

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/  
Couverture de couleur

Coloured pages/  
Pages de couleur

Covers damaged/  
Couverture endommagée

Pages damaged/  
Pages endommagées

Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées

Cover title missing/  
Le titre de couverture manque

Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées

Coloured maps/  
Cartes géographiques en couleur

Pages detached/  
Pages détachées

Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/  
Transparence

Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur

Quality of print varies/  
Qualité inégale de l'impression

Bound with other material/  
Relié avec d'autres documents

Continuous pagination/  
Pagination continue

Tight binding may cause shadows or distortion along interior margin/  
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/  
Comprend un (des) index

Title on header taken from: /  
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/  
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/  
Page de titre de la livraison

Caption of issue/  
Titre de départ de la livraison

Masthead/  
Générique (périodiques) de la livraison

Additional comments: /  
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

# THE B. C. MINING EXCHANGE And Investors' Guide.

VOL. I—VANCOUVER, JUNE, 1899—NO. 6

## THE ATTORNEY-GENERAL ON FREE MINERS' LICENSES.

"The 'Placer Mining Act Further Amendment Act' was carefully drawn and if I had to draw it again I would not change a word of it. Licenses issued before the act comes into force are unquestionably good for the term for which they were taken out, and those who have taken out extra licenses in the fear that they might have lost their properties have just been contributing so much to the revenue gratuitously. There is a saving clause in the act, but even without that clause there would be no reason to fear that the licenses would have been rendered invalid. The act only applies to licenses issued after the act came into operation. This should be clear to any one who reads it over. For my own part I may say that I am holding some property on a license taken out in February last. It has not been renewed, nor will it be until the proper time, and I'd like to see someone jump my claim."

This is conclusive the Attorney-General comes out straight. Had this been known prior to 31st May the Treasury would have been out a few thousand dollars and the Free Miner have saved his shekels, as also his license twelve months from date of issue.

## THE IMPERIAL LIMITED.

This is a fit title for the new service across the continent, which the Canadian Pacific Railway are about to inaugurate, over the steel band which is undoubtedly, for speed, comfort, and courtesy, the Imperial Trans-continental Highway, binding and bringing in touch all portions of our glorious Empire, facilitating our commerce and expediting our business. The new service will average 40 miles an hour across the continent and stoppages will of necessity be curtailed. Floreat Canada.

We are glad to note that British Columbia mineral properties of assured value are at last attracting the attention of financial men of known mining repute in England and the East. "Wild catting" has produced its usual disastrous effects and for a time British Columbia has been looked upon askance. Much as we regret that dishonest and unscrupulous manipulators have enriched themselves at the expense of a too confiding public and the detriment of the Province, it must be admitted that these very questionable propositions were supported by the mining press here, as also by mining men of supposed reputation, in touch with financial institutions and individuals across the Atlantic. We happen to know these facts, and while deploring cause and effect in this connection, and admitting that dirty water becomes only the dirtier in the stirring; yet, it becomes a duty to the public to point out and expose the cause which has brought about such conditions, more especially when we know that the country has been kept back by a mercenary press, who had done their level best to blackmail and

denounce some of the most influential corporations and individuals who would have spent large sums in the development of our mineral properties. Such short sighted methods as those adopted by certain mining and financial men here in the past, in opposing certain interests for the reason that they conflicted with their own particular set, can only, as it did, meet ultimate defeat. However, every dog has his day, and these men have had theirs. If we have occasion to publish an expose of the conduct of certain individuals in connection with such mining matters and known disrepute, we shall not hesitate to do so. "Wild catting" has, however, like a thunder storm, cleared the air and we shall have better conditions prevailing.

If we cannot stand on our merits we deserve to fall. Our mineral deposits, when developed properly, worked and treated on practical lines by practical men, have conclusively proved the richness of our mineral deposits. Lack of capital has retarded our progress in developed mines, which, had such development been carried out, would have given a further proof of our mineral wealth.

## AS AN INVESTMENT FIELD.

### BRITISH COLUMBIA MINING CENTRES PRESENT AND FUTURE.

The Province of British Columbia has many features to recommend it as a field for legitimate investment in mining ventures. It is possibly the best field at present offered by the known world, and especially is this true in so far as the smaller class of investors are concerned, as the country affords the man of small capital the opportunity to invest it in what may eventually prove to be capable of taking rank as one of the great mines which are to-day beginning, and only beginning, to make British Columbia known as a great mining camp.

There are numbers of discoveries of much promise in the hands of men of mining experience and good character, but they are men without capital. Here, then, lies the opportunity for the man of small capital seeking to invest where, with little risk, he may perhaps receive returns out of all proportion to the amount invested.

Men of good stamina, having say £500 to £1,000, could make no mistake in coming to this country and becoming partners with claim owners, who, willing and able to work their properties up to the stage where they can be called productive prospects, yet lack the money necessary to buy powder and supplies. The above amount of money will do a great deal when the owners are themselves capable of supplementing the cash capital by the use of their own muscle and knowledge.

All the way from the Eastern boundary of the Province to the city of Vancouver, and from Vancouver to the Alaska boundary, are new centres of mining possibilities, where capital, in a general sense,

has not yet been provided and where, until some one makes a beginning by opening up one or more prospects, nothing will be accomplished in these centres, a man of sense can secure holdings for a few hundred dollars which are intrinsically equally as valuable deposits of gold, silver or copper, as those now held at six or seven figures in the older and known districts. In many cases the prospectors are well able to judge these matters, are well aware of the facts, and also alive to the remedy necessary to place them in active service, and would welcome the man with the little but essential ready money. They would be quite willing to give him the softest side of the undertaking and form a mutually beneficial combination of forces if given the chance.

What is required is that these facts should become known to the many men who have the small capital required, and would be willing to take advantage of the situation, if they were once able to obtain an intelligent knowledge of how to go about it to bring the desired result.

Given the health and ability to engage in hard work, the proper way for one possessed of the above sum, who wishes to increase same faster than can be done in commercial life, is to come out to this country and settle down, temporarily, in one of the well-known small settlements in any of the newer districts, and carefully consider the various "propositions" which are certain to be laid before him without his asking. Then, having satisfied himself as to the integrity of the proposer, the probable value, within a certain (not too long) time, of the property in that section and the amount of development necessary, with its probable cost, "go in and win."

The returns to be made in this way, in the course of two or three years of persistent economical work, are certain and the percentage of profit very much the greatest of any known business investment.

The dangers are: the ignorance of real values, or want of knowledge of many of the men who follow this life; the want of care in laying out the work to be done, and the consequent waste of time and money; the want of systematic development and persistence in completing the plan of work laid out.

Given proper attention to these matters of detail and the reward to be earned becomes certain:—

First thing to be settled is the existence of a vein. Second is the positive proof that the vein does contain ore of value, i.e., ore that will pay to ship or treat in that particular locality.

Third, be certain that the work laid out will accomplish the object sought, which is to demonstrate that a mine can be made there, and not the actual making of the mine. Once it can be shown that a mine exists the property becomes an available asset, which can be disposed of to advantage.

A comparatively small amount of money will generally go a long way towards this point under the above conditions, and a few hundred feet of tunnelling will often enable a sale to be made, of a property which, without this work, would be useless.

### A RICH DISCOVERY.

A Mr. Halligan, of Chicago, has become the possessor of £8,000,000 through an exceptionally rich discovery of copper in several hitherto unproductive mines. Just before the good news reached him he had to pawn his watch to procure a meal.

## SWANSEA COPPER SMELTING.

[An interesting article which will give our readers some slight idea of the Welsh process of Copper Smelting, as practised by Messrs. Vivian & Sons, Hafod Copper Works, Swansea, South Wales. Written for the B. C. MINING EXCHANGE by J. O'SULLIVAN, F.C.S.]

### CLASSIFICATION OF THE ORES, ETC., TREATED.

These vary both in percentage of metal and in composition, according as the supplies of them arrive from various countries. Of all it may be said that they are sure to be accompanied by a large amount of gangue, that is, non-metallic mineral (vein stone), which is commonly siliceous in composition. Five classes are, however, distinguished by the smelter, which must be either treated differently or carefully mixed.

1st Class—Poor ores, containing a little copper pyrites and a considerable quantity of iron pyrites; in these the percentage of iron and sulphur (from the two minerals) is of course large; copper being present only to the extent of from  $1\frac{1}{2}$  to 9 per cent.; for example: Norwegian pyrites,  $1\frac{1}{2}$  to  $3\frac{1}{2}$  per cent.; Rio Tinto pyrites, 3 to 6 per cent.; Seville ore, 4 to 6 per cent.; Betts' Cove (Newfoundland) ore, 7 to 9 per cent.

2nd Class—Sulphides, carrying from 10 to 18 per cent. copper, such as New Quebrada ore, 10 to 12 per cent.; Copiapo ore, 15 to 17 per cent.; Libiola ore, 12 to 18 per cent.

3rd Class—Richer sulphide ores, Chalcopyrite, Bornite, etc., running from 20 to 50 per cent. copper; for example: Chili ore, 20 to 28 per cent.; Namaqua ore, 30 to 35 per cent.; "Cape" ore (peacock), 35 to 45 per cent.; and, formerly, Anaconda ore, 40 to 50 per cent.

4th Class—Oxides and carbonates of copper (cuprite, melaconite and malachite) with a little of the sulphides, silicates, copper precipitates, native copper ores, i.e., ores carrying native copper (metallic copper) and copper barilla (copper sand).

5th Class—A product of ores which have already undergone a metallurgical process abroad (fusion), and constitutes a regulus or matte, generally rich in copper, yielding from 45 to 60 per cent., and sometimes 72 per cent. of the metal; for example: Chili regulus, 45 to 48 per cent.; Columbian matte, 47 to 49 per cent.; Montana matte, 53 to 60 per cent.; Boleo matte, 60 to 62 per cent.; Anaconda matte, from 62 to 72 per cent. copper.

Large lots of Chili blocks (copper), assaying from 97 to 98 per cent. copper, are also melted and refined at these works. Also, rich argentiferous and auriferous Anaconda furnace-bottoms have been treated from time to time at Messrs. Vivian & Sons' Silver and Gold Works; as also Cobar copper, carrying 3 to 4 oz. gold, and 15 oz. silver per ton.

### First operation—

#### CALCINATION OF THE ORE.

Note: This operation, the object of which is to expel the large excess of sulphur in the cuprous pyrites, and to oxidize the sulphide of iron into oxide of iron, is dispensed with in the case of the richer sulphide ores of the 2nd and 3rd classes.

The calcination is conducted in reverberatory furnaces, called "Calciners," at a very low temperature with free access of air. The charge, three to four tons, is introduced into the furnace by means of a hopper on the roof. After about two hours, it is turned over by paddles; this is repeated from time to time during

the calcination, which is completed in twelve hours, when the charge is withdrawn. The sulphur dioxide produced in this case escapes into the atmosphere; but the poorer "cupreous sulphur" ores of the 1st class are calcined in the automatic calciners of Herr Gerstenhoffer called patent calciners, when the sulphur dioxide formed is carried by the air currents into the sulphuric acid chamber, and thus used for the manufacture of that acid.

#### Second operation—

##### MELTING OF THE CALCINED ORE, ETC.

The charge, 42 to 46 cwts., consists of a mixture of the calcined ore and a proportion of the sulphide ores of the 2nd class, that do not need calcining, and metal furnace slag ("sharp slag"), containing about 3 per cent. copper.

It is melted in a reverberatory furnace called "ore furnace" for about six hours, whereby a regulus, or matte, called "coarse metal" or "ore metal," is produced, carrying from 30 to 35 per cent. copper: and a slag ("ore furnace slag"), composed of silicate of iron and earthy bases, and containing from one to three-tenths of one per cent. of copper.

The metal thus produced should not contain more than 35 per cent. copper, since that would mean a small proportion of sulphide of iron (Fe S), which would be likely to have oxidized copper in the slag; and not less than 30 per cent., if possible, since that would not be economical.

#### Third operation—

##### CALCINATION OF THE COARSE METAL.

The charge, four tons of the crushed metal, is calcined for from 24 to 36 hours at a low heat in a reverberatory calciner. The object of this is to oxidize the sulphur combined with iron, and the iron itself, leaving cuprous sulphide (Cu<sub>2</sub>S) untouched; this point, however, may not be reached, or may be overreached in actual practice. Some sulphate of copper (Cu SO<sub>4</sub>) is unavoidably formed in this operation. If the calcination be very imperfect it can be corrected in the 4th operation.

#### Fourth operation—

##### MELTING OF THE CALCINED COARSE METAL.

In the metal (reverberatory) furnace, mixed with certain proportions of rich ores of the 2nd, 3rd and 4th classes, rich copper slag from the 5th and 6th operations (roaster and refinery slag), copper scale and siliceous matter, called "cobbling," i.e., old pulverized bricks from furnaces (foul).

Result—A rich metal (matte) whose copper per centage varies according to circumstances from, say, 55 to 80 per cent. These products are classified into red, blue, white and pimple metal; red, from 55 to 65, blue, from 65 to 72, white, from 72 to 78, and pimple, from 78 to 80 per cent. copper. Of course there may be every grade of quality between these estimates.

The percentages can be judged, however, by a practised eye to within 1 or 2 per cent. The slag from this process contains about 3 per cent. copper as silicate of copper. It is also rich in oxide of iron and is charged into the "ore furnace," as mentioned above, when the oxide of iron acts as a flux and the silicate of copper is reduced to sulphide of copper.

#### Fifth operation—

##### ROASTING.

The pigs of fine metal, red, blue, white or pimple, as the case may be, are piled up loosely in the roaster

furnace and heated with a gradually increasing heat, the current of air rushing through at the same time. The metal, as it melts and drips, called "sweating down," passes through the current of air and is oxidized; sulphur to sulphur dioxide (S O<sub>2</sub>); copper to cuprous oxide (Cu<sub>2</sub>O); the oxidation occurs only on the surface of the drips, so when the whole charge is melted we have really a mixture of cuprous sulphide and cuprous oxide, when the reaction occurs— $Cu_2S + 2Cu_2O = 6Cu + SO_2$ , the gas, S O<sub>2</sub>, escaping through the melted charge, causing ebullition, thus bringing further quantities of Cu<sub>2</sub>S in contact with the air, and meanwhile metallic copper collects at the bottom. Metallic copper, however, is able to dissolve limited quantities of Cu<sub>2</sub>S and, therefore, when the whole charge becomes metallic the same reaction continues, but slower. If tapped at this point the reaction occurring in the pig before setting produces pimples on the surface, and is known as "pimple copper." If, however, it is allowed to work a little longer in the furnace less Cu<sub>2</sub>S will be contained when tapped. Now the reaction, occurring so slowly, will not produce pimples, but raise the chilled crust into blisters; such copper is known as "blister copper."

#### Sixth operation—

##### REFINING.

About 10 tons of either pimple or blister copper is charged into the refinery furnace and sweated down; this oxidizes the large exposed surface. When melted down oxidation is continued by flapping, i.e., beating the copper with a rabble-like tool, so as to expose fresh surfaces of the copper to the air. The object of this oxidation is to oxidize and slag off impurities, such as iron, arsenic, antimony, phosphorus, and sulphur as a gas (S O<sub>2</sub>). But in separating these the copper is oxidized, as well, to cuprous oxide. The bath of metallic copper dissolving it as produced; by and by the point may be reached when metallic copper will dissolve no more cuprous oxide; further oxidation of copper would slag copper itself. This pitch of the copper is called the "dry." A ladleful is taken out and allowed to set, when, if it be "dry," a depression or furrow on the surface is formed; it is brittle and has a brick-red fine granular fracture. The slag is now removed from the surface and anthracite coal is thrown upon the charge, and a green pole is plunged beneath the surface. The water of the pole produces steam, causing great disturbance, thus bringing fresh surfaces to the action of the carbon of the anthracite as well as the pole itself; this oxide of copper is reduced to metallic copper ( $2Cu_2O + C = 4Cu + CO_2$ ).

At the Hafod Refinery, however, instead of anthracite, short pieces of green wood, about 3-foot lengths, are invariably thrown upon the charge of molten copper to prevent further oxidation.

In reality the impurities are not perfectly removed. The copper, on being perfectly reduced, is not "tough" and malleable in consequence; by an excess of poling this condition is brought about, the copper is then said to be "overpoled."

The fracture of such copper would appear brass-yellow in color and coarsely fibrous.

The presence of certain quantities of cuprous oxide corrects the effect of these impurities, so the poling is carried only to that point where sufficient oxide of copper is present to balance the iron, arsenic, etc. This being now called the "tough pitch."

If that pitch should be passed, it is restored by giving a little air. The refiner decides by taking a "test,"

a small ladleful, which he cools and hammers, then breaking it in a vice. The fracture should be finely fibrous, silky and pale salmon color.

There are three qualities of commercial copper, viz.: "Tough pitch," as produced above; "best select," a pure copper for best brasses; and "tile," a very impure copper, for hard brass.

The "best select" is made from a selected regulus, made in this way: ordinary white metal is partially roasted until some metallic copper is formed as a bottom under the regulus, copper having a greater affinity for sulphur than the other metals present; the metallic copper will contain most of these, leaving the regulus exceptionally pure; this, being stripped off from the bottom, is roasted by itself to "blister copper," which, when refined, is "best select." The impure copper, being refined, makes "tile" copper.

In addition to their extensive reverberatory copper smelting plant, Messrs. Vivian & Sons have had for many years several water-jacket furnaces in full blast, producing copper matte carrying from 50 to 60 per cent. of that metal.

This matte is crushed fine and six-ton charges of it calcined in the modern automatic "revolving" calciner,

in which a most perfect calcination is effected in about twelve hours. The calcined product is subsequently reduced to metallic copper by a special treatment. They have also in operation two of Manhè's converters in which very poor "purchase" matte, carrying 12 to 15 per cent. copper, is blown into white metal of 75 per cent. copper in about an hour; the color of the flame issuing from the converter indicating the desired pitch of the metal. Argentiferous matte from Lake George, containing 37 per cent copper, is converted into white metal in about 30 minutes.

The methods of copper assaying employed are: Cyanide, Electrolytic, Gravimetric (subsulphide), and Iodide. The old Cornish copper assay (fire-assay) is still practised by this firm.

In conclusion it may be remarked, that the success of this world-famed firm, during the last forty years is in no small degree due to the exceptional skill and ability of its eminent and genial chief chemist, Mr. Suchsland, in charge of the Hafod laboratory, where there are about twenty-five assayers and assistants employed under him, and where about sixty thousand assays of all kinds are made in the year.

## A TON OF GOLD

NOW ON THE WAY OUT FROM THE KLONDIKE.

SKAGWAY, June 13, via Seattle, June 17.—A large amount of gold dust and nuggets was landed at White Horse Rapids last Friday, June 9th, from the first three steamers to reach that point from Dawson City. Over a ton of it was officially checked off by the officers at White Horse when making the transfer from steamer to steamer. The remainder was divided in packages ranging from 10 to 75 pounds, carried by more than 300 passengers on three boats. They were in all sorts of old packages and no attempt was made at concealment.

No. 17 Eldorado, it is said, will prove the richest of the whole Klondike. Mr. Peacock, of Quebec, who owns a half interest, had 37 men at work on it all winter, and the clean-up will be in the neighborhood of from \$1,200,000 to \$1,500,000.

## QUARTER OF A MILLION.

SEATTLE, June 17th.—Two hundred Klondikers arrived here last night on the steamer "City of Seattle." Collectively they had considerable gold dust, but their estimates of the total amount varied greatly. Purser Pope said, "About four hundred thousand dollars in actual dust is a conservative estimate, I think. I had about \$250,000 placed in my case."

## CANADA ASLEEP.

So says Mr. A. H. Halder, Reuter's special correspondent here, according to The Province:—

"If British Columbia mines, active and prospective, were in South Africa, all the world would very soon hear of their worth, and all the capitalists of the world would be interested in them." Thus spoke Major Albert H. Halder, F.G.S., who was in Vancouver recently and left on the "Charmer" for Victoria, en route to the Klondike and other gold districts of the north. Major Halder is special correspondent for the Reuter's Telegram Company for the American and Canadian gold fields. He is a mining expert of

wide fame, and his correspondence to Reuter's will be of great interest and value to investors, and will go far towards fixing definite value of the new Halder has recently been much in South Africa, including Rhodesia, where he says there are many excellent mining properties, twenty or more of which could be made dividend producers within a year. Of course Rhodesia is doing everything possible to put the value of her mines prominently before the world, being in this respect the very antithesis of Canada, where the people do not seem to realize and certainly do not emphasize the immensity of their mineral resources. British Columbia shares this characteristic of the Dominion of which she is a part. "Indeed," said Major Halder, humorously, "it seems that the Canadians take their sleeping draught three times a day with meals."

## FINANCE.

London, Eng.—A steady flow of decent new industrial companies is at hand. With regard to Whiteley's, only 4 per cent. debentures will be issued to the general public, most likely the ordinary shares being monopolized by the vendor. Owen, a rival of Whiteley, will also float his business on the sea of limited liability. The William Wallace & Co., the famous "inexpensive art" furnishers, of Curtain road, is promised as an advocate for public subscription. After about eight months of negotiations, the combination amongst Bradford's wool-combing firms seems imminent. A committee has been formed to make arrangements for pooling the interests of about 20 leading houses. The textile machinery makers are also on the move in this direction.

The net profit earned by Liptons, Ltd., in its first year of trade as a limited liability company, is \$1,088,100, being two hundred thousand in excess of last year under the old regime. Shareholders receive 11 per cent. for the year, and \$225,000 is reserved. The other big industrial flotation of last year, the Fine Cotton Spinners and Doublers Association, Ltd., has also just finished its first year's trad-

ing. This is a combine of manufacturers. The net profits are \$1,495,675. Ordinary shareholders get a dividend of 8 per cent. and \$400,000 is reserved.

## Answers to Correspondents.

SAX, Eng.—1. We cannot recommend you to buy the shares you mention. The company you refer to is existent, but development work is practically suspended, we presume from want of funds. 3. For what we know the property is a good one.

W. TIPPER, Eng.—The Company you mention has its offices in Victoria, B. C. Secretary, J. T. Bethune, 30 Broad street, Victoria, B. C. The office of the other company is 48 East Columbia avenue, Rossland. 2. We do not know whether they are actually working. We think both are dead letters. Should advise you to hold.

BARNY, Eng.—Alberni, we believe, will come out on development. Yes, you will be safe in securing at the figure you mention.

M. M.—We advise you to hold 'til the autumn. You may sell a third and make a good thing on the remaining two-thirds.

W. JACKSON.—1. Shares in the companies you mention are good; hold them. 2. Yes, a London Company, with offices in Vancouver, B. C. 3. 3-16 above par.

THOS. SCOTT.—We have heard of several copper mines, but do not trace the one you refer to. You may possibly have quoted the title wrongly. 2. Yes, our copper prospects are good and need a little cash to develop. 3. 5 or £600.

A. Z.—No. Cannot recommend them. The whole thing is boomed and the parties not a desirable quantity.

CANADA.—1. About 2½c. 2. As a sample, yes. It is true Le Rois could have been purchased, some seven or eight years since, for 1½c. 3. We don't care to go into these matters; write the secretary. 4. The best and most practical man in the Province, and, we believe, thoroughly honest.

# The British Columbia MINING EXCHANGE and Investors' Guide

is published monthly as a Guide to Investors generally, to whose interests it devotes itself.

**CORRESPONDENTS.**—All correspondence should be addressed to the Editor, B. C. M. P. Exchange, and any correspondents desiring advice or information in reference to investments, we will reply to, free of charge, provided they are annual Subscribers.

**REMITTANCES** should be made by P. O. Order or certified check, and addressed, British Columbia Mining Prospectors' Exchange and Investors' Guide, 612 Cordova St., Vancouver, B. C.

**ADVERTISING RATES** on application to Business Manager, 612 Cordova Street, Vancouver, B. C.

## Mining News.

### ROSSLAND.

**Lots of Money and Machinery Going Into the Kootenay.**

A. J. McMillan, Managing Director of the British Columbia, Rossland and Skeena Mining Syndicate, with headquarters at Rossland, is in Vancouver on legal business. Mr. McMillan, speaking of mining activity in the Kootenay country generally, says that "wonderful strides are being made this year in works of improvement.

"British Columbia mines are rapidly coming to the fore," said he at the Vancouver Hotel. "This applies generally to the eastern speculators no longer fear the boom-like character of investments which are offered in this country. Capital is proceeding confidently. The most encouraging sign of the prosperity of Rossland mines this year is that many new corporations are being formed, many of their projectors being local men. The fees are much higher for organizing stock companies than they formerly were. The time was that a million dollar company could be floated for ten thousand dollars. Now it costs something like a ready to go before the public. If promising sectors were not sincere so many new mining and development concerns would not be in process of formation.

"Much new machinery is being taken into the Kootenay and this year will see immense advancement. Rossland building will now go more rapidly and until recently there was a cloud upon the title of the land about Rossland. Until the Government cleared this up people were slow to build good houses. One cloud to title to a large block of land was recently removed and building operations are lively. Some of the shafts of the big mines which are now down about 900 feet, will be sunk 2,500 feet this season. The future of our mines is, therefore, assured."

Mr. McMillan said that he was gratified to hear of the projected excursion of the Bankers' Association of the

eastern United States which will visit the mining regions. He thought good results would accrue directly and indirectly to all regions and inquiry would be stimulated into the merits of the mines near Vancouver. There was scarcely a doubt that the visitors would visit the coast.

### SMILKAMEEN.

A rich strike of argentiferous, auriferous copper ore, has been made in the Smilkameen, on Kennedy Mountain. The ledge runs from 7 to 9 feet, and assays \$154.12 to the ton; 40 per cent. copper. Matte test gives 75 per cent. metal. We have seen the ore and assay certificates in support of this property. The owners inform us that they intend developing at once so as to ship out a ton of the ore to Vancouver for a pulp test. Quite a number of capitalists on hearing of this find have endeavored to buy it out and out, or even an interest. The owners wisely refuse to talk business till they have proved the property.

### KLONDIKE.

The Grand Forks, of Bonanza Gold Mining Company, Limited, have just completed their machinery consisting of a 12 h. p. machine, an 8 h. p. and a 2 h. p., with a 4½ h. p. engine for hoisting and general purposes. The whole of the plant, with the exception of the engine has been made in Vancouver, under the direction of Mr. Proulx, who has given the Company every satisfaction in its construction. The drills have also been made in Vancouver, and are constructed with interchangeable heads and steam jets, rendering the tool readily repaired in case of damage, a desideratum at the diggings. Through the foresight of the management, any contingency such as ordinary damage of machines by wear and tear, or accident, has been provided for by interchangeable parts, which will be sent up with the machines so as to provide against loss of time and expense.

The boilers have been tested to 225 lbs. hydraulic, equal to 150 lbs. working pressure.

These machines will be worth some thousands on their instalment on the Company's property on Little Skokum, 12 miles from Dawson, and 1,500 feet from Bonanza Creek.

The Company are to be congratulated for their promptness in carrying out this business in such a satisfactory manner, and the shareholders we believe, will have every reason to expect an early and satisfactory result. We wish the Company every success. The basis on which it was brought before the public merits the greatest measure of prosperity, and demands every confidence. The Directorate is composed of some of the best known mining and business men of the Province, and the affairs of the Company we can leave safely in their hands.

The first ordinary meeting of the Grand Forks of Bonanza Gold Mining Company, Limited, was held at the Company's office, 12 Cordova street,

Vancouver, B. C., on Tuesday, May 30th.

The following gentlemen were elected Directors: Messrs. I. Oppenheimer, President; Thos. Kitchen, Vice-President; G. J. S. Lock, J. G. C. Lock, Hardiman, Spillman and Marks. Mr. Brydone-Jack was appointed the solicitor of the Company, and the Bank of British North America, the Company's bankers.

Mr. Stanley James was elected auditor.

Mr. T. Hardiman, Secretary. Superintendent of Mines, Mr. M. Marks.

Assistant Superintendent of Mines, Mr. J. G. C. Lock.

### TO LAKE BENNETT.

White Pass Road Extension is Nearly Completed.

L. H. Gray, General Traffic Manager of the White Pass and Yukon Railroad, returned from Skagway and Lake Bennett on Wednesday morning on the steamship Rosalie. Mrs. Gray accompanied him. Mr. Gray left Lake Bennett, May 22nd, the prospects were that navigation would open not later than June 4th. The ice on the lakes was fast giving way. He said this morning: "Bennett City is to-day one of the busiest towns in the North-west. All steamers are ready for launching, and steam can be gotten up in them in a very few days. Quite a fleet of lake boats were built on the shores during the winter. Hundreds of men and women are waiting at Bennett to take the first boat down the river. We have begun to issue bills of lading on the Klondike gold output this year. Millions will come out by the up-river route and the miners are already offering it for transportation. We have routed a considerable quantity already. Our agent at Dawson reports that 5,000 men are waiting there to take the first boats up the river. Our road will be finished to Lake Bennett in a few weeks. Then the long looked for will be realized. Work is progressing rapidly. We are sending three trains to the summit each day on time. From the end of our track supplies are being hauled to Bennett at the rate of 100 tons a day. The wagons use the railroad grades. A stage line carries some 50 passengers a day each way. Many new buildings are going up at Atlin and we will hear good reports from that camp when the Gold Commissioner decides on claim ownership."

### WIRE TO DAWSON.

Telegraph Line Will be Completed by Fall.—Work Being Pushed.

The new telegraph line that is being built by the Dominion Government through from Bennett to Dawson City is making great progress and already the wires are up and the line in working order as far as Cariboo post, which is at the foot of Lake Bennett, a distance of 29 miles. A message from that point was recently received in Bennett by the agent of the White Pass & Yukon Railroad from J. B. Charleson, of the Department of Public Works,

who is at Cariboo superintending the construction of the line, in which he announces that the ice at that point is in a condition to justify the prediction that Lake Bennett will be open for navigation by June 1st. Mr. Charleson is pushing the work of erecting poles and stretching wire as fast as it is possible under the circumstances, and within a very few days the line is expected to be open and in working order as far as Tagish post. With the disappearance of the snow the work can be greatly facilitated and a larger number of men can be put on the line. The open water will also enable men and material to be transported from point to point with greater rapidity, so that it is safe to say that long before next fall the wires will be up and in condition to tick the latest news from Dawson City to Bennett and Skagway. By that time it is also hoped that another line will connect Bennett with the rest of British Columbia, and thus bring all this country as far as Dawson in close touch with the civilized world.

#### BANKERS TO VISIT MINES.

United States Association Plans Excursion to Western B. C.

The Bankers' Association of the United States will visit British Columbia this year and the western trip, which is planned for the latter part of June, may include Vancouver. From here the visitors may take a boat ride down the Sound.

The Association has decided on two excursions and one party which will have the most time intends to visit Minneapolis, Banff, Revelstoke, Nelson, Rossland and other points in the Kootenay country. From there they may come on down to Vancouver, and as some of the leading bankers and capitalists of the United States will be in the party their visit of the mining regions is of great importance.

#### IMMENSE LEDGE OF ORE.

Cave of Unknown Depth Disclosed by a Blast.

Alberni, B. C., June 2.—Wm. Morgan, a miner, who has been working at Hayes' Camp, brings the news that on May 24th, while working on a new lead about 12 feet from the surface, he put in a shot. None of the debris coming out he was nonplussed and upon investigation found that the inner portion of the mountain was hollow and formed a cave. The foreman was notified and upon a thorough investigation it was found that a cave existed some 15 by 25 feet in width and height, depth unknown. A rope was procured and Morgan began to venture into the cave going in some 40 or 50 feet, disclosing to him one of the grandest sights. He beheld a large ledge of ore such as never has been found or seen on Vancouver Island before and which will place this mine as the leading one on the island and the Alpha of the mining industry in and around Alberni. This, with other late finds, goes to show that we are on the eve of a prosperity which will develop the various claims and

give to the long waiting, gray-headed prospector his reward for patience and hard labor.

The Minister of Mines gives notice that an extension of time has been granted to September 1st, 1899, during which all claims legally held on Swift Current Creek and tributaries in the Tete Jaune Cache district, are declared laid over.

### Stock Market.

THE B. C. MINING MARKET, JUNE 13th, LONDON, ENG.

The chief feature this week has been the special settlement in Le Rois, which was concluded on Thursday. A "contango" for 2s. 6d. per share subsequently became 2s., and it appeared that there was practically no bear account open. B. A. Co.'s, New Goldfields, and Velvets have dropped a fraction. Hall Mines have fluctuated slightly. Our remark last week has been misunderstood by some of our readers to imply that we had no faith in these shares. Our hint was only given for those who had bought for a rise, as was suggested in these columns some weeks ago to speculative investors.

Yukon Goldfields have gained  $\frac{1}{8}$ . Ymirs are firm at 1%, but Queen Bess have lost a fraction. These shares are still much below their intrinsic value. Le Rois are likely to see £10 before very long. Athabascas have improved somewhat and will probably stand at a good premium after this month's returns have been published.

#### B. C. AND KLONDIKE QUOTATIONS.

Alaska Goldfields, 1 and 3-16.  
Athabasca, 1 and 1-8.  
British America Corporation, 23s. 6d.  
B. C. Development Association 1 and 3-16  
Dominion Mining, Development, and Agency, 7-8.  
Duncan Mines, 1 and 11-16.  
Hall Mines, 5-8.  
Klondyke & Col. Goldfields, 1-2.  
Klondyke Bonanza, 1 and 1-16.  
Klondyke Mining, Trading and Transport, 3-8.  
Klondyke and North West Territories (10 shares), 6s.  
Klondyke, Yukon & Stewart, 1-2.  
Le Roi, 8 and 1-2.  
Lillooet, Fraser River and Cariboo Goldfields, 6s.  
London and B. C. Goldfields, 1 and 7-8.  
McDonald's Bonanza, 1-16 pm.  
New Goldfields of B. C., 1 and 11-16.  
Queen Bess Proprietary, 1 and 5-16.  
Vancouver & B. C. Gen. Ex, 1-2.  
Velvet, 1 and 11-16.  
Whitewater Mines, 1 and 1-8.  
Yukon Goldfields, 1 and 1-16.  
Ymir Gold Mines, 1 and 3-8.

Shares in locally registered companies dealt in in London.

(Dealt in in multiples of 500 shares).

Alf Gold Mining Company, 2s.  
Dundee, 10 $\frac{1}{2}$ d.  
War Eagle Con. Mining Co., 13-16.

Rates on London and New York are lower than for some weeks past.

### THE ESTATES, FINANCES, AND MINES CORPORATION.

The following cable has been received from the manager of the Fairfield Exploration Syndicate, dated Vancouver May 14th, 1899: "Dorothy Morton Mine—Output for the month ending April 30th, 1,670 oz. bullion, gold 397 oz., silver 765 oz., total value £1,695 10s.; 88 tons treated, assay value, gold 31s.; assay value, silver, 3s.; calculated extraction, gold, 89 per cent., silver, 20 per cent. Ten stamps ran eighteen days eighteen hours, crushed 984 tons (equal to 52 tons per head per day). Note.—The value of March output was £1,614.

#### LATEST POINTS.

Bank rate, 3 per cent. Open market rate three months' bank bills, 2% per cent. Silver, 28d. per oz., (bars) standard. Copper, £77 7s. 6d. per ton. Iron, 63s. 9d. Tin, £117 12s. 6d. Lead, £14 2s. 6d. Consols, 110 $\frac{1}{8}$ . Canadian Three and a-Half Per Cent., 105 $\frac{1}{2}$  per cent. British Columbia Three Per Cent. Inscribed stock, 101. Canadian Pacific Railway shares, 101 $\frac{1}{2}$ . Bank of British Columbia, 18. Bank of British North America, 61. Bank of Montreal, 510. Hudson Bay, 24 $\frac{1}{2}$ .

#### LOCAL STOCK MARKET.

	PAR VALUE.	PRICE.
Alberni Con.....	\$1 00	05
Alberni Mountain Rose..	1 00	05
Athabasca .....	1 00	27
Big Three .....	1 00	40
Cariboo Hydraulic .....	5 00	\$1 50
Cariboo McKinney .....	1 00	23
Canadian Goldfields.....	—	—
Crow's Nest Coal .....	25 00	41 00
Dardanelles .....	1 00	15
Deer Park.....	1 00	6
Evening Star.....	1 00	12 $\frac{1}{2}$
Grand Forks of Bonanza .....	25	15
Hall Mines.....	1 00	—
Iron Colt.....	1 00	13
Iron Horse .....	1 00	1 15
Iron Mask .....	1 00	66
Knob Hill .....	1 00	25
Le Roi .....	—	—
Mineral Hill.....	—	—
Minnehaha .....	1 00	05
Monte Cristo .....	1 00	25
Montreal Goldfields.....	1 00	18
Morrison .....	—	—
Noble Five .....	1 00	30
Novelty .....	1 00	04
Old Ironsides.....	1 00	1 13
O'Shea.....	1 00	02
Payne.....	10	4 10
Rambler Cariboo .....	1 00	33
Rathmullen .....	1 00	07
Slocan Star.....	50	1 25
St. Elmo .....	1 00	07 $\frac{1}{2}$
Van Anda .....	1 00	08 $\frac{1}{2}$
Victory-Triumph .....	1 00	10
Virginia.....	1 00	21
Waterloo .....	10	11
War Eagle .....	1 00	3 87
White Bear.....	1 00	05
Winnipeg .....	1 00	31 $\frac{1}{2}$

Dividends have been paid by the following Mines:—

Le Roy .....	\$825,000
War Eagle .....	309,000
Fayne .....	1,000,000
Slocan Star.....	400,000
Ruth .....	450,000
Reco .....	350,000
Idaho .....	150,000

GRAND FORKS OF BONANZA GOLD MINING  
COMPANY, LIMITED.

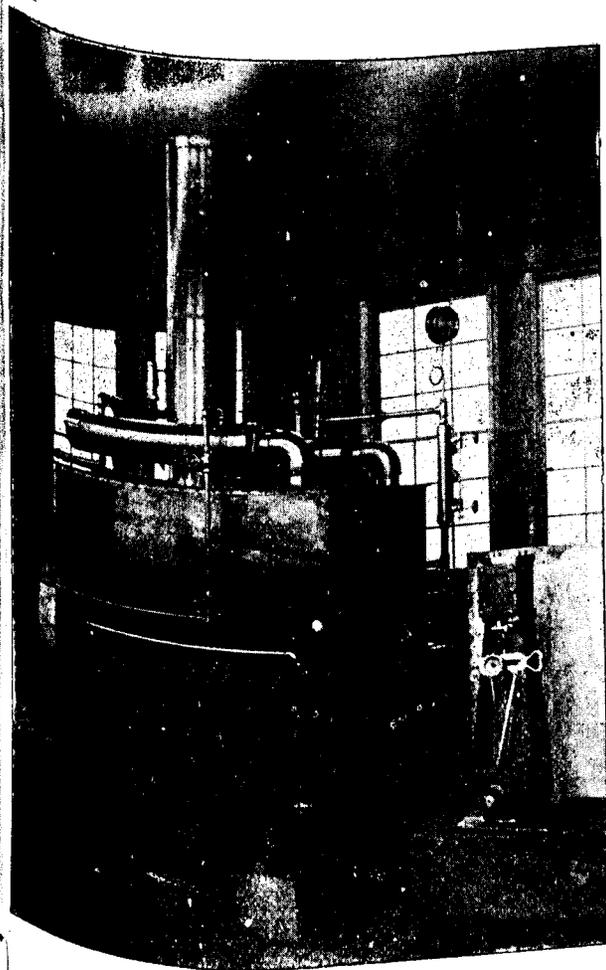
INCORPORATED APRIL, 1899.

The machinery here illustrated is the property of the above Company and forms an investment in itself second to none. No expense has been spared on the part of the directorate, consistent with good value. The workmanship throughout is excellent and reflects the greatest credit on designer and constructor Proulx.

The drills are made from the designs of the Company's engineer, Mr. M. Marks, and are models of strength and utility. These instruments carry the steam into the frozen auriferous gravel and enable the miners to win the gold quickly and easily. The Company will be able to get out something like 50 ft. per day, so that a good dump will soon be ready for the wash up.

The engine, boilers, etc., have been tested, the boilers being subjected to both hydraulic and steam pressure, and they worked like a charm.

The Grand Forks of Bonanza, Limited, lost no time in getting down to business, consequently have secured the confidence of the shareholders. We wish them the greatest measure of success. We hear there is a probability of the shares being at 25c. in a short time.



## THE GOLD OUTPUT.

Figures on the gold production, now coming to the Treasury Department indicate that the world's production of the yellow metal for 1900 will equal \$400,000,000.

The official figures from various countries in 1898 are rapidly coming to hand, and indicate an increase in gold production alone of \$50,000,000 over the gold production of 1897, which was \$237,504,800. Returns for 1899 are already available to a sufficient extent to indicate an increase of more than \$50,000,000 over 1897, unless some unexpected catastrophe checks mining in South Africa or Australia, which will carry the production for the current year to about \$340,000,000. This rate of increase has now been running for several years, and it is believed at the Treasury that the year 1900 can hardly fail to show a gold production of \$400,000,000. About \$65,000,000 will be required for the arts, leaving \$355,000,000 available for money.

The gold production of 1896 was \$202,682,100, of which about \$138,000,000 was available for monetary uses, and the silver production was \$217,442,900 at the coining value, of which about \$175,000,000 was available for monetary uses. The whole amount of both metals available at that time, therefore, if the mints of the world had been open to free coinage of silver, was about \$113,000,000, which will be about 22,000,000 less than the available supply of gold alone in the year of the next Presidential election.

The details which fill up this striking picture are drawn chiefly from the gold fields of South Africa, Australia, the Klondike and the United States.

The South Africa production is known and reported monthly by cable. The total for 1898 was about \$80,000,000, being an increase of about \$21,000,000 over the production of 1897. The four months of the present year have indicated an increase of 34 per cent. over 1898, which would afford a total production for the year of over \$106,000,000.

The recorded production of Australia for 1898 is about \$68,000,000, an increase of 12,000,000 over 1897. Every indication points to a similar increase for 1899, carrying the production for the current year to \$78,000,000.



The United States, which held first place in gold production in 1896 by a margin of \$8,000,000 over Australasia, and clung to second place by a neck in 1897, will drop below both the leading competitors for 1898. The official preliminary estimate, prepared by Director Roberts, in January, put the production in 1898 at \$65,782,677. This will be slightly modified by the final revisions, but is not likely to be reduced. The reports of the United States Mint at San Francisco indicate that \$16,520,553 in American gold was presented for treatment there, while the estimate of Director Roberts puts the California product at

only \$14,883,721. The United States production of 1897 was \$57,363,000. The increase of \$8,000,000 will be duplicated for the current year, and is likely to be increased next year. Colorado, California, South Dakota and Montana are making a tremendous fight to increase their product, and the mines opened in Washington promise to be an important factor in the near future.—EX.

#### LOW-GRADE ORES.

The greatest profits in mining are often made out of low-grade ores. The Alaska Treadwell has paid, since 1891, \$3,625,000 in dividends, and previous to that date, when known as the Alaska Mining and Milling Company, it had paid \$700,000. The ore of this mine is very low grade, never exceeding \$6.60 a ton, and often averaging for months but a trifle over \$2 a ton; but the conditions are such that the maximum of economy is possible.

The Homestake mine in South Dakota has paid, since 1891, \$7,181,000 on ore that did not exceed \$4 a ton in value. The Quincy copper mine of Michigan has paid since the year named \$16,120,000, treating ore carrying about 3 per cent. of copper. The Tamarac, another Michigan copper mine, has paid \$5,580,000 in the same period, treating similar ore. With few exceptions, this is the history of all the best dividend-paying gold and copper mines throughout the world.

#### The Metal Market.

NEW YORK, June 14th, 1899.

The following are the Silver, Copper and Lead quotations for the past two weeks:—

	SILVER.	COPPER.	LEAD.
June 1 .....	61	18 70	4 25
" 2 .....	61	18 50	4 25
" 3 .....	60¾	18 50	4 25
" 5 .....	60¾	18 50	4 25
" 6 .....	60¾	18 50	4 25
" 7 .....	60¾	18 50	4 25
" 8 .....	61	18 50	4 25
" 9 .....	61	18 50	4 25
" 10 .....	61	18 50	4 25
" 12 .....	60½	18 50	4 25
" 13 .....	60½	18 50	4 25
" 14 .....	60½	18 50	4 25

**SILVER**—Has not maintained the high level of April's closing figures. The excitement induced by speculation has died out. Prices have, however, held up over 28d., owing to limited offerings. The East has not been a buyer.

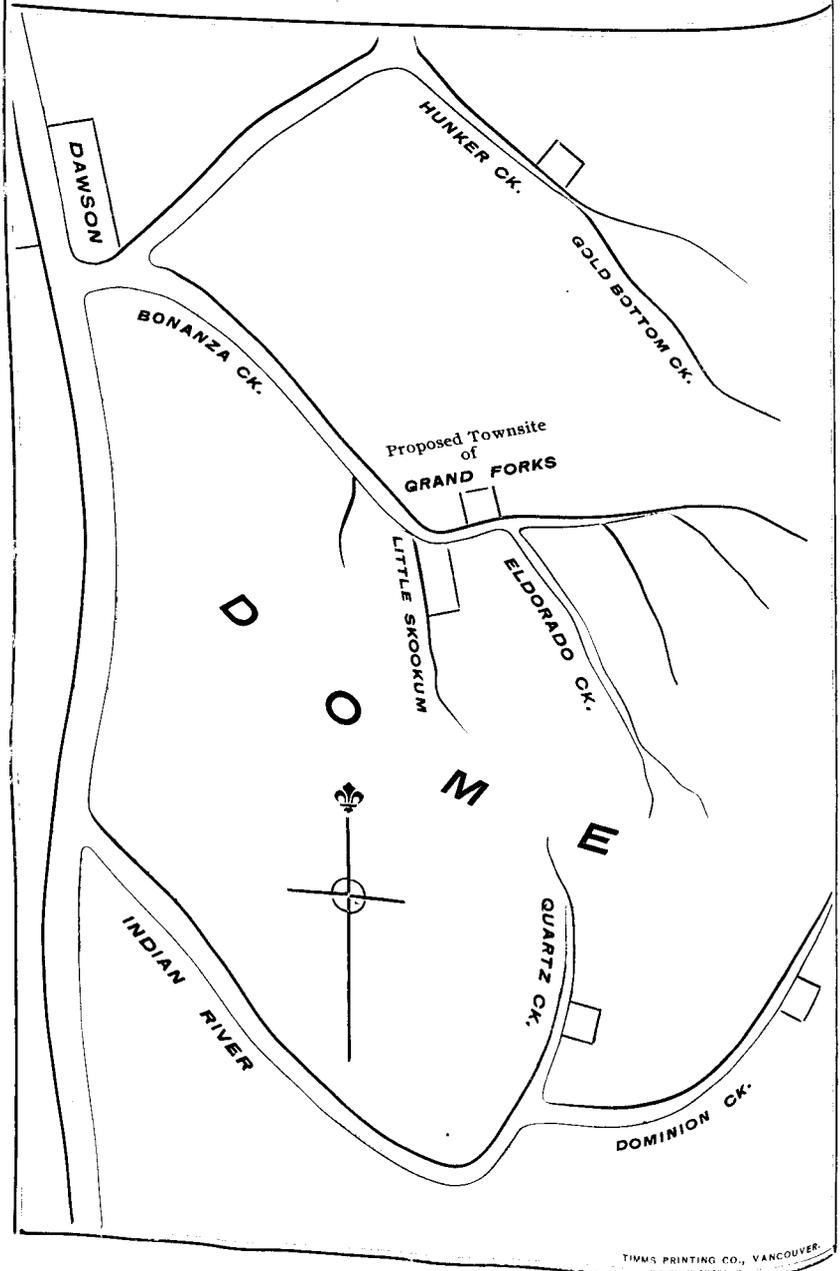
**COPPER**—The market has been fairly firm, but very little business has been transacted. The only important change has been a disposition to meet buyers of Lake at a somewhat lower price than that ruling during the preceding few weeks. We quote Lake 18 @ 18½c.; electrolytic, in cakes, bars or ingots, 17 @ 17½c. electrolytic cathodes, 16¾ @ 17c.; and casting copper, 17c.

**LEAD**—The improved condition still prevails, but prices have not advanced any further, the quotations being \$4.45. Spanish lead has changed for the better, the price now being £14 5s. @ £14 6s. 3d. while for English it is £14 7s. 6d. @ £14 10s.

**SPELTER**—Is unchanged at \$6.85 @ \$6.90 at New York, \$6.60 @ \$6.65 at St.

## Sketch Map of the Properties of The Grand Forks of Bonanza Gold Mining Co., Klondike, Limited.

Little Skookum Bench Claims, distance: 25 miles from Dawson.



Louis. Foreign quotations also remain unchanged at £28 10s. for ordinary kinds and £28 15s. for specials.

**ANTIMONY**—Continues in good demand with prices unchanged at 10½c. for Cookson's; 10c. for Hallett's "C." U. S. Star and Hungarian.

**NICKEL**—Continues unchanged and no alteration of prices can be reported. We quote for ton lots 33c. @ 36c. per lb., and for smaller orders 35½c. @ 38c. London prices are 14d. @ 16d. per lb., according to size of order.

**TIN**—Has experienced a further decline from the highest prices recently reached, having receded to 25¾c. spot, with future entirely neglected. The happenings at this end have been merely a reflection of the events in the London market, which is quoted in closing at £116 5s. for spot and £117 for three months.

**PLATINUM**—The demand for platinum is active and prices continue high. We quote for New York \$15.50 per ounce for large lots and \$16 @ \$17 for small orders. London is 62s. @ 64s. an ounce.