 4-pole motor, capable of developing 120 H. P. continuously and 150 to 175 H. P. intermittently. An auxiliary 60 H. P. more ordinarily doing other work, is arranged so that it can be geared to the hoist counter shaft and assist the large motor if necessary. Each reel has 1,500 feet of 4x $\frac{3}{8}$ -inch flat rope, weighing 2 $\frac{3}{4}$  pounds per foot. The cage weighs 1,375 pounds, bucket and ore (hung from cage in sinking) about 2,400 pounds, car and ore about 3,500 pounds, and bailer, containing about 111 cubic feet of water, about 900 pounds. Two counter weights are used, the one for cage and bucket weighing 2,450 pounds, and the one for cage and car 2,675 pounds, the two being combined when bailing. Two armature pinions are provided (the motor sliding on rails), one for ordinary hoisting giving a speed of 600 feet per minute, and the other for bailing at 1,000 feet per minute, which, with the maximum load of about 10,000 pounds (bailing) would require over 300 H. P. net, exclusive of friction in gearing and rope, were it not for the overbalanced arrangement. Actual tests have shown that the average current consumed in hoisting with counter-weight is only about one-third of the amount required when the hoist is unbalanced.

**Pumps.**—The electric pump presents a somewhat more difficult mechanical problem than the hoist, on account of the conversion of rotary to reciprocating motion, and the importance, in most cases, of compactness and protection of the motor against water. That the problem has been satisfactorily solved, however, is proved by the large number of electric pumps of various kinds and sizes in successful operation.

The sinking pump is the most difficult to design, on account of the small space available for the motor, and the necessity of enclosing it in a practically water-tight case; but numerous successful pumps of this kind have been made and installed. The three-phase induction-motor is especially adapted to this work, as it has no brushes or moving contacts, and the wires can be carried through water tight bushings in the case to the stationary terminals on the field.

**Blowers.**—The running of blowers and exhausters is another simple operation, the motors being either belt-, geared or direct-connected to the blower shaft. Small outfits of this kind, placed at various points throughout the mine, run continuously with very little attention, and afford the most economical and satisfactory ventilation—far superior to the vitiated air that has passed through air compressors and drills.

**Percussion Drills.**—To obtain with electricity the rapid reciprocating motion with varying stroke and necessary elasticity required in a percussion drill, and at the same time get a machine that will stand unlimited abuse, has been the hardest problem in the mining field that the electrician has had to solve.

**Locomotives.**—Electric haulage in mines, under ordinary conditions and where distance and tonnage are not too small, is without much question superior to any other system available. It is more flexible than rope haulage and more economical than mule or compressed air. Electric locomotives have been principally employed in coal mines on account of larger tonnage and longer hauls; but are coming into use in metalliferous mines, and will be used more widely as

long tunnels, tapping numerous veins, become more common. Mine haulage is similar in most respects to street-railway service; but the locomotive must generally be adopted to narrow gauge, the motors should be better protected, the speed is slower and the weight on driving wheels greater.—*The Mining and Electrical Review.*

### **Mining Committee's Report—The British Columbia Board of Trade.**

The following report of the Mining Committee was submitted at the meeting of the British Columbia Board of Trade on the 7th inst.:

VICTORIA, Nov. 2, 1896.

*The President and Council of the British Columbia Board of Trade.*

DEAR SIRS,—Referring to your favour of September 2nd, asking us to take under consideration and advise you upon that paragraph in the board's last annual report "directing attention to the principle upon which some mining companies are formed. The system of capitalizing slightly developed mineral claims for large sums of money and selling the stock at a small percentage of the par value is, in the case of the liquidation of the company, fraught with serious consequences to the holders, and in any event prejudicial to the proper development of the mine. The laws of British Columbia are opposed to a company selling its stock at a discount, yet these have been evaded in the case of some mining ventures. Discontinuance of this practice and the compliance with Provincial laws will be some guarantee that companies are formed for the purpose of working the mines instead of unduly enriching the promoters of the schemes. The incoming Council should look into this matter and, if necessary, bring it to the notice of the Provincial Government with the view of remedial legislation." Fully realizing the great importance of the subject, your committee on mines and mining have held several meetings, discussed the subject with many persons, and corresponded with the Boards of Trade of Montreal, Toronto and Hamilton, the Stock Exchanges of Montreal and Toronto, besides the general managers of several of the largest financial institutions in Canada.

Replies were received from several, among them being one from the Montreal Board of Trade endorsing nearly all the suggestions of the committee.

After seriously considering the different phases of the subject, and looking at the matter in its broadest sense, and with the sole object of bringing the mining industry of this province to a sound and healthy basis, your committee make the following recommendations as the basis of your action, if thought necessary to bring the subject to the notice of the Provincial Government:

1. No companies to be registered to do business in this province except those organized under British or Canadian Acts.

2. The following scale of fees to be charged by the Government on all mining companies incorporated:

(For the purpose of comparison we place in parallel columns the fees which would have to be paid in Britain.)

Capital up to	Fees to be imposed	Total duty and fees payable in Great Britain
\$ 100,000.....	\$ 25	£ 30 5
200,000.....	100	55 5
300,000.....	200	80 5
400,000.....	300	105 5
500,000.....	500	130 5
600,000.....	600	156 10
700,000.....	700	185 10
800,000.....	800	200 10
900,000.....	900	220 0
1,000,000.....	1,000	235 5

3. Not less than one-third of capital to be set apart for "working capital" and which shall not be sold for less than par value.

4. Careful revision and consolidation of the "Companies Acts," particularly as applying to the organization of mining companies.

5. If at all possible to prevent the repetition of the names of claims.

6. Consider the advisability of allowing the head offices of companies organized under the British Columbia Act to be located in other parts of Canada, and boards of directors of

such companies not necessarily to be residents of British Columbia. A British company has its head office in the United Kingdom and has its board of directors there.

7. The Provincial Government to require from all mining companies incorporated in British Columbia or registered under the Companies Acts "foreign" an annual or semi-annual statement, which statement should be published in pamphlet form, so that investors at home and abroad would be able to judge of the position of their investments. The statement should be in tabulated form, not too much in detail, but giving the most salient points, after the style of the Dominion banking returns: Authorized capital, treasury shares, each sold; treasury shares unsold; shipment of ore, tons; workmen, average value of ore shipped; length of time closed down; value of plant and machinery.

8. That no shares (other than treasury) be permitted to be issued until after a certain percentage (if only 5 per cent.) of the treasury stock has been sold, and the money in the hands of the company.

In its issue of September 18th, the *Rosstand Miner* had a strongly worded editorial upon this question, to which we beg to call your attention, as it shows the feeling of the mining district to be in the direction of our efforts.

It is to be expected that some of the foregoing suggestions will be too radical, but the subject must be faced squarely. Are we going to permit our mines to be operated by irresponsible persons with no possible control of their actions, or are we going to build up our mining industry upon a lasting basis? We all believe that we are on the eve of an immense development of our mineral interests to rank among the foremost in the world. It is therefore incumbent upon us to lay the foundation, not looking to the present only, but to the future, so that mining in British Columbia will be synonymous of fair and square business propositions, organized on a basis of British integrity and protected by laws that are already the admiration of all visitors to our mining camps.

The whole respectfully submitted.

FRED'K B. PEMBERTON,  
FRED. J. CLAXTON,  
G. A. KIRK, (F.J.C.)

Annexed to the report was the following letter from Mr. Kirk, who is at Nelson:

"Dear Claxton:—In talking with the people up here, there is a sort of idea that there is a great hardship in making men who are working in a mine for wages take out a miner's license, when they have no interest in any mining claim. The idea is that the Government would not lose very much, and it would do a good deal for them in other ways. Of course, if they have any interest in claims they have to have a license anyway, and they don't kick at all. But the other way, it seems to me hardly fair. Why shouldn't they tax a stonemason or bricklayer in just the same way? It is little injustices that make people kick most.

"Yours sincerely,  
"G. A. KIRK."

In this report the *Rosstand Miner* is quoted as favourable to the views recommended by the committee. We would point out, however, that the paper in question is not the only one in Kootenay that has taken up the cudgels in favour of honest formation and administration of mining companies. With few exceptions the newspapers of British Columbia have been hammering away on this point for some time. This should have been shown in the report, and would have added weight to the recommendations.

The recommendations are a good deal in line with what we have been advocating during the past twelve months, and we are pleased to see an influential body of men such as the British Columbia Board of Trade taking the matter in hand even at this late day.

The letter of Mr. Kirk appended to the report is an important one, and should have the immediate attention of the Government. We have on several occasions pointed out the great injustice that is being done to working miners by obliging them to pay a license, and believing that the Government has no desire to act unjustly in the premises, we commend Mr. Kirk's letter to their serious consideration.

### *The Alberni Consolidated.*

The management of this company has received the following assay of a specimen of ore taken from the new ledge now being opened up:

	Ozs.	Value.
Silver.....	16.4	\$ 16 40
Gold.....	70.5	1,457 24
Per ton of 2,000 lbs.....		\$1,472 64

The prospects of the Alberni Consolidated are becoming more and more encouraging as work proceeds. It will be a great mine.

### *The Press of British Columbia.*

THE "COLONIST."—Of Victoria, one of the oldest papers in British Columbia, published a very valuable number on the 1st January, containing a *resumé* of the trade and industries of the province during the past year. The issue was a most creditable one, especially as regards the mining news. We trust the edition had a large circulation.

"THE PROVINCE."—Published in Victoria and Vancouver, is looked upon as the most outspoken and fearless journal in British Columbia, and has earned for itself a character for independence which few papers possess. As the exponent of reform and progress it stands unrivalled, and although we have had occasion to differ from it on some points we cannot but respect the honesty of purpose which, we believe, lies at the bottom of its writings. It is a journal upon which the people rely to denounce abuses and advocate reform no matter whose skull may be cracked in the operation, and as apparently it has no axes of its own to grind its utterances are all the more powerful. We are glad to know that its circulation and sphere of usefulness is on the increase. This is the highest compliment that can be paid to a paper.

THE VANCOUVER "DAILY NEWS-ADVERTISER."—The pioneer newspaper of the city of Vancouver has steadily kept the lead which it secured early in its career among the daily newspapers of British Columbia. Its editorial articles have always commanded attention and wielded great influence in provincial affairs, while its news columns have been characterized by strict accuracy and an entire absence of those objectionable features which are too common in newspapers on this continent. The *News-Advertiser* has always been noted for the ability with which it has handled provincial, financial and commercial matters and its news regarding mining and other enterprises are always reliable and full of accurate details of the various subjects referred to.

THE "WEEKLY NEWS-ADVERTISER."—One of the best compendiums of all the chief incidents occurring in British Columbia which can be sent to those at a distance.

THE "INLAND SENTINEL."—Of Kamloops, now enlarged to eight pages, is, under its new management, showing commendable enterprise in giving particular attention to mining news from that rich district. The *Sentinel* is now arranging to give special correspondence from every section tributary to Kamloops where mining is engaged in. The information thus obtained will be most valuable, and cannot fail to be of great service to the district. There is not at the present moment a better conducted



newspaper in the interior of British Columbia than the *Sentinel*.

THE "NELSON MINER."—Which is now in its seventh year of publication, is the oldest mining paper in the Kootenay. It gives very complete returns from the smelters, and valuable statistical information about the produce of the mines, stocks, bonds, etc. Its columns contain interesting and valuable news items from the Slocan, Trail Creek, Kootenay Lake, Nelson and other mining centres, and the paper altogether is doing good work for Kootenay.

Greenwood City, the "key" to the Boundary Creek district, is peculiarly advantageously situated as regards the mining camps which surround it on all sides. Hardly a year old, the town now boasts of general mercantile stores carrying as full a line of supplies as any in the interior, and nearly every branch of business and profession is represented. One enterprise which deserves more than passing notice, is that of the *Boundary Creek Times*, an 8 pp. and cover weekly mining paper, excellently printed and artistically got up, which is doing excellent work in attracting notice to this district. It is edited and managed by Messrs. W. J. Harber and H. Mortimer-Lamb, both well known in the journalistic field of B.C. The hospital recently opened is as good as any interior city can boast of and is a credit to the private enterprise of Mr. Robt. Wood; its cost was over \$8,000. A public school has recently been erected; an opera house; an Odd Fellows' hall is shortly to go up; water works system partly constructed; streets graded and roads built to reach the several mining camps, and many improvements partly under way, stopped only by the early advent of winter.

One of the best conducted weekly newspapers in British Columbia is the *Vernon News*. It is published in a district which is rapidly coming to the front as a mining section. The rich "finds" at Fairview and other points tributary to Vernon have brought the Okanagan country into prominence and the *Vernon News* keeps thoroughly in line with the advance of the district by giving the latest and most reliable news from the various points where mining is being carried on.

THE "ADVANCE."—Published at Midway, well represents the town and district in which it is published. Typographically it is one of the neatest papers in the province. Its fund of news from all sections of Boundary Creek district is most complete and to anyone interested in that section of the country the *Advance* is a good paper to subscribe to; editorially it is ably conducted.

THE "GOLDEN ERA."—Published at Golden, the doorway on the C.P.R. to East Kootenay, is a live and enterprising journal. It and the *Prospector* are the representative journals of East Kootenay.

#### A Great Turbine Power.

THE new power company at Niagara Falls, have now in successful operation their new power plant, consisting of four of the Leffel celebrated Niagara type of turbines, each of about 2,200 horse power capacity, or giving in all some 9,000 horse power. These turbines drive eight generators of something over 1,000 horse power each; generators being connected directly to the shaft of each wheel, one being placed on each side. This comprises the most complete and perfect electric water power plant in the world. The same company have four other of the Leffel Niagara Turbines, using in all eight of that style of wheel.

#### Asbestos at Kamloops.

A CORRESPONDENT, writing to the *Inland Sentinel*, says: To the north of Coal Hill the diorite in which the rich copper-gold ores of the Kamloops camp exist, which have captivated the men who run smelters in such pronounced manner, is covered by a reddish silicious trap, on the further side of which it again crops out here and there on the railway, but with a decided change, and one which may have important features from a monetary standpoint. The feldspar disappears, leaving the horn-blende "clean" in the main in its usual form of coarse black crystals. But at least at one point it has been discovered in the marketable fibrous condition called commercially asbestos, and by those who desire to be scientific, "amianthus." In this form horn-blende becomes of great interest to the miner. The fibre, which is of a delicate green or white in colour, is spun into thread, which, in its turn, is coarsely woven into a kind of cloth and used for an annually increasing number of purposes, being the best non-conductor of heat known and almost incombustible. The width of each seam marks the length of the fibre, and there may be any number of parallel seams in a vein or band. The longer and more silky the fibre, within certain limits, the more valuable the material. The discovery two or three miles west of Kamloops City has a fibre of good length, but owing to surface exposure no opinion of its quality in other respects should be stated until some little development enables samples to be obtained in the natural, unaltered condition.

Kamloops is thus shown to have one more valuable mineral in close proximity. Its copper-gold ores, while undoubtedly of greatest importance, need not interfere with the search for gold quartz, silver-lead, coal, iron, gypsum, cinnabar (quicksilver) and asbestos, all of which are now shown to exist, which should be carried on vigorously.

#### The Cassiar Gold Region.

IT will doubtless be of interest to the mining community to learn that there is a near prospect of having the former celebrated Cassiar gold mining region again opened up, and placed in easy communication with the rest of British Columbia. Application is made to the Legislatures of the Dominion and British Columbia for an act of incorporation giving power to construct a railway through the northwestern portion of Cassiar district to Teslin Lake, which is navigable and connects with the head waters of the great Yukon River. This proposed railway will, therefore, not only afford a channel of communication through Cassiar and to East Yukon, which is proving rich in gold, although hitherto very difficult of access, but will give the merchants and business men of British Columbia an opportunity of getting a share of the trade of the Yukon region, which is at present monopolized by United States traders. The railway will connect with the coast cities of B.C. by the Stikeen River. The time is not very far distant when the Stikeen & Teslin Railway will form a link of an extended line of railway from the Kootenay mining region, by Cariboo, Omineca and Cassiar, to the international boundary line at Fort Cudahy in East Yukon.

ALEXANDER BEGG & SONS.

The shaft on the Nightingale is down 17 feet in solid ore.

## HAPPENINGS AT THE MINES.

## ASHCROFT.

The Burrard Inlet Telephone Company will begin in the early spring and build a line through from Ashcroft to Clinton, 150-Mile House, Soda Creek, Quesnelle, Stanley and Barkerville, with a branch line to Quesnelle Forks.

The 150 foot tunnel of the Cinnabar mine at Savona is in ore grading 1 to 5 per cent quicksilver. A new working tunnel is now started lower down. Rich streaks of ore are found all through the lower grade.

It is reported that the Maud is sold for \$5,000 down on signature of paper and \$95,000 cash within six months.

It is expected that the Blackwater country, which is tributary to Lillooet, will show up well in the spring. The ore bodies so far as found have been very large, and the ore carries gold, silver and copper.

Improvements are about to be made by the C.P.R. in their station at Ashcroft. The present station rooms will be changed and a baggage room erected. The receipts at the Ashcroft station are second on the Pacific division, Vancouver alone being ahead of it.

Mr. Mitchell, who is the expert in charge of the work being done on the Bonaparte, 16 miles from Ashcroft, says that the outlook is good for valuable quartz mines in that section. Several small ledges carrying well in silver have been found, and when the crosscut tunnel now being driven is in a few hundred feet Mr. Mitchell looks for a valuable strike.

A company has been formed to prospect the Cañon Ravine on Canadian Creek.

The Discovery claim, up Valley Creek, is situated about one and a half miles from Barkerville. When the claim was located there was comparatively no water with which to test the ground, but by using economically what little water there was they were enabled to make about \$20 a day per man. This company is composed of miners located here, and they deserve great credit for the manner in which they have conducted their operations. Last summer they were offered somewhere in the neighbourhood of \$50,000 for the ground, which they refused.

## BOUNDARY CREEK.

Mons. Gire, representing the French syndicate operating in Central camp, proposes to treat his ores by an electrical process. He asserts that ore can be treated so inexpensively by this process that he will be entirely independent of railroads.

The double compartment shaft is down 45 feet on the R. Bell.

The vicinity of Christian Lake gives promise of becoming a rich mineral producing region. Some excellent results have been obtained recently from assays of ore from that neighbourhood.

The tunnel is now in 110 feet on the Mother Lode, and the assays are steadily improving. The manager states, however, that in his opinion "the rock is harder than any to be found in British Columbia."

Messrs. Sanson & Holbrook have received the smelter returns from approximately four tons of ore shipped to the Puget Sound Reduction Company at Everett, Wash., from the D.A., one of the Boundary Creek M. & M. Co.'s properties, as follows: Silver, 74.7 oz.; gold, 4.99 oz.; lead, 2 per cent.; total value, deducting freight and smelter charges, \$449.69. Judging from assays made this week the G.A.R., owned

by the same company, is also a shipping proposition, the ore from the bottom of the shaft running \$15.05 in gold and 196 4-5 oz in silver, or \$142.87 for all values. The vein matter is galena, blende and pyrites.

## FORT STEELE.

On the Lage Shore a 30-foot tunnel has been run, showing a large amount of galena in place.

The North Star mine has thirty men engaged in taking out carbonates. It is reported that 6,000 tons will be shipped during the coming year.

On the St. Eugene 600 feet of tunnelling has been done, and they are now sinking a shaft through ore from the upper to the lower tunnel, a distance of 100 feet. At present there are about 4,000 tons of ore on the dump, and fully 12,000 in sight which assay about 55 oz. in silver and 68 per cent. lead.

## GOLDEN.

It is not generally known that there is mining work going on near Beaver. About one mile south of the station Messrs. Neilson and Downie of Beaver and Donald respectively have made a location which has the appearance of turning out to be a rich strike.

## GRAND FORKS.

It is now understood that the Bank of Montreal will open a branch at Grand Forks, arrangements have been made for a building site, the same on Riverside Avenue and Bridge Street, and the building will be put up in the spring.

An \$90 gold assay was recently made from the capping taken from the Garnet claim on Pass Creek, which is owned by Mr. Walter of Spokane. The Garnet is a rich proposition and there is every indication that it contains a paying mine.

## KASLO.

T. Claridge, from Johannesburg, South Africa, and London, has been looking over the Slocan district and is most favourably impressed with the same.

Recent work upon the new vein of the Bluebird property has developed a very high grade ore.

Manager Eaton of the Whitewater mine reports excellent sleighing on the wagon road from the workings to the railway station, single teams being able to take down five tons at a load. In illustration of rapid transit he says that a carload of ore at the mine in the morning is hauled down, loaded upon the car, delivered at Kaslo station and placed upon the steamer the same night. Late shipments from this mine have been taken to the Kaslo sampling works.

Mr. John L. Retallack has in his collection a specimen of ore weighing thirty-five pounds, from the Whitewater mine, which is composed of grey copper and galena. The specimen is valued at one dollar per pound.

The new engine and passenger coach for the Kaslo & Slocan Railway have arrived. The engine is one of the heaviest used on a narrow gauge road and will weigh with its tender sixty-five tons. It was manufactured at the Baldwin works in 1889. The new coach is neatly upholstered in scarlet plush and is seated throughout.

## KEREMEOS.

Sharp and Ed. Williams have run a tunnel on the Surprise lead for 50 feet, and are down 30 feet with the shaft. The ore is copper and iron sulphides, assaying as high as \$35 in gold, 10 oz. in silver and

20 per cent copper. The ledge is three feet wide and well defined.

The ledge on the Elkhorn has been crosscut for 80 feet, and as yet no hanging-wall has been reached. The ore is what may be called low-grade, averaging \$15 for gold and silver values and seven per cent copper. There is, however, a paystreak 12 feet wide of clean copper sulphurets that runs \$68 in gold and silver to the ton and up to 23 per cent copper.

Mr. Coulthart discovered a short time ago what I believe to be one of the largest bodies of low-grade sulphide ore, judging from surface showings, yet discovered in the province. The outcroppings have been traced clear across the claim for the full 1,500 feet.

## MIDWAY.

A bond has been given on the Sunset claim in Deadwood camp to a Mr. Hogg of Toronto, who is a representative of a strong eastern syndicate. Mr. James Brady of Rossland experted the property. The consideration named in the bond is \$10,000, of which ten per cent, or \$1,000 has been paid down. The bondholders will put men to work very shortly.

## NANAIMO.

An important meeting of the Miners' and Mine Labourers' Protective Association was held the other day. The meeting was a large one and was in session for some time. After some discussion the agreement was come to that the miners and mine labourers of the New Vancouver Coal Company work for six months at the present schedule of wages, subject to any material change in the price of coal in the meantime.

## NEW DENVER.

Assays from the tailings of the Slocan Star concentrator show as high as 22 ounces in silver to the ton.

The Enterprise continues to ship four carloads of ore a week to the smelter at Omaha.

The Rambler is making a name for itself as a shipper. Already five carloads of ore have been shipped from this property, and in a few days a shipment of two more carloads will be made.

The tunnel on the Phoenix, on the north fork of Carpenter Creek, is now in 80 feet. In the last ten feet the paystreak has increased from 6 to 13 inches of almost clean ore. The indications are that it will grow wider as the ore shute is approached.

On the Silver Nugget, situated at the head of Eight-Mile Creek, there are six men working day and night. They have run a crosscut tunnel in 60 feet, and have drifted in on the ledge for over 50 feet. The paystreak is from five to fifteen inches wide; all high grade ore.

Holding its own through all the fluctuations of the silver market, and maintaining its place as second to none among the great silver mines of the Slocan, is the Noble Five. Discovered in '91, when Slocan was known but locally, this proposition has paid richly the industry of its owners. Although the bulk of the work done has been in the course of development, still some 2,000 tons of ore have been sent to the smelter, which netted the company \$130,000.

## REVELSTOKE.

The C.P.R. are making extensive improvements at Arrowhead, including a new double track, the bed built up with rock work, and a portable wharf built on wheels.

Trout Lake will be one of the shipping silver camps this year. The Great Northern, Hugh McPherson,

manager, has let a contract for hauling 300 tons of ore. The ore will probably go to the Nelson smelter.

Mr. Jameson, engineer for the Horne-Payne Co., has given Craig & Hillman a contract for two hundred tons of ore from the Broadview. On this property they are sinking a shaft and running a level to the vein, and will also run a second tunnel one hundred feet below the first workings to catch the vein for depth and give stoping. When the vein is caught and the ore picked, shipments will probably begin.

Last week there was shipped from Arrowhead a consignment of Silver Cup ore to the Tacoma smelter. The shipment was one of twenty tons, and was of an average value of \$400 per ton, a fact which should not be overlooked, representing as it does the grade ore to be had in the Trout Lake camp. The silver ores of that district are as rich in silver as those of the Slocan, and go well also in gold, the value in that metal in the Silver Cup ore being some \$36 per ton.

## ROSSLAND.

The Jumbo will begin shipping at once. Five carloads are now ready, and an average of at least two carloads a week will be maintained.

Shipments to the smelter from Rossland in 1895 aggregated 22,500 tons. Incomplete returns for 1896 show that 40,000 tons of ore were shipped last year. Shipments now and for some time past have averaged considerably over 200 tons per day, and they are sure to reach a total of 100,000 tons for the year 1897.

The shaft of the War Eagle is down 320 feet, and the best ore yet taken out is from this depth. The War Eagle, like the other mines in this camp, improves with depth.

Work has been started on the long tunnel to be run through the Gopher and the Homestake to make a connection with the working shaft of the Homestake.

A big strike is reported in the City of Spokane mine. This belongs to Horne-Payne's syndicate, the Lillooet, Fraser River and Cariboo Gold Fields Co. The mine was bought by them last May for \$47,500, and upwards of \$50,000 has since been spent in equipping and developing the property.

The *Miner* states that a movement is on foot for the building of a smelting plant very near Rossland and that the site most in favour is a flat piece of ground on the Maid of Erin claim on the south branch of Trail Creek and a little above the junction between it and the north fork.

The Sunset, just above the Columbia & Western railway spur, opposite Rossland, will be an early shipper.

The entire 90 feet of the Homestake shaft is in ore. There is a drift on the vein at the 55-foot level 104 feet long, and this went through an ore chute 40 feet long.

There was a rich strike made on the Palo Alto recently. The Dunn Bros., who have the contract for sinking a 100 foot shaft, struck a three-and-a-half foot ledge of solid ore at a depth of 81 feet.

The Golden Drip, situate east of the O.K., and recently incorporated, is a free gold proposition which promises well.

There is no question as to the high grade ore in the Jumbo carrying tellurides. A test made in Spokane has proven it.

A force of men have been put to work on the Iron Colt tunnel, which will be driven to tap the ledge at a depth of 150 feet. The tunnel will be about 380 feet in length.

The Montreal syndicate, represented by James F.

Wardner, which recently acquired 800 lots in the townsite of Rossland, and subsequently secured an option on the plant, franchises, etc., of the Rossland Water and Light Company, has made its first payment on the latter option.

The Mugwump shaft is now down 84 feet. Two feet of good ore are in sight on the foot wall in the shaft. The hanging wall is not in sight.

#### SLOCAN.

Ten Mile Creek is probably the busiest tributary to Slocan Lake south of New Denver. It has won the faith of investors by turning out well so far.

The Mountain Chief mine is expected to ship three carloads of ore per month during the winter. There are seven men employed at the mine.

Native silver is becoming an everyday object on the Bondholder workings. Rawhiding from the claim will begin at once.

Fielding & Cooper, who had the Arlington, on Springer Creek, thrown on their hands by the French syndicate two months ago, have made a big strike on the property.

The Noble Five have hauled the first instalment of their cable, which was a difficult task owing to the steepness of the mountains. The concentrator and flume are now completed, and when the tramway is finished work will be commenced.

Advices received from the superintendent of the Two Friends, in the Slocan, state that the vein is increasing in width and rich spots of galena are coming in with carbonates. The ore now being stoped, which will comprise six carloads, will give an average of 500 ounces of silver to the ton. This is a decided increase in values over former shipments.

#### VERNON.

The directors of the Morning Glory mine have decided to shut down work for the present, pending the securing of a competent manager and superintendent. A large quantity of ore is now on the dump, and Mr. W. H. Ireland, who has set up his test smelter, will be in a position to run it through in the course of a few days.

A certificate of a recent assay obtained from rock taken from the Bon Diable mine, situated about three miles northwest of Vernon, shows the rock to be "iron oxide with a little quartz," and the result is as follows: gold, 13.1 oz., value \$276 per ton; silver, 4 oz., value \$2.72 per ton; total value per ton, \$278.72.

#### What is Being Said About Us.

THE following paragraphs are clipped from the *Engineering and Mining Journal* of New York, probably the most influential mining paper published in the United States:

It needs no argument to convince capital that the best country in which to invest in mining is where the mineral production has grown steadily, even under low prices and depressed commercial relations. North America, and especially the United States, is producing more and more of minerals and metals, and its increase in gold production in the year just closing has been about twice as great as that of all the rest of the world. Capital is not blind or deaf. The next great mining investment boom will have its seat in the United States, in Mexico and in Western Canada, though in this last much caution should be exercised, for there are many "wild cats" there looking for prey.

\* \* \* \* \*

The gold production of Canada shows an increase of some proportions. The Nova Scotia mines contributed 25,000 oz. of the total, and generally did well in 1896. The Ontario mines show little change, though a good deal of attention has been directed to the Rainy Lake region, where large bodies of

low-grade ore are said to exist. The chief mining developments of the year, however, have been in British Columbia, where the rapid development of the Trail Creek and Slocan districts, with their large bodies of smelting ores, has attracted a large number of miners, and is building up an important industry. There is no doubt that good mines are to be found in British Columbia, but a large crop of wild cats has sprung up with them, which may injure the country if not checked in time.

There is a lesson to be learned from the above quotations, but first let us point out to the *Engineering and Mining Journal* the unfairness of singling out Canada as the only country where wild cats are looking for prey. Is everything straight and fair in the United States and Mexico? We may point out to the *Engineering and Mining Journal* that while undoubtedly there are some wild cat companies in Canada, the efforts of mining men, the mining press and legislators of British Columbia are being directed to the frowning down and checking of anything that savours of "wild cat" in mining affairs, and investors by using ordinary caution may avoid being nipped.

On the other hand, the fact of so influential a paper as the *Engineering and Mining Journal* publishing a warning of this kind shows the danger of allowing wild cat company promoters to play their trade in our midst. Public sentiment in British Columbia is against it, and much has already been done to check it; but the good work must be continued, and our legislators must set to work without delay to place every possible barrier in the way of fraud or dishonest attempts on the part of mere speculators. To be safe, we must be wholly clean in the eyes of the world. Here we have one of the richest of mineral countries. Will we allow a lot of mere speculators to stand in the way and bar its progress? The verdict of British Columbia, so far as we can learn, is No!

#### Notes.

WE have received from Mr. Wm. Meadows, of Kaslo, a map of a portion of the Slocan and Ainsworth camps, prepared under his own supervision, and parties interested in the section should write to him for a copy. Accompanying the map is a list of claims carefully compiled and containing valuable information about the mines. Mr. Meadows is to be congratulated on his enterprise. It is efforts of this kind which serve to make known a mining district in the proper quarters.

The Montreal Rolling Mills Company, whose advertisement appears in another column, are the largest manufacturers of iron, nails, wire, white lead, wrought iron pipe, etc., etc., in the Dominion. Their extensive works, situated on the Lachine Canal, are of the latest and most approved methods, affording ample facilities for carrying on such a large establishment in its various branches. Being incorporated since 1868, they are, from long experience and successful operation, able to undertake all orders entrusted to them, and execute them to the best advantage.

We understand the documents connected with the agreement for the sale of the Maud company's property have gone forward to New York through the company's bankers, the draft for the preliminary payment of \$5,000 being accompanied by an option to complete the purchase by payment of \$95,000 in accordance with the conditions agreed to by the holders at their recent general meeting.

**Kamloops Items.**

An offer was made by two practical American miners this week to sink a 100-foot shaft on a claim on Copper Flat below the Iron Mask; they to retain the ore raised as their remuneration. The ore on this claim is said to be worth \$40 a ton at the surface.

R. H. Lyons and George Macdonald have taken out an outfit, and in a few days will begin development on the Bonanza and Pothook, which they refused to bond last week for \$10,000. The surface ore here is purple copper.

A short option has been given on the Bonnie Etta. No cash down was asked, but a condition of the bond is that work be started on acceptance of the option and carried on continuously to an agreed depth.

F. P. Carey, of Rossland, an American mining man of experience, has been visiting the camp. That he was well satisfied with what he saw is evidenced by his action in bonding five claims for \$25,000. The claims practically surround the Lucky Strike on Coal Hill. He secured the Bluebird, an extension of the Lucky Strike, from J. H. Morrison, on a bond of \$6,000, work to be commenced before February 1st; the Neighbour, another extension of the Lucky Strike and the Champion, an adjoining claim, from M. J. McIver, H. Devery and R. Blair, on a bond of \$11,000, work to be commenced as above; the Golden Tip, from J. H. Morrison and Gilbert Smith on a \$4,000 bond, and the Phoenix from J. S. Bennet and P. A. Jenns on a \$4,000 bond. Work on these two last claims is to be commenced before the end of the month.

**Table of Stage Distances.**

	Miles.
Alberni from Nanaimo.....	57
Aldergrove from New Westminster.....	22
Alexandria from Ashcroft.....	185
Barkerville from Ashcroft.....	280
Beaver Creek from Nanaimo.....	16
Bonaparte Valley from Ashcroft.....	20
Bridge Creek from Ashcroft.....	85
Cache Creek from Ashcroft.....	6
Clayton from New Westminster.....	9
Clinton from Ashcroft.....	32
Clover Valley from New Westminster.....	13½
Coultee from Spence's Bridge.....	40
Cranbrooke from Windermere.....	87
Dog Creek from Ashcroft.....	132
Duck and Pringle from Savona.....	40
83-Mile House from Ashcroft.....	18
Elgin from New Westminster.....	12
Empire Valley from Ashcroft.....	18
Fairmont Springs from Windermere.....	15
Fort Steele from Windermere.....	75
Hanceville from Ashcroft.....	220
Hall's Prairie from New Westminster.....	19½
James Island from Victoria.....	12
Lac La Hache from Ashcroft.....	100
Lansdowne from Enderby.....	6
Lillooet from Clinton.....	47
Mamette Lake from Kamloops.....	60
Saanich from Victoria.....	16
Okanagan Mission from Enderby.....	61
Okanagan from Enderby.....	18
150-Mile House from Ashcroft.....	135
Pavilion from Ashcroft.....	15
Quesnelle from Ashcroft.....	230
Quilcher from Kamloops.....	50
Rockford from Kamloops.....	35
Rockford from Spence's Bridge.....	75
Rocky Point from Victoria.....	22
70-Mile House from Ashcroft.....	55
Soda Creek from Ashcroft.....	165
Sooke from Victoria.....	26
South Saanich from Victoria.....	13
Stanley from Ashcroft.....	265
Surrey Centre from New Westminster.....	11½
Vernon from Enderby.....	26
Wasa from Windermere.....	64

**ALFRED ALLAYNE JONES**  
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Commission. . . . .  
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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.

Companies.	No. of Shares.	Par Value.	Price.
TRAIL CREEK.			
Alberta.....	1,000,000	\$ 1 00	\$0 15
Brit. Can. Goldfields.....	2,500,000	1 00	0 25
B.C. Gold King.....	1,000,000	1 00	0 10
Beaver.....	750,000	1 00	0 07½
Big Three.....	3,500,000	1 00	0 10
Bluebird.....	600,000	1 00	0 10
Butte.....	1,000,000	1 00	0 05½
Caledonia Con.....	500,000	1 00	0 10
California.....	2,500,000	1 00	
C. & C.....	300,000	1 00	
Celtic Queen.....	750,000	1 00	0 04½
Centre Star.....	500,000	1 00	
Colonna.....	1,000,000	1 00	0 15
Commander.....	500,000	1 00	0 27
Crown Point.....	1,000,000	1 00	0 43
Deer Park.....	1,000,000	1 00	0 24
Eastern Star.....	500,000	1 00	0 20
Enterprise.....	1,000,000	1 00	0 20
Eric.....	1,000,000	1 00	0 10
Evening Star.....	1,000,000	1 00	0 16
Georgia.....	1,000,000	1 00	0 17
Getrude.....	500,000	1 00	0 15
Golden Drip.....	500,000	1 00	0 12½
Golden Queen.....	1,000,000	1 00	
Great Western.....	1,000,000	1 00	0 17
Hattie Brown.....	1,000,000	1 00	0 07½
Helen.....	600,000	1 00	0 06
High Ore.....	500,000	1 00	0 07½
Homestake.....	1,000,000	1 00	0 17
Idaho.....	500,000	1 00	
Imperial.....	1,000,000	1 00	0 10
Iron Horse.....	1,000,000	1 00	0 20
Iron Mask.....	500,000	1 00	0 55
I.X.L.....	1,000,000	1 00	0 15
Josie.....	700,000	1 00	0 55
Jumbo.....	500,000	1 00	0 60
Knight Templar.....	500,000	1 00	0 07
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 17½
Mayflower.....	1,000,000	1 00	0 14½
Monita.....	750,000	1 00	0 25
Monte Cristo.....	1,000,000	1 00	0 17
Morning Star.....	1,000,000	1 00	0 12½
Nest Egg.....	500,000	1 00	0 10
Northern Belle.....	1,000,000	1 00	0 15
Novelty.....	1,000,000	1 00	0 10
O. K.....	1,000,000	1 00	0 29
Palo Alto.....	1,000,000	1 00	0 10
Phoenix.....	500,000	1 00	0 15
Poorman.....	500,000	1 00	0 08½
R. E. Lee.....	2,000,000	1 00	0 15
Red Mountain View.....	1,000,000	1 00	0 12
Rossland, Red Mountain.....	1,000,000	1 00	0 25
St. Elmo.....	1,000,000	1 00	0 12½
St. Paul.....	1,000,000	1 00	0 12½
Silverine.....	500,000	1 00	0 11
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 19
War Eagle.....	500,000	1 00	1 55
West Le Roi.....	500,000	1 00	0 25
White Bear.....	2,000,000	1 00	
AINSWORTH.			
Dellie.....	750,000	1 00	0 12½
BOUNDARY.			
Old Ironsides.....	1,000,000	1 00	0 11
CAMP MCKINNEY.			
Cariboo.....	800,000	1 00	0 47
NELSON.			
Hall Mines.....	300,000	£1	
REVELSTOKE.			
Orphan Boy.....	700,000	1 00	0 15
SLOCAN.			
Alamo.....	500,000	1 00	
Cumberland.....	50,000	10 00	
Grey Eagle.....	750,000	1 00	
Dardanelles.....	1,000,000	1 00	
Idler.....	1,000,000	1 00	0 07½
Kootenay-Columbia.....	400	100 00	
London.....	600,000	25	0 25
Minnesota.....	1,000,000	1 00	

Companies.	No. of Shares.	Par Value.	Price.
Noble Five Con.....	1,200,000	1 00	0 60
Rambler Con.....	1,000,000	1 00	0 35
Reco.....	1,000,000	1 00	2 40
Slocan Star.....	1,000,000	50	
Sunshine.....	50,000	10 00	
Wonderful.....	1,000,000	1 00	0 12
TEXADA ISLAND.			
Van Anda.....	5,000,000	1 00	0 11
Victoria-Texada.....	600,000	0 25	0 25
ALBERNI DISTRICT.			
Consolidated Alberni.....	1,000,000	1 00	0 37
Mineral Creek.....	500,000	1 00	0 05 1/2
Mineral Hill.....	750,000	1 00	
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 50

† Dividends paid to date are as follows: Le Roi, \$250,000; War Eagle, \$187,000; Cariboo, \$112,000; Slocan Star, \$300,000. Alamo, Cumberland, Reco and Noble Five have also paid dividends.

### Agents.

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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.....	" "

Mining and Metallurgical Journal.....	Los Angeles, Cal
Miner and Electrician.....	Spokane, Wash
Mining.....	" "
Spokesman Review.....	" "
Western Mining World.....	Butte, Montana
Mine, Quarry and Metallurgical Journal.....	Chicago, Ill
Engineering and Mining Journal.....	New York
Mining Journal.....	London, Eng
Shareholder.....	" "
The Colonies and India.....	" "
Canadian Gazette.....	" "
Australian Mining Standard.....	Sydney, N.S.W
Standard and Diggers' News.....	Johannesburg, South Africa
Canadian Engineer.....	Toronto, Ont
Electrical News.....	" "
Industrial Canada.....	" "
Canada Lumberman.....	" "
Monetary Times.....	" "
Toronto World.....	" "
Toronto Globe.....	" "
Mining Review.....	Ottawa
Mining News.....	Montreal
Edmonton Herald.....	Edmonton, N.W.T
Rosslander.....	Rossland, B.C
Rossland Miner.....	" "
Weekly Record.....	" "
Kootenaiian.....	Kaslo, "
Miner.....	Nelson, "
Trail Creek News.....	Trail, "
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, "

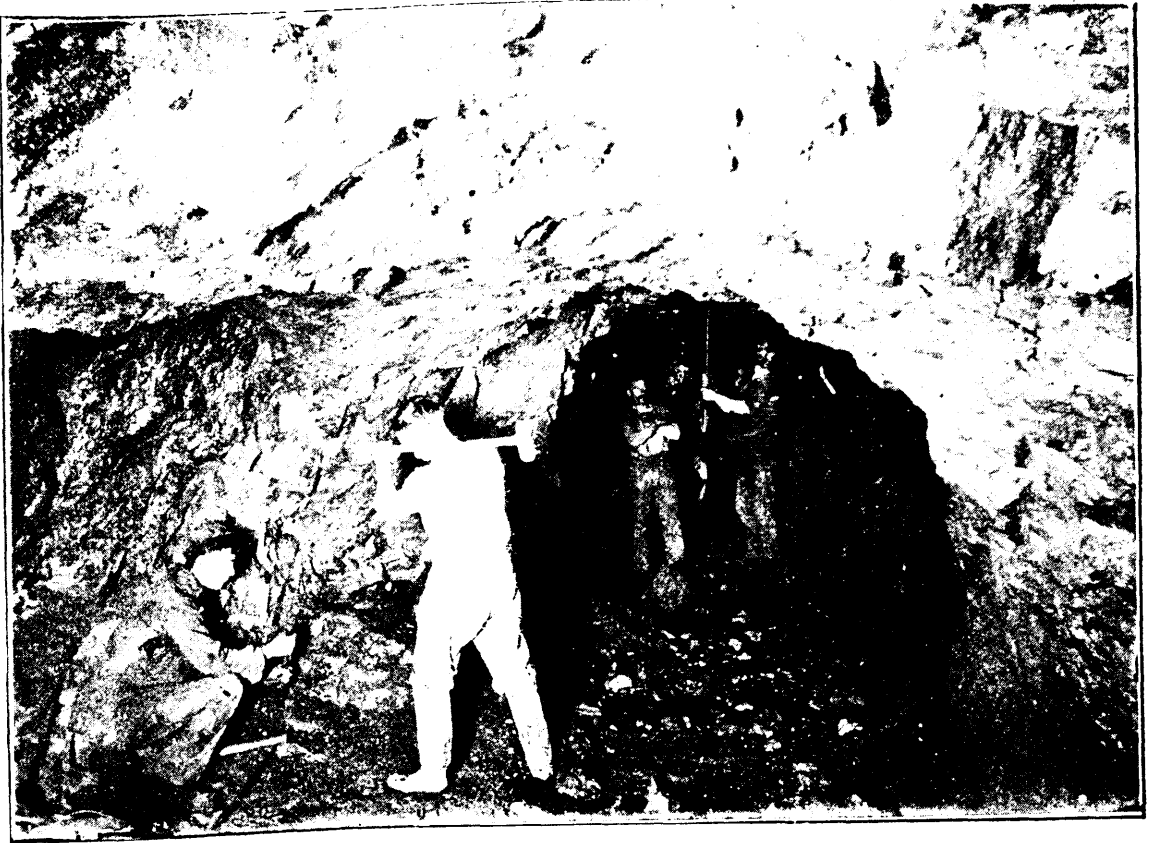
### Catalogues of Mining Machinery and Supplies.

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

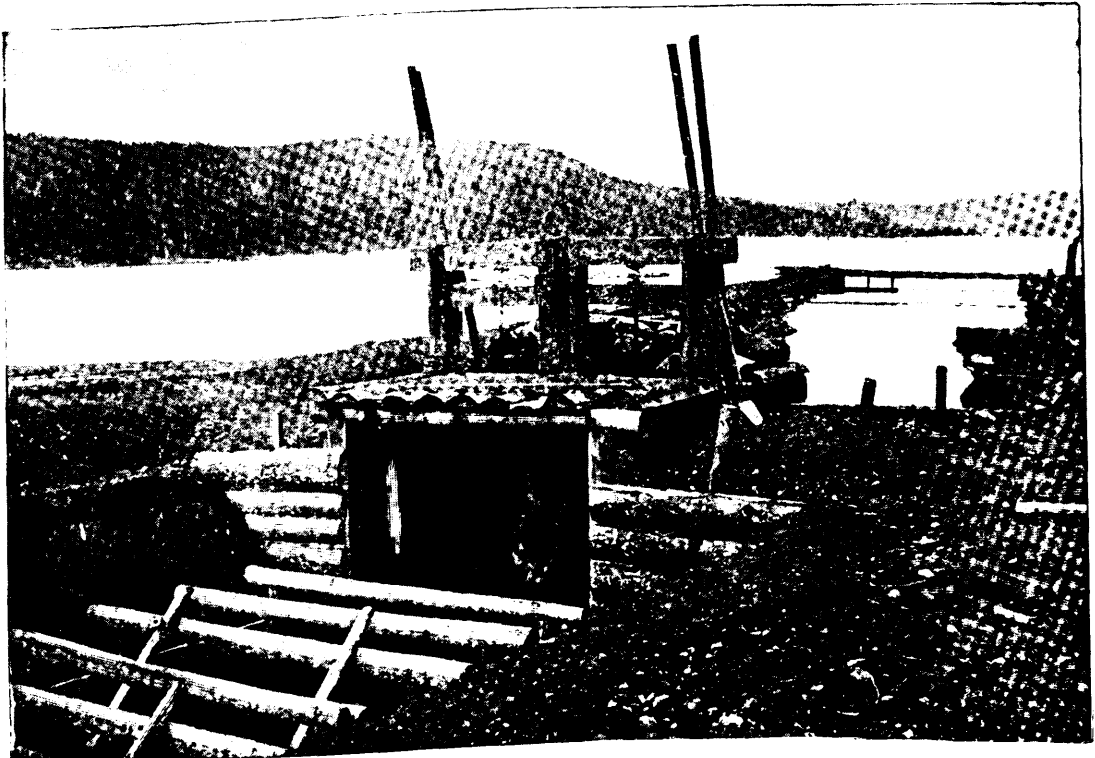
Joshua Hendy, Machine Works, San Francisco, Cal. Mining machinery of all kinds.
The Giant Powder Co., San Francisco, Cal. Explosives.
The Pelton Water Wheel Co., San Francisco, Cal. Water wheels.
California Wire Works, San Francisco, Cal. Hallidie rope-way, etc.
John Taylor & Co., San Francisco, Cal. Mine and mill supplies, chemicals, etc.
Canadian Rand Drill Co., Montreal and Rossland. Mining machinery.
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### Province of British Columbia.

Minister of Mines—Hon. Col. James Baker.
Provincial Mineralogist—W. A. Carlyle.
Public Assayer—H. Carmichael.



TUNNEL, CITY OF SPOKANE MINE, B. C. LAND, B. C.



CARIBOO HYDRAULIC MINING CO. HEAD GATE AT POLLEY'S LAKE, B. C.

**Provincial Government Agencies.**

Alberni—Thos. Fletcher, Alberni.  
 Cariboo—J. Bowron, Barkerville.  
 Cassiar—James Porter, P.O. Laketon.  
 Cowichan—H. O. Wellburn, Duncan.  
 Comox—W. B. Anderson, Comox.  
 Fort Simpson—J. Flewin.  
 Kamloops—G. C. Tunstall, Kamloops.  
 Kootenay East—J. F. Armstrong, Donald.  
 Kootenay West—Northern portion, J. D. Graham, Revelstoke.  
 Kootenay West—Southern portion, N. Fitzstubbis, Nelson.  
 Lillooet—F. Soues, Clinton.  
 Nanaimo—M. Bray, Nanaimo.  
 New Westminster—D. Robson, New Westminster.  
 Nicola—John Clapperton, Nicola Lake.  
 Okanagan—L. Norris, Vernon.  
 Quesnelle—Wm. Stephenson, Quesnelle Forks.  
 Yale—W. Dodd, Yale.

**Mining Recorders.**

DISTRICT.	OFFICE.
NANAIMO.—M. Bray	Nanaimo
NEW WESTMINSTER.—D. Robson	New Westminster
EAST KOOTENAY.—J. Stirret	Donald
F. C. Lang	Golden
G. Goldie	Windermere
C. M. Edwards	Fort Steele
M. Phillips	Tobacco Plains
WEST KOOTENAY.—J. D. Graham	Revelstoke
Cory Menhenick	Lardeau
A. Sproat	New Denver
John Keen	Kaslo
J. H. Rashdall	Nelson
J. Kirkup	Rossland
J. C. Rykert	Rykert's
Thomas Taylor	Trout Lake
Walter Scott	Illecillewae
F. G. Fauquier	Nakusp
CARIBOO.—W. Stephenson	Quesnelle Forks
J. Bowron	Barkerville
YALE.—W. Dodd	Yale
L. Norris	Vernon
C. A. R. Lambly	Osoyoos
W. McMynn	Midway
H. Hunter	Granite Creek
G. C. Tunstall	Kamloops
LILLOOET.—C. A. Phair	Lillooet
F. Soues	Olinton
CASSIAR.—Ezra Evans	Manson Creek Omineca
Jas. Porter	Laketon
ALBERNI.—Thos. Fletcher	Alberni
VICTORIA.—W. S. Gore	Victoria

**Gold Commissioners.**

For the Province.—W. S. Gore, Victoria.  
 Alberni.—Thos. Fletcher, Alberni.  
 Cariboo.—John Bowron, Richfield.  
 Cassiar District.—James Porter, Laketon, Cassiar.  
 Lillooet District.—Frederick Soues, Clinton.  
 Nanaimo—M. Bray, Nanaimo.  
 East Kootenay District.—J. F. Armstrong, Donald.  
 West Kootenay District.—N. Fitzstubbis, Nelson.  
 West Kootenay District.—J. D. Graham, Revelstoke.  
 Yale District.—Chas. Lambly, Osoyoos; G. C. Tunstall, Kamloops.

**Assayers in the Province of British Columbia.**

Public Assayer, H. Carmichael, Victoria.  
 W. Pellew Harvey, Vancouver.  
 J. A. MacFarlane, Vancouver.  
 Frank Dick, assayer, Brandon, B.C.  
 Robbins & Long, Rossland.  
 C. M. Wilson, Sandon.  
 Hill & Co., Sandon.  
 Wm. J. Trethewey, Kaslo.  
 Howard West, New Denver.  
 Boundary Creek Engineering & Assaying Co., Greenwood City, B.C.

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Alberni.—Steamboat communication with Victoria and by stage with Nanaimo.  
 Barclay Sound.—Forty miles from Alberni; communication by steamer with Victoria.

**CARIBOO.**

Barkerville.—Two hundred and eighty-five miles from Ashcroft; stage from Ashcroft. See stage lines.  
 Bonaparte.—Six miles from Ashcroft; stage from Ashcroft.  
 Big Bar.—Stage from Ashcroft.  
 Clinton.—Thirty-two miles from Ashcroft station; stage from Ashcroft.  
 Fort George.—Nearest post office, Quesnelle.  
 Horsely.—Nearest post office, 150 Mile House; stage from Ashcroft; change at 150-Mile House.  
 Lac La Hache.—One hundred miles from Ashcroft on stage line from Ashcroft to Barkerville.  
 Lillooet.—Weekly stage from Ashcroft.  
 Lightning Creek.—Between Quesnelle and Barkerville, by stage to Stanley.  
 One Hundred Mile House.—Stage from Ashcroft.  
 One Hundred and Fifty Mile House.—Stage from Ashcroft.  
 Quesnelle.—Two hundred and twenty-five miles from Ashcroft; stage from Ashcroft.  
 Quesnelle Forks.—Stage road from Ashcroft.  
 Soda Creek.—Stage from Ashcroft.  
 Stanley.—Stage from Ashcroft.  
 Slough Creek.—Stage from Ashcroft.  
 Talla Lake.—Stage from Ashcroft, changing at Soda Creek.  
 Willow River.—Stage from Ashcroft.  
 Williams Creek.—At Barkerville.  
 CASSIAR.—Drase Creek.—McDane Creek.—  
 COAL CENTRES.—Crow's Nest Pass.—  
 Nanaimo.—From Victoria, all rail, 73 miles. Steamer from Vancouver.  
 Union.—  
 Wellington.—From Victoria, all rail, 83 miles. Steamer and rail from Vancouver.

**EAST KOOTENAY.**

Cranbrook.—Nearest railway station, Golden. Communication by steamer from Golden to Windermere, thence by stage.  
 Fairmont Springs.—Nearest railway station, Golden. Steamer to Windermere, thence by stage.  
 Fort Steele.—Steamer and road from Golden. Steamer from Jennings, Montana, G.N.R.R.  
 Galbraith Ferry.—Steamer from Golden. Stage in winter.  
 Galena.—Nearest railway station, Golden; thence by steamer. Stage in winter.  
 Golden.—On the main line C.P.R., 475 miles from Vancouver.  
 Moyie River.—From Fort Steele, 25 miles.  
 McMurdo District.—Steamer and trail from Golden, 35 miles.  
 Perry Creek.—Steamer from Golden to Fort Steele, thence by road.  
 St. Mary's.—From Fort Steele, 20 miles trail.  
 Thunder Hill.—One hundred and fifteen miles from Golden. Steamer in summer, stage in winter.  
 Windermere.—Steamer from Golden. Stage in winter.  
 Wild Horse Creek.—From Fort Steele, two miles trail to Kootenay River.

**WEST KOOTENAY.**

Ainsworth.—Twenty-eight miles from Nelson and twelve from Kaslo. Steamer communication.  
 Albert Canyon.—A station on the C.P.R., 400 miles from Vancouver.  
 Big Bend District.—Fifty miles from Revelstoke by trail and boat.  
 Cariboo Creek.—Steamer from Nakusp, ten miles.  
 Fort Sheppard.—Nearest post office, Trail Creek; communication by rail and steamer from Revelstoke.  
 Illecillewae.—On the main line C.P.R., 407 miles from Vancouver.  
 Kaslo City.—Thirty-five miles from Nelson; communication by steamer.  
 Lardeau City.—Forty miles from Revelstoke; communication by steamer.  
 Lardo-Duncan.—Steamer from Kaslo to head of lake, thence river trail 40 miles.  
 Nakusp.—North-west terminus of Nakusp & Slocan Railway, 50 miles from Revelstoke. Steamer communication from Revelstoke tri-weekly.  
 Nelson.—Thirty miles from Robson; is the eastern terminus of the Columbia & Kootenay Railway, and also on the Spokane & Northern Railroad. Steamer from Revelstoke.  
 New Denver.—Steamer from Revelstoke and rail from Nakusp; all rail from Kaslo. Distant from Revelstoke, 78 miles, from Kaslo, 28 miles.  
 Pilot Bay.—Eighteen miles from Kaslo, thence by steamer.  
 Revelstoke.—On main line C.P.R., 379 miles from Vancouver.



*Rossland*.—Seven miles from Trail Creek by road or stage.  
*Sproat's Landing*.—One hundred and sixty miles from Revelstoke, and one and a half miles from Robson.

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

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

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

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

*Trail*.—Rail from Spokane to Northport, thence steamer. All steamer from Revelstoke, or steamer and rail *via* Nelson; from Revelstoke, 150 miles; from Nelson, 50 miles.

*Trout Lake City*.—Steamer and stage from Revelstoke.

LILLOOET.—*Br dge River, Cayuse Creek, Fraser River.*

#### YALE.

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

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

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

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

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

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

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

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

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

Mail stage leaves Penticton for Midway every Thursday morning.

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[L. S.]

E. DEWDNEY.

CANADA.

PROVINCE OF BRITISH COLUMBIA.

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

To Our faithful the Members elected to serve in the Legislative Assembly of Our Province of British Columbia at Our City of Victoria—GREETING:

D. M. EBERTS, } WHEREAS WE are desirous and re-  
Attorney-General.) solved, as soon as may be, to meet  
Our people of Our Province of British Columbia, and to have  
their advice in Our Legislature:

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

IN TESTIMONY WHEREOF, We have caused these Our Letters to be made Patent, and the Great Seal of the said Province to be hereunto affixed: WITNESS, the Honourable EDGAR DEWDNEY, Lieutenant-Governor of Our said Province of British Columbia, in Our City of Victoria, in Our said Province, this twenty-ninth day of December, in the year of Our Lord one thousand eight hundred and ninety-six, and in the sixtieth year of Our Reign.

By Command.

JAMES BAKER,

Provincial Secretary.

HENRY O'HARA.

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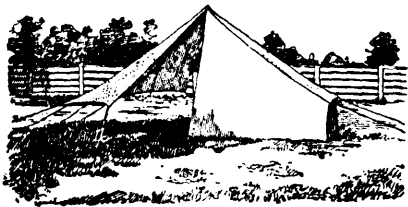
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Canadian Pacific Navigation Co., Ltd.

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 PLUMBER 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 PLUMBER 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, JOHN IRVING,  
General Agent. Manager.

UNION STEAMSHIP CO., B.C., LD.

—HEAD OFFICE AND WHARF—  
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NORTHERN SETTLEMENTS—SS. Comox sails from Company's wharf every Tuesday at 9 a.m. for Bowen Island, Howe Sound, Sechart, Jervis Inlet, Froeck, Texada Island, Lund, Hernando Island, Cortez Island, Read Island, Valdez Island, Shoal Bay, Phillips Arm, Fredrick 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.

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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 " " " " " " "  
Tues. Thurs. Sat. 9 a.m. Ar ROBSON De 8.30 p.m. Tues. Thurs. Sat.  
" " " 12 noon De " " " " " " "  
" " " 2 p.m. Ar TRAIL De 4.30 p.m. " " "

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

TRAIL-NORTHPORT ROUTE, STEAMER "TRAIL."

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

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

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

Columbia & Western Railway Co.

Time Table, in effect July 1st, 1896.

No. 2 Passenger, daily except Sunday; leaves Rossland 7 a.m., arrives Trail 7.45 a.m.  
No. 4 Passenger, daily; leaves Rossland 3 p.m., arrives Trail 4 p.m.  
No. 6 Passenger, Sunday only; leaves Rossland 8.30 a.m., arrives Trail 9.15 a.m.  
No. 3 Passenger, daily except Sunday; leaves Trail 10.30 a.m., arrives Rossland 11.30 a.m.  
No. 5 Passenger, Sunday only; leaves Trail 11 a.m., arrives Rossland 11.45 a.m.  
No. 1 Passenger, daily; leaves Trail 5 p.m., arrives Rossland 5.45 p.m.

All trains run on Pacific standard time. Connections at Trail with Columbia River & Kootenay Steam Navigation Co.'s steamboats, Spokane Falls & Northern Ry. via Northport, Canadian Pacific Railway via Revelstoke

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 "	Sproule's	" 2.15 "
" 9.51 "	Whitewater	" 2.00 "
" 10.03 "	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 "

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

SPOKANE FALLS & NORTHERN RAILWAY.  
NELSON & FORT SHEPPARD RAILWAY.

Daily (except Sunday) between Spokane and Nelson, B.C.  
Leave 8.40 a.m. Nelson. Arrive 5.00 p.m.  
" 7.00 a.m. Spokane. " 6.15 p.m.  
Passengers for Rossland and the Trail Creek mines connect at Northport with stages and steamer daily.  
Close connection at Nelson with steamers for Kaslo and all Kootenay Lake points.  
Passengers for Kettle River and Boundary Creek connect at Marcus with stage daily.

THOS. HORNBY, Pioneer Stables, KAMLOOPS, B.C.

Freight, Express and Teaming of every description promptly attended to. Dealer in Coal and Wood.  
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