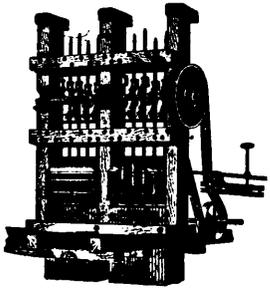


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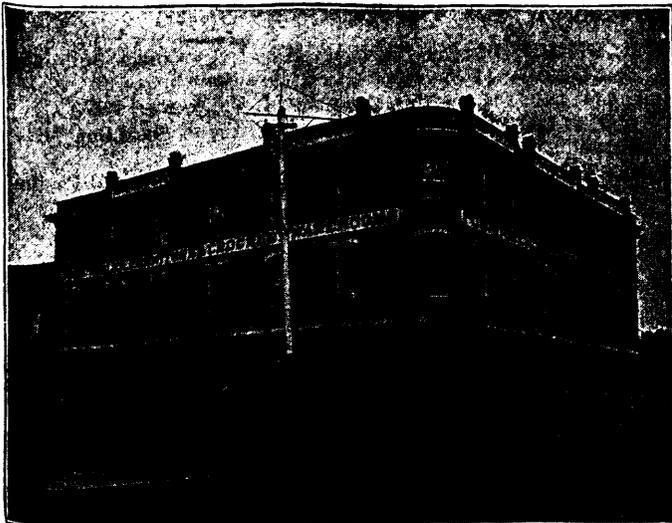
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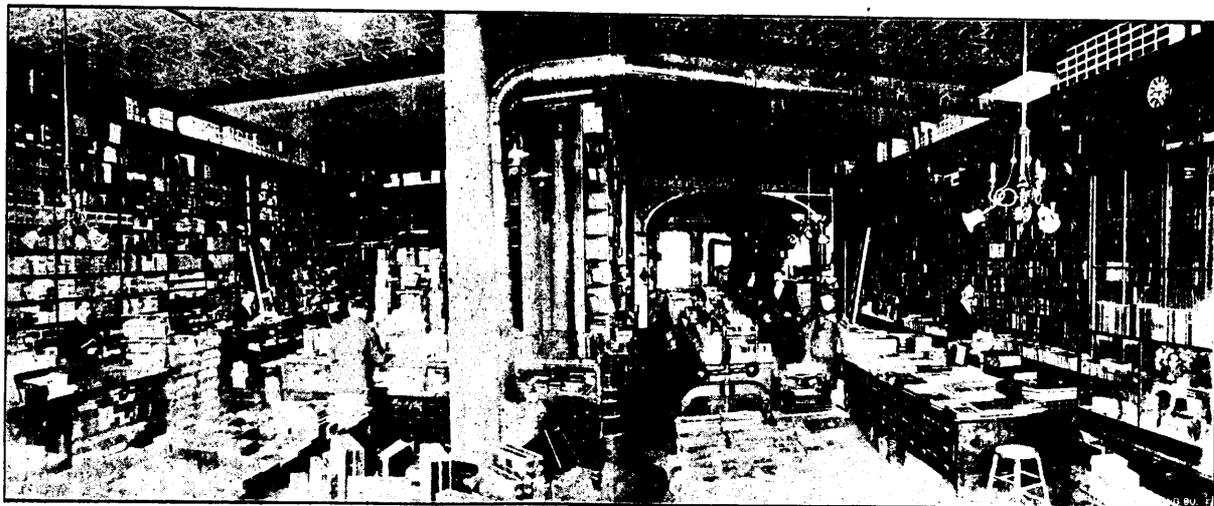
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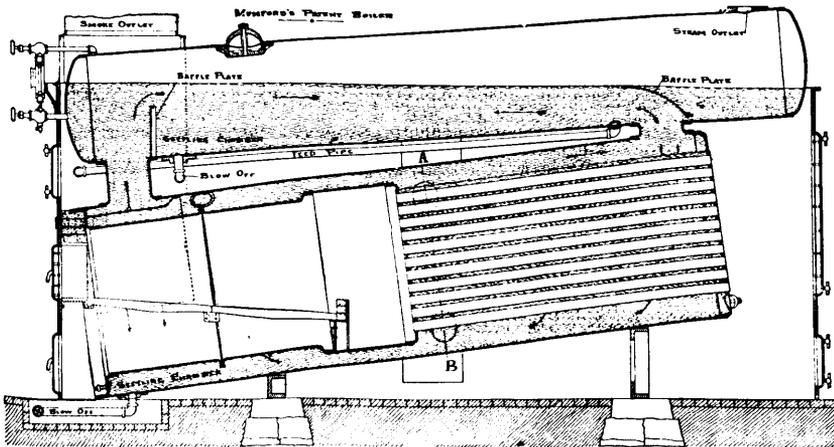
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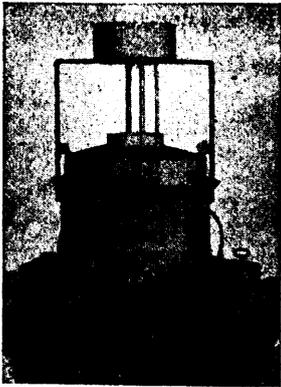
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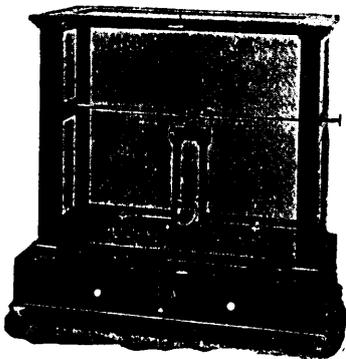
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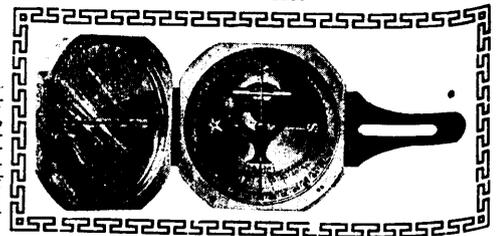
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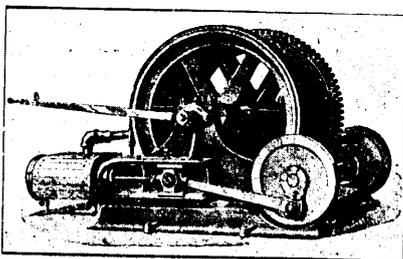
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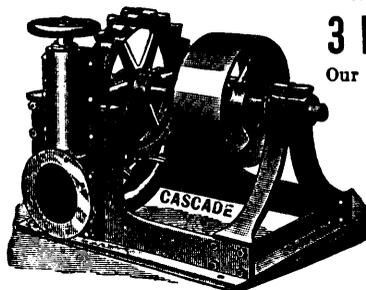
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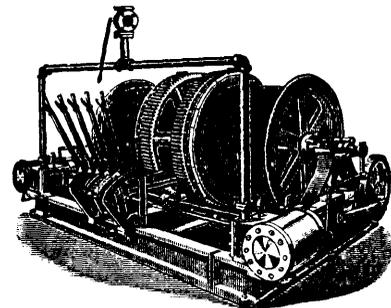
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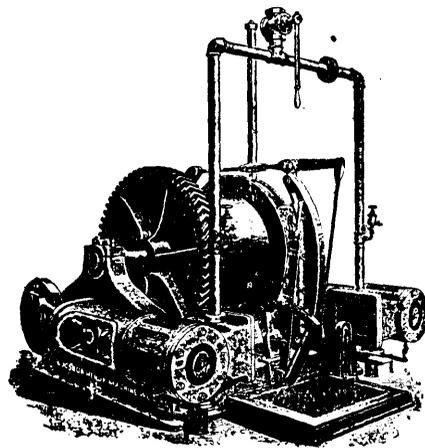
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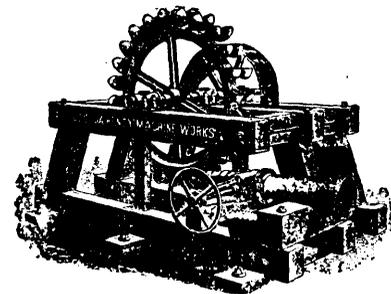
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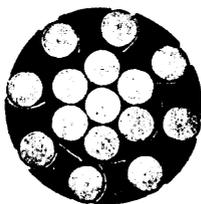
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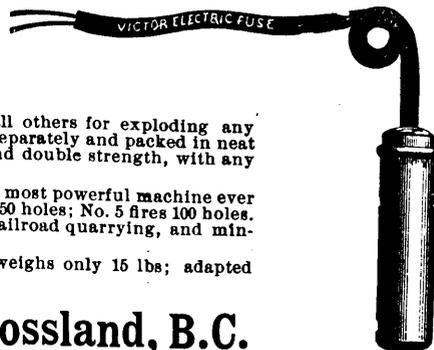
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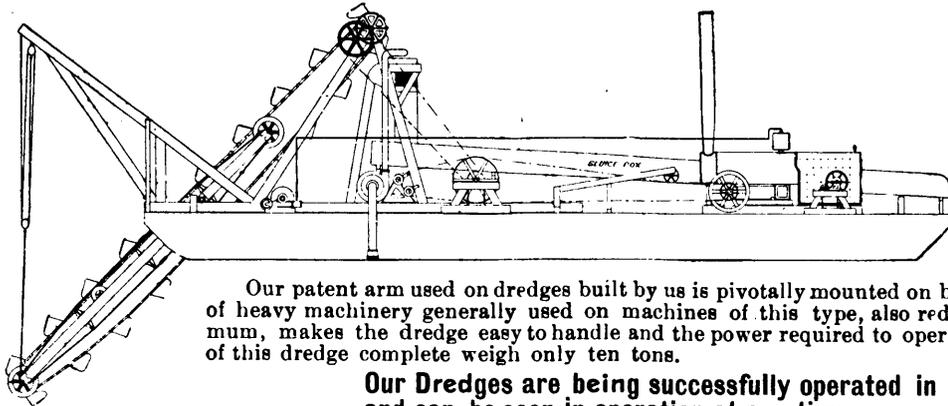
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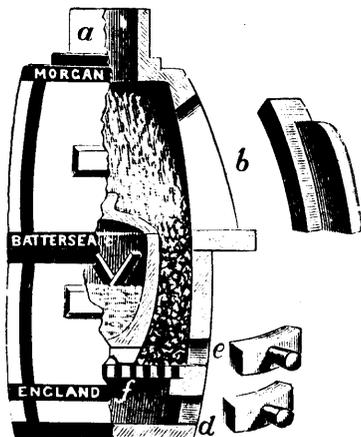
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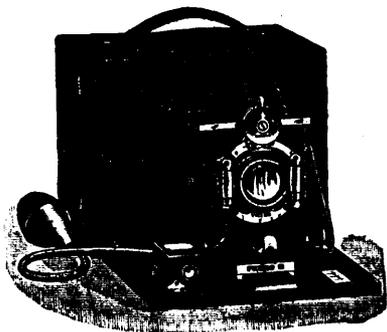
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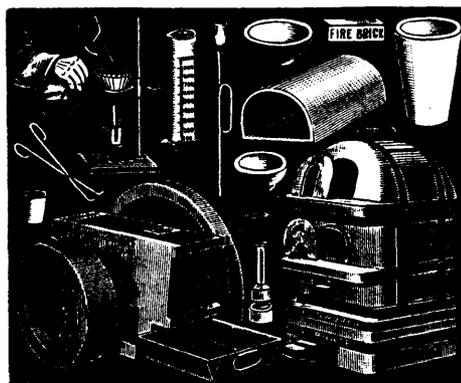
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# The Mining Record.

Vol. IV.

NOVEMBER, 1898.

No. 11

## BRITISH COLUMBIA MINING RECORD.

Devoted to the Mining Interests of British Columbia.

PUBLISHED BY  
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ADVERTISING RATES ON APPLICATION.

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### THE MONTH.

A FIRM of Victoria metallurgists and assayers recently presented a petition to the Premier, praying for the abolition of the Government Assay Office, on the grounds that COMPETITION, that institution seriously interfered with the practice of private establishments doing business in the Province, and that such competition was, moreover, unfair, for the reason that the Government office was maintained at the public expense. That there is some foundation for the grievance complained of will not, we think, be questioned. No professional men are, perhaps, as a class more poorly paid than assayers or analytical chemists and it is certainly not desirable that the Government, whose advantage in the matter of prestige is necessarily considerable, should be regarded as a competitor in this already somewhat restricted field of professional work. On the other hand the abolition of the Government Assay Office altogether would be, in our opinion, a very regrettable and ill-advised step, its practical utility and value being fully recognised throughout the country. But the work of the office should be more strictly confined to investigations of an experimental and scientific nature, in the interests of the mining industry generally, rather than to a class of examination for private individuals that could be as well performed by qualified men who depend on work of this description for a livelihood. For the protection of private assayers, and yet not absolutely to prohibit the public from sending ore samples for assay examination, or for check purposes to the Provincial analyst, we would suggest that a scale of fees double those ordinarily charged by assayers in private practice, be imposed at the Government office. If this were done all cause for complaint on the part of private assayers would be at once removed and while the Government would be called upon to contribute a small additional sum

for the maintenance of the office—the Provincial analyst, deriving at present a part of his income in fees from private sources—the efficiency of a Government Laboratory in association with the Department of Mines, would be decidedly more marked than is the case now. In addition, however, to work calculated to benefit the mining industry, which would include, for instance, the melting and stamping of gold bullion; the identification of mineral samples; the naming of rock and specimens free of charge; the testing of ore with regard to their amenability to certain treatment processes; and the assaying and classification of representative mineral specimens for exhibition purposes; the utility of the Government Laboratory would be further enhanced if placed at the disposal of the Department of Agriculture and the Provincial Board of Health, and facilities would be thus afforded for the testing of soils and fertilisers, or for the making of analyses for sanitary purposes.

Mr. Treadgold's able articles, from which in our September issue we were permitted to print extracts, on the Yukon Gold Fields, are now being published in the London *Mining Journal*, for which paper he acted as special correspondent. The reports, especially that one dealing

with the imposition of the 10 per cent. royalty tax on the gross gold output from placer claims, have attracted a great deal of attention and brought forth much voluminous correspondence in the columns of the London press, on the subject of royalties in general and the Klondyke royalty in particular. Meanwhile, it must be admitted that Mr. Treadgold makes the best of his case. He points out that the miner is the producer of the Kootenay, and he alone is thus specially taxed there; the many traders who live upon the fruit of his labours get off free, while the miner is heavily burdened. Again, he says, there is in this royalty much of that retrospective nature which is always hated. Purchasers of mines did not include it, contracts with laymen did not take it into account, being made long before it was enacted in many cases. Even when it was known ere the winter's work was arranged, men inside did not believe it, did not think it would be enforced. Then, too, it was decreed by Major Walsh that mineowners should pay all the royalty and laymen none; that is to say, Major Walsh split every dump in half, and said: "This half belongs to the layman and pays no royalty; this to the mineowner and pays all." Thus the owner paid 10 per cent. on the whole with his half share, or 20 per cent. on the amount he received! Work this out, and the owners pay one ounce in every five to Government. It is not surprising that many had to be exempted, while others borrowed money with which to pay royalty—there are, in fact, naturally, many claims which cannot stand such a tax. If one seeks to understand its imposition, one

must suppose it to have been due to the quaint representations of the prophets of the Klondyke, who talked wildly of the fabulous wealth of the country, and, doubtless, those who imposed it meant to give the Klondyke many blessings with it, especially a railway and improved trails, but, while the royalty was rushed on, the railway was rushed off, and as the executive at Dawson failed to attend to the trails, the miners found themselves saddled with a new huge burden and no corresponding improvements at a time when everything was at its dearest—*e.g.*, lumber, \$400 a 1,000 at many of the mines; nails, \$5 per pound; freightage and provisions fabulously dear. He might then well complain, and may still, for he remains without help from the Government, where the Government can best help him—*viz.*, in improved facilities for cheap transportation to the Yukon and in the Yukon."

Mr. Treadgold then goes on to describe some of the results of the royalty. It encourages, he asserts, dishonesty, for false returns must (sic) necessarily be made in many cases; it renders a large number of the middling and poorer claims unworkable at a profit, and therefore unsaleable; it keeps a number of mines that would just pay the mere royalty from being worked and hence labour is not employed to anything like the extent warranted by the gold in the creeks, and thus presses hard on new arrivals. One argument in favour of the royalty has been that the men who dig out gold in the Yukon are largely aliens and do Canada no good with the gold they take out; therefore we will tax them heavily. Mr. Treadgold suggests that this would require the exemption of Canadians from the tax, and states that while there are many aliens in the north diggings, yet all who dig benefit Canada directly or indirectly. He concludes by setting forth the conditions under which creek claims may be secured, the prospector after paying his license is allowed to stake a claim of 250 feet in length on a creek, of which one-half is reserved for the Crown. Of this very short claim one-tenth is the Crown's as royalty and the miner pays the recording and renewal fees. There can be no doubt that the objections to so heavy a royalty as 10 per cent. on the gross output of the Yukon mines are not unreasonable, but one can readily understand that the Canadian Government was suddenly confronted with a very difficult problem in the administration of this distant and almost inaccessible region, and to so provide that the district itself should bear the cost of government the imposition of a royalty tax appeared to be the best and only feasible solution of the difficulty.

It will now, however, be possible to compare the relative cost of the administration of the Yukon with the revenue derived therefrom, and we have no doubt that when it is found that ordinary governmental expenditure can be defrayed from other sources, the royalty will be, if not abolished altogether, at least materially reduced.

The Hon. the Minister of Mines publishes this month in the official Gazette, an announcement rescinding the Order-in-Council of the 29th of October, 1897, providing for relief against forfeiture of mining property owing to the lapsing of a Free Miner's Certificate, the rescission taking effect "on and after the 15th of November next." This action, we understand, was necessary in

consequence of the recent judicial decision regarding the ownership of a mining claim known as the "Bismarck," in West Kootenay, of which the following is the text:

The mineral claim Gold Cure held by the plaintiffs was located on the 12th day and recorded on the 23rd day of August, 1896. The assessment work for the first year was done within the time, but not recorded until the 26th day of the month.

The mineral claim Bismarck owned by the defendants was located on the 7th day of October, 1896, admittedly in the belief that the plaintiffs had abandoned their claim and in ignorance of the proceeding taken by them under the Order-in-Council presently to be referred to. The Bismarck, which was conceded to be a valid claim, subject only to any prior claim of the plaintiffs in respect of the Gold Cure, overlaps it, and the ground common to both claims is the subject of this action.

By an Order-in-Council dated the 2nd July, 1896, after reciting that owing to the lateness of the season, the depth of snow in the mountains prohibited many holders of claims from performing the assessment work required by the Mineral Act during each year, it was, professedly in pursuance of section 161 of the Act, provided that "it shall be lawful for the Gold Commissioners throughout the Province to extend the time for a period of sixty days, to date from the 17th day of July, 1896, for the completion of the assessment work on such mineral claims as the Gold Commissioners have good cause to believe are at this time inaccessible in consequence of the depth of snow that covers the said claims."

"On the 6th day of August, 1896, the Gold Commissioner of the district, acting under the Order-in-Council on the plaintiffs application, extended the time for doing the assessment work which had not then been completed, to the 17th day of September, 1896. The work was actually finished in time to have been recorded within the year, and the only reason given for the delay was that the plaintiffs relied upon the extension.

By an agreement between the parties at the trial the only questions for determination are: (1.) Was the Order-in-Council *ultra vires*? (2.) Whether the plaintiffs can avail themselves of the assessment work having been done within the year? (3.) And are the plaintiffs, if necessary, entitled to the benefit of section 53, which provides that no free miner shall suffer from the act of any Government official?

"As to the second question, there being no evidence either way, I must assume that the Gold Commissioner has good cause for granting the extension. This being so, I know of no principles upon which the extension, if valid when granted, would become void merely because of the unexpected disappearance of the snow in time to permit the work being done within the year.

"With reference to the third question, it seems to be clear that if the Order-in-Council was *ultra vires*, the section invoked by the plaintiffs cannot apply.

It only remains to consider whether the Order-in-Council was *ultra vires*. Section 24 enacts that: "If such work shall not be done, or if such certificate shall not be so obtained and recorded in each and every year, the claim shall be deemed vacant and abandoned, any law to the contrary notwithstanding." This provision is neither ambiguous nor doubtful. To give effect to the Order-in-Council would not be to carry out the provision but to excuse

non-compliance with it. And I do not think that the circumstances dealt with in the Order-in-Council were such as were contemplated by the words: "To meet cases which may arise and for which no provision is made." Seasons were not less likely to be late after than before the passing of the Act, and if the Legislature had intended to create an exception in such event from section 24 they would have done so. It is not even as if compliance with the Act had been impossible. The work might have been done before the commencement of the winter season. To delay it was to incur a known risk of increased difficulty, with, of course, additional expense. And this case itself shows that the event sought to be provided for by the Order-in-Council is too uncertain to be ascertained beforehand.

To speak of the intention of the Legislature is as has been said by an eminent authority to use a "slippery expression," and the rule that a mining claim can be held (before grant) by the doing annually of the work required by the Act, or what it allows to be equivalent, is so essential a part of our mining laws that if I were in doubt I think I ought not to hold that the language of section 161 gives the power assumed, but I am of the opinion that to do so would be to disregard the enactments to which I have referred. The judgment will be for defendants with costs."

Whether this decision will be conducive to further litigation on like grounds it would be difficult to say, but it is quite likely that when opportunities and temptations are sufficiently strong, advantage may be taken of those who having inadvertently failed to comply with a requirement of the Mineral Act, relying on the Order-in-Council in question for protection.

But, be this as it may, it is to be hoped that upon the earliest possible occasion, those Orders-in-Council aimed to protect the claim owners against the loss or forfeiture of his property for neglect in complying with regulations which are difficult or impossible to carry out, will be embodied in the Mineral Act.

It seems now at least possible that early next spring preliminary construction work on a railroad starting from a point on the C. P. R., either at Kamloops or Ashcroft, and affording communication with the historic gold-fields of Cariboo, will be commenced in earnest. An English company known as the New Besse Syndicate, Ltd., having acquired at a cost, we understand, of \$15,000, the charter originally granted the Cariboo Railway Company, in 1890, but amended in 1897, to compel the grantees to fix the initial point of the road and the approximate line of route before May the 5th, 1899, and furthermore stipulating that actual work was to be commenced before that date. If these terms are complied with the company will be entitled, under the Subsidy Act, to a large grant of land and this independently of the apparently remunerative nature of the venture itself, should be a sufficient inducement to the new owners of the charter, who are amalgamating with the Cariboo & Omineca Chartered Company, to make every effort to secure the necessary capital for carrying out the undertaking. Such a railway would unquestionably be of incalculable assistance in opening up the rich mining and agricultural country known to exist north of the main line of the C. P. R. at Kamloops. While, of course, it is likely to be

many years before Omineca enjoys the advantage of railway transportation facilities, the commencement of work on the Cariboo road will tend to stimulate and encourage quartz prospecting in that district as well as in Cariboo itself. The quartz discoveries in Omineca this season have been eminently encouraging and there is no reason why, in the course of time, lode mining in northern British Columbia should not become as important an industry as it has grown to be on the southern boundary within the last eight years.

The investigation we are promised Mr. Ogilvie is to conduct into the charges of corruption and malfeasance that have been made against Government officials in the Yukon, are not, in our judgment, likely to bring out any very startling revelations one way or the other, if for no other reason than the difficulty that will be met with in finding witnesses ready to testify. If the charges are true, men who benefitted by official wrong-doing, and therefore participated in it, will be naturally reluctant to appear and in a sense incriminate themselves; and again, others who might be in the possession of evidence more conclusive than that of hearsay, have probably by this time, left the country not intending to return. It is suggested that this enquiry should be made the subject of a Royal Commission, and doubtless, at an enormous expense the truth or otherwise, of the injurious reports which have been circulated would be thus more satisfactorily determined. We do not, however, believe the Federal Government will consider any such course of action and the country will be politely requested to be content with Mr. Ogilvie's finding, even if his verdict is the Scottish one of "not proven." At the best the matter is more or less unsavory and the sooner it is forgotten and done with the better. The Yukon will, it may be confidently asserted, be administered in the future to the satisfaction of the mining community, and with better facilities for carrying on the public business, such as improved conditions of transport, and perhaps in due course, telegraphic advantages, all cause of complaint will be removed. There can be no doubt that the irregularities of which we have heard so much, were, in the majority of cases, not the result of deliberate official wrong-doing, but were due to the fact that the offices were undermanned. The most unfortunate part of the question is, that it has been made a subject of political party debate, and the fair name of Canada has hence been unnecessarily besmirched.

The slipshod system followed in the registration of mineral claims in the Recording offices of the mining districts is a matter to which attention should be directed, and in the interests of prospectors and others who frequently find it necessary to refer to the official records for information, it is of the utmost importance that at any rate a more convenient method of registration than that at present in force should be adopted. Taking, for the sake of example, a district where several thousand claims have been registered, some idea of the time and labour required to obtain data from the official registers concerning any one mineral property, may be gathered when it is stated that in the majority of offices at least no attempt of any kind is made at classification, and it is therefore needful to search first the "Re-

cord" book (or books) from cover to cover, and later other records to learn particulars of transfer or registration of annual assessment work—the only actual "record" of a claim being the stub or duplicate of the printed form torn from the Record Book and handed to the locator when registering his property. In any other country where mining had developed sufficiently to be classed as an industry so unbusiness-like a system of claim registration would certainly not be tolerated, and it is to be hoped the matter will receive that attention at the hands of the proper authorities it deserves. Meanwhile, we would suggest that when a claim is recorded the entry should be made in a specially prepared indexed ledger and all subsequent registrations relating to the property should be entered under this heading in the same register. This system would undoubtedly, in point of convenience and simplicity, be superior to that at present employed.

According to the *Era*, published at Golden, East Kootenay, a record in the way of claim-locating was recently established near that place by a man named McLeod who, it is stated, staked no less than fifty-three mineral (?) claims, at Windermere, in two weeks,—an average of nearly four claims to the day's work. Even assuming that this energetic individual had previously prospected this enormous area sufficiently thoroughly to find "mineral in place" upon all the fifty-three claims he subsequently staked, the feat is nevertheless remarkable and a man who could blaze the lines and cut the posts for four locations of presumably fifty-two acres each in one day and keep this up for a fortnight at a time should be in a position to command a handsome salary from the once numerous "territory-acquiring" syndicates making a specialty of floating "wild-cats" of this description. We are, meanwhile, glad to learn, on the authority of the Minister of Mines, that some effort is to be made by the Government to put a stop to the practice of promiscuous claim staking, of which the above is an ordinary example, and that this and other abuses will probably be dealt with by a Commission of representative mining men to be appointed for the purpose of suggesting necessary amendments to the present Mineral Act.

Among prospectors and claim-owners generally, there is a deep-rooted and a, perhaps, reasonable objection to the constant introduction of changes in the mining laws, for, no sooner, they complain, is the Provincial Mineral Act with its amendments, more or less, thoroughly mastered by men of their class, than its intricacies are further complicated by additional alterations of a complex character. Mere "tinkering" with the present Act is not, we admit, particularly desirable, but, on the other hand a complete revision of the mining laws by a competent board of commissioners duly representing the interests of both capital and labour would unquestionably result advantageously to the industry.

The British Columbia Chamber of Mines have commenced with an October issue, the publication of a monthly periodical named appropriately, *The Bulletin*. The first number contains several interesting articles, and we can conscientiously congratulate the Chamber on this display of energy. But if the *Bulletin* is to serve a really useful purpose its editor must aim at providing the public with authentic

statistical information of a character not easily obtainable by journals of the ordinary class. This at the present time will prove a very formidable task; but if the Chamber can win the confidence and recognition of the Kootenay mining communities, special facilities for securing desired monthly mine statistical data would doubtless result therefrom. There is meanwhile a sort of sturdy independence about Rossland and other interior camps which refuses to regard kindly Coast interference of any description, however well intended. This is not, perhaps, quite the right spirit, in the interests of the Province as a whole, but locally there is no denying, it has worked to advantage.

Our London correspondent sends us the following brief review of British Columbia affairs in the great metropolis for the month:

That Canadian mining enterprise is closely followed by the leading financial houses in this country is beyond dispute.—As a matter of fact there are very few of them which have not some Klondyke or British Columbia property under consideration. The people who bring them over to this country seem sadly disappointed because they cannot immediately, and for cash, dispose of the same. It will, probably, however, be found in due course, that where their statements will bear the strictest investigation by English engineers, they will receive all the attention to which they are entitled. The London & Globe meeting was one of the events of the month. Both the Marquis of Dufferin and Ava, and Mr. Whitaker Wright made statements which smacked a good deal of "explanations." Many people thought both gentlemen protested too much. Meanwhile, the price of B. A. C's. is 17s. And the state of the market is such that representative shares like New Gold Fields, B.C. Development, London B.C. Gold Fields, and Hall Mines, are no better than, respectively 17s. 6d., 25s. and 16s. 3d. Dealings are few and far between, and business very dull and limited.

Our report, which will be found elsewhere, of Rossland's ore shipments shows a very satisfactory state of affairs. The shipment of ore is now about 4,000 tons per week, which would make, if kept up, an aggregate of 200,000 tons in the year. Nor do the Rossland mining men speak with any uncertainty about the possibility of exceeding this weekly output. Shrewd men of business, not optimistic dreamers, confidently assert that this will be more than doubled in the course of a year or so. Now, 200,000 tons of ore at an average value of say \$20, gives a yield of four million dollars per annum. And this will undoubtedly be Rossland's output ere long. When the great Slocan country, the Ymir district, the Lardeau country and the valley of the Kettle River are also taken into consideration it will easily be seen that it is hard to over estimate the possibilities and the actualities of the great gold country in the interior of British Columbia.

Rosslanders are spending plenty of money in laying out their town. Streets are being graded and sidewalks set out, bridges planned and viaducts constructed, and the mining camp on the steep slopes is fast becoming a dangerous rival in point of size and wealth, to the coast cities of Victoria and Van-

couver. Rossland is already passing beyond the board and batten wooden building stage. Several erections are now being constructed of brick and stone, and more are to follow. There are now four banks in the city, the Bank of British North America, the Merchants' Bank of Halifax, the Bank of Montreal and the Bank of Toronto, which opened on the first of the month in the first stone building erected in the city. The Bank of Montreal are erecting a handsome brick and stone edifice in the very heart of Columbia avenue.

Montreal has bought largely into the Monte Christo, at Rossland, and has displayed the utmost faith in the management and in the property. Now the mine has been shut down and the wildest rumours are being circulated as to the cause. If the shareholders have been deceived in their expectations it will certainly tend to weaken the belief in the Kootenays, which have recently been reawakened in Eastern Canada. Already the suspicion of such a possibility has caused the stock market to suffer all round to some extent. It is a pity that the management do not take the public into confidence and state through the columns of the mining press the real causes which have governed its action. The effects do not concern the company alone and cannot be considered to be their private business, as the well-being of a whole people is influenced. Freedom of action surely does not mean license to hurt your neighbour.

Laws that are made, however well intentioned, and not carried out are but gangrenes on the body politic. Mr. Kelly, with no doubt the very best intentions in the world, was instrumental in passing the Truck Act through the Legislature, at the last session of the Provincial House. Of this Act much political capital was made during the late elections. Now, if the law is a bad law it ought not to remain on the statute books. If it is a good law it ought to be enforced. If in its enforcement certain unforeseen developments take place, the law at all events will have had its trial and can either be amended or ended. We have not heard that the boarding houses have all been shut down by the employers within the three mile radius of a corporate city. On the contrary, the War Eagle are building a magnificent boarding house on their property, where, it is needless to say, their employees will be expected to mess. It is probable that this palatial residence will not be in the name of the company, and will equally probably be in the name of some perfectly disinterested third party, but there are more ways of killing a cat than smothering it with cream.

Nor is this all. Not to mention other mining companies who are doing much the same kind of business as the War Eagle, there is to be seen a regular camp of railway men under canvas, pitched in the very centre of the townsite. What kind of evasion are these law-abiding people trusting to? Within a few weeks there was to be seen another such camp about a mile down the track. A small subcontractor lately stated the clear up of his gang there for the week was \$13, after the board bill, tool account, prices for overalls and tobacco was paid. One man was recently public spirited enough to bring action about similar treatment that he had received near Brooklyn. Unfortunately it was shown that

the camp of the work was outside the three mile radius and the cause was lost. Why does not some other public spirited individual try the same sort of case again, taking care that he is well within the legal radius? There is plenty of opportunity.

Cariboo's greatest hydraulic gold gravel mine—that of the Consolidated Cariboo Hydraulic Co., in which so many shrewd C. P. R. magnates are interested, is again making a fair preliminary showing this season, the gold yield to date amounting in value to some \$101,000, with a third and final wash yet to be made before the season closes. This may add a further value of between \$10,000 and \$20,000. The yield is not at all remarkable and it cannot in any way be considered as a test of the capabilities of the mine, in view of the fact that most of the season's work has been centered in the construction of the Moorhead ditch and other preliminary operations. It will remain for next year to be the first in which any real test can be made of the apparently large dividend earning possibilities of this and others among the greater gold gravel companies of old Cariboo the preliminary development operations at one and all of which, with their many miles of ditching, fluming and hydraulic workings, have occupied several years of skilfully directed labour, which richly deserves to reap a good reward in the early future. The same remark applies to the splendid engineering and hydraulic work that is being done in the bed of the Quesnelle River by the Golden River Quesnelle Co. Substantial production here cannot begin before next summer. However, these things notwithstanding, Cariboo gold yields of 1898 should show considerable advance on that of 1897.

The latest complaints against the undue competition of Chinese labour, which can here, after its meagre wont, subsist on a wage of as little as fifty to seventy-five cents a day, are the freighters on the historic Cariboo road, who aver that they cannot compete with the sweated imported labour from the Orient in the carriage of mining materials and provisions to the Cariboo goldfields. Thus, pending the judicial settlement on appeal of the constitutionality of the Chinese Underground Labour Exclusion Act—no sooner are the Chinese got out of our Vancouver Island colliery workings, than their protean competition springs up elsewhere to harass the unfortunate white worker, who naturally declines to lower his standard of living to that of the pig-tailed Chinaman.

In an article we publish this month from our London correspondent, the views of a number of prominent men, whose interests are more or less closely identified with this Province, are quoted on the subject of the closing of the British Columbia Agent-General's office, in London. Opinion from such a source must at least be regarded as unbiased and disinterested. There can be no question of political animus, and while it is possible some of these gentlemen with whom our correspondent conversed were on friendly or even intimate terms with the late occupant of the post, Mr. Vernon, it should be noted that they condemn not that gentleman's dismissal, but the fact that no successor is to be appointed to

this important office. Without venturing to tread the dangerous paths leading to political controversy—for this journal being strictly devoted to the mining interests of the Province has always carefully abstained from taking part in any discussions of this nature—we regret to be obliged to condemn the action of an Administration that has already evinced a praiseworthy disposition to inaugurate reforms of a wise and necessary character. The abolition of the Agent-General's office is, however, a retrogressive step for which there can be no adequate or valid excuse. At the present juncture it is of paramount importance that British Columbia should be suitably represented in the great money market of the world, and such an action as placing the affairs of a country, whose vast resources are just beginning to attract the attention of British capitalists and investors, into the hands of a private firm of estate agents is likely to create an extremely unfortunate impression. We can but hope, meanwhile, that this is merely a temporary expedient, pending the suitable selection of a person thoroughly qualified to discharge the by no means easy duties appertaining to the office. If so, we still hold to the view that, other things being equal, a resident of some standing from the mining centres of West Kootenay should receive the appointment.

The letter we published last month from a correspondent signing himself "Anti-Boomer," has called forth several replies and not a few criticisms, one somewhat indignant critic from Whitewater, going so far as to darkly hint that the editor himself wrote the letter in question in order to dodge responsibility for the statements made therein. To this correspondent we can only point out in all humility, that if the MINING RECORD had assumed a less fearless attitude in regard to wild-cat schemes and promotions in the past, its shareholders would have even better reason for feeling satisfied with the financial success of this journal than they now have. But of the letters written on the subject of "Anti-Boomer's" remarks, in only one case has there been any attempt at reply to the questions propounded by him in the matter of "Heroic mining, or mine equipment extraordinary," as especially applicable to the Whitewater, Deep, Waverley and Tangier. This reply is from a well-known and highly respected mining engineer who has made examinations both in the Whitewater and in the Albert Canyon camps. This correspondent writes: "I have just read 'Anti-Boomer's' letter. It is well written and contains much truth. The writer has evidently, however, not personally visited the Tangier or Waverley, as the actual mining work exceeds his estimate in both instances. Regarding his criticism of the Whitewater Deep, he is still further astray. If the mine owned by the Whitewater Mines, Ltd., is of value much exceeding the ore in sight, then the 'Deep' must necessarily have a greater prospective value, for the reason that a very large proportion of the vein upon the former property is already known by development, this development having been carried on to within a very short distance of the boundary between the Whitewater and the Whitewater Deep. Furthermore, the vein where exposed in the 'Deep' appears as large and as strong as above on the Whitewater ground, with considerable ore already encountered. I cannot, however, defend, what to me seems extravagant expenditure

in the matter of surface equipment. The installation of the compressor plant may be justifiable, but I refer more particularly to the erection of extensive residential and office buildings. Yet it is necessary to bear in mind that the owners of the Whitewater Deep are also proprietors of the Whitewater town-site, which may become an important place, and in criticising such expenditure this fact should be taken into consideration. Townsite owners must give evidence of faith in their own property."

Touching the Waverley and Tangier mines we are glad to learn that under the new management a more sensible policy of development is likely to be carried out, and that before setting up, as was proposed, an expensive concentrating plant, the two prospects are to be systematically proved.

A very satisfactory state of affairs prevails at the present time throughout the Slocan and there is every indication of an exceedingly active winter. The rise in the price of silver and lead is doubtless in part responsible for the heavy shipments that are now being made from the big mines near Sandon, while on Slocan Lake, according to our Silverton correspondent, the number of shipping mines is steadily increasing. As an example of the richness of the galena veins in the country between New Denver and Silverton, the history of a small mine which is now making regular monthly shipments is interesting. This property some few months ago was sold by the original discoverers for seven hundred and fifty dollars, a little later it was bonded for \$7,500 to a speculator who after, in the course of developing the claim, taking out enough ore to meet his payments as they became due, succeeded in re-selling the mine to a syndicate upon very profitable terms. But this is by no means an uncommon occurrence.

The appointment of Mr. E. C. Senkler, a Nelson barrister, to the vacant Gold Commissionership of the Yukon, is in many respects commendable, and what Mr. Senkler lacks in experience he may make up in pluck, tact and judgment—qualities he seems to have developed to an eminent degree. The position is, however, no sinecure and taking all things into consideration few would envy the new Commissioner the task he has before him.

The end is not yet of the loss, trouble and suffering caused by the "booming" of the Ashcroft trail to the Yukon, though there is happily reason to believe that few actual fatalities have happened on the route, notwithstanding the sensational contrary reports furnished by imaginative wayfarers to yet more imaginative correspondents of the New York press. There has, however, occurred a disastrous sequel to the "booming," in the suicide near Massett, on the principal island of the Queen Charlotte group of Mr. A. L. Poudrier, who did much through the press of Spokane to extol the supposed merits of the Ashcroft route. The deceased took his life by shooting, in a fit of temporary insanity, due to disappointed expectations and frustrated hopes of lucrative employment as a surveyor and explorer.

Mr. H. W. Treat of the Van Anda mine who became so well-known in and about Vancouver in con-

nection with the latest of several abortive efforts there to establish a smelter, has, so it is stated, now become convinced that mining operations on the coast and adjacent islands do not yet justify any expectation of their ability to supply a smelter located at Vancouver with 100 tons of ore a day. This, no doubt, is correct enough at the moment, but there are promising indications that a fair sized smelter can be got into full working order at some point convenient for treating coast and island ores, and there should be a sufficient ore supply to keep the smelter going continually. Moreover, the fact of the establishment of such a concern—if done on business lines, would of itself tend to quicken the development of precious metal mining, not only on the coast and islands, but also at **certain points** that are inland, as for example, the Harrison Lake district.

of the present year have just been published, the showing being in every sense eminently satisfactory. The gold yield for the period mentioned is valued at \$133,744, as compared with a worth of \$190,244 for the twelve months of 1897. This increase is quite remarkable in view of the somewhat unlucky series of circumstances which, since April, have had an effect of handicapping the gold production of this Province. The most notable evidence of progress is, however, to be found in the figures of iron output, the value of iron ore mined to June 31st being \$23,845; and of pig iron \$305,083; as against \$4,689 and \$288,128, respectively, for the whole of 1897.

It is stated on good authority that capitalists from the Midland district of England, of which Birmingham is the centre, are quietly investigating the op-



A MINERS' MEETING AT DAWSON. (Photo by Edwards Bros. Vancouver.)

It seldom happens that an American mining camp becomes even temporarily tributary to a British Columbia trading and farming centre, the reverse being too usually the case, as between British Columbia and the neighbouring State of Washington. Chilliwack is, however, a happy exception to the rule, as the little town on the Fraser is, we learn, doing a very profitable trade in mining supplies, needed by workers on the slopes of Mount Baker, on the other side of the International boundary, but at no great distance, via Sumas, from Chilliwack.

Ontario's mineral statistics for the first six months

opportunities for smelting in the coast and island districts of the Province, and also negotiating with a view to acquire, if possible, on terms sufficiently advantageous to themselves, the British Columbia Ironworks in Vancouver. As regards the smelter possibility, it is understood that these would-be investors at present rather incline to the view that the Comox district, being near the more promising mines and claims of the Mainland coast and islands, and also in proximity to ample coal and coke supplies, offers facilities preferable to the Burrard Inlet district about Vancouver. Nothing, however, has yet been definitely decided.

## SOPHIE MOUNTAIN.

**T**HERE are not many districts tributary to Rossland. Situated as Rossland is on a crown of mountain range, separated from other mountain ranges by difficult gorges, it is geographically destined to remain alone, just as it seems destined in other respects to remain a unique phenomenon among the gold producing areas of Canada. But, although this is the case there are many new promising districts which owe their first impetus and their



development in the mining energy which has its centre in Rossland. Of these, one of the most promising as it has hitherto been the only productive one, is the district of Sophie Mountain.

Since the district came into prominence there have been various explanations of how it came by its name, the most idiotic of these is that it was so called by Indians from its likeness to a sofa, and should be called "Sofa Mountain"; as if Indians were in the habit of lounging on sofas!! The true explanation

is very simple. The first claim located on Sophie Mountain was located by a prospector named Harry Hughes who, for reasons of a sentimental nature, called the claim "Sophie," and the mountain received its name in the same way as the Payne Mountain in the Slocan.

Our first illustration shows Sophie Mountain in a view taken from Red Mountain and certainly the long outline of the mountain well rounded and sloping to the confluence of Little Sheep Creek and Big

Sheep Creek might excuse some fanciful resemblance to a sofa.

Unfortunately for this fanciful derivation, and also for the rapid development of the mines on Sophie Mountain, they do not lie upon the eastern slope of the mountain which is visible from Rossland at all, but on the western slope where anything less like a sofa than the contour of the mountain could not well be conceived.

Few people, even in Rossland, discriminate between Big Sheep Creek and Little Sheep Creek, and this causes great confusion. But Little Sheep Creek is a pitiful little stream compared to the neighbour into which it finally finds its way. Big Sheep Creek is a magnificent mountain stream, rising almost to the dignity of a river, and boasting a very fine waterfall, the admiration of every traveller by the Red Mountain Railway, and full of vast possibilities as far as regards electric power. To understand the configuration of the country one must remember that the Columbia River, Dog Creek and Big Sheep Creek form a large four-sided figure, of which the Columbia River forms two sides by bending round almost at right angles. At the head of

Big Sheep Creek one is comparatively near Lower Arrow Lake. At the mouth one is away below Northport. The range separating Big and Little Sheep Creek is very high and very narrow, the lowest point being 1,000 feet above Rossland, and this was the main difficulty in the way of the Crow's Nest Pass Railway's going through Rossland, the impossibility of crossing the valley through which flows the waters of Big Sheep Creek.



1.—GENERAL VIEW OF SOPHIE MOUNTAIN FROM RED MOUNTAIN.  
2.—SHEEP CREEK VALLEY.

Some idea of the valley may be had from the accompanying illustration taken from the dump of the Victory-Triumph mine. On a clear summer morning this valley stretching north and south with just the silver thread of the creek visible at the bottom, forms one of the sublimest pictures even in this country of magnificent scenery.

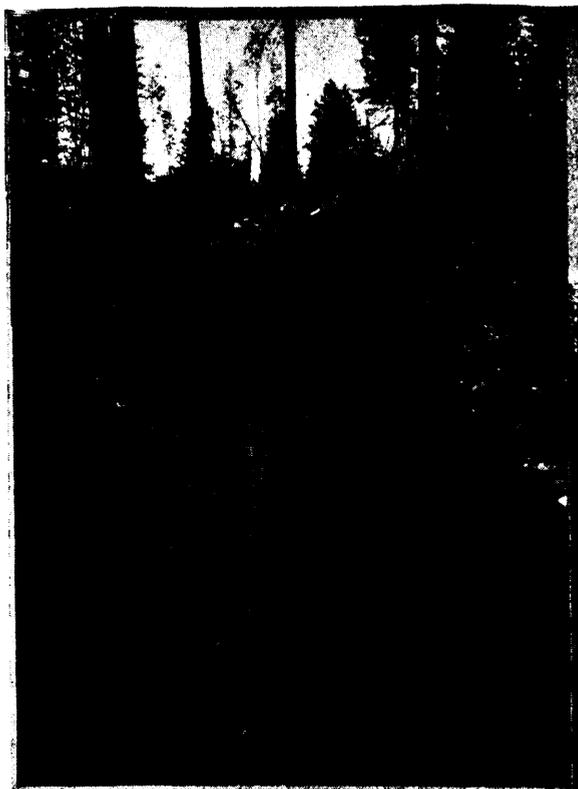
Sophie Mountain has rather a picturesque history. The old Dewdney trail crosses some distance north of its summit, and round a corral where the packers

in the old days used to collect their outfits have been found specimens of very rich copper ore, which apparently they sometimes picked up in hunting for stray horses or cattle. Curiously enough the sources of this copper ore were not discovered until the "Triumph" and "Velvet" were opened up. Yet these two mines had nothing to do with what first attracted prospectors to Sophie Mountain. Running north and south, and running far into the Reservation is an immense fissure vein of quartz, showing in places a very satisfactory outcrop of sulphide ore, and in spots rich pockets of free gold ore. In the early days the fame of this vein was carried into Trail, and Messrs E. S. Topping and L. Mulholland sent out a prospector to stake it on the Canadian side of the boundary line. In those days the Reservation was not open. Staked it was, and called the "Sophie." A good deal of work was done. One of our illustrations shows a cut on this vein now called the "Victory" vein, which brings out its enormous size, though not the fact that this cut discloses a big outcrop of sulphide ore. But what could anyone do with sulphide ore in those days? So

promptly started a law suit. But when the case came up for trial it was found there was no claim at all, as it had been jumped before it ran out. "Jeff"



VIEW FROM "VICTORY-TRIUMPH" DUMP.

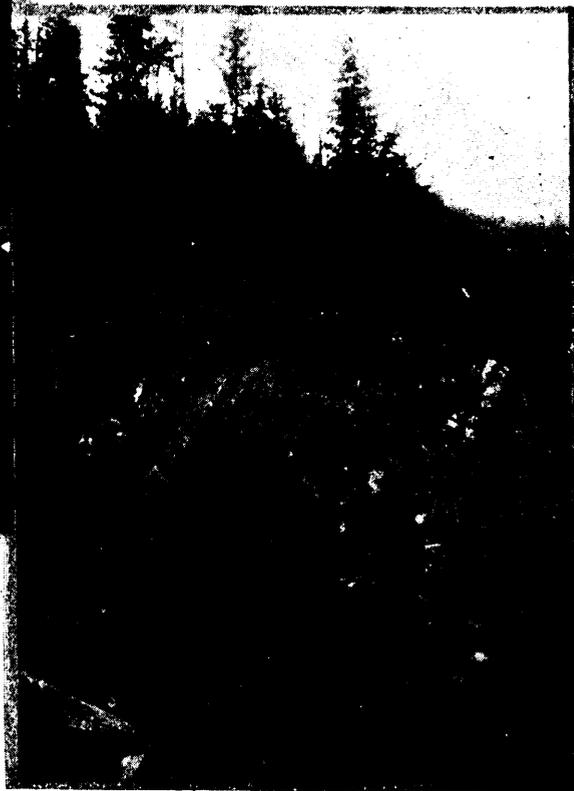


"TRIUMPH" EAST VEIN—SURFACE CUT.

the claim was abandoned. This cut has never been touched since the old days, but a long tunnel has been run to develop the vein beneath it, and it is in this tunnel that the main ore bodies of the "Victory" mine are found.

Some time after it was abandoned Jeff Lewis, of Rosslund, re-located the claim. But the history of this much handled piece of property was not over. The claim was jumped by a man supposed to do and record the assessment work. Against him "Jeff"

and his partner Jeldness burst out of court and made a race for Sophie Mountain and located the ground as the "Victory," to correspond with the "Triumph" they had previously located as an extension. In 1896, late in the fall, company promoting was at its height in Rosslund, and the "Victory" and "Triumph" were incorporated, with Lewis and Jeldness as the principal shareholders.

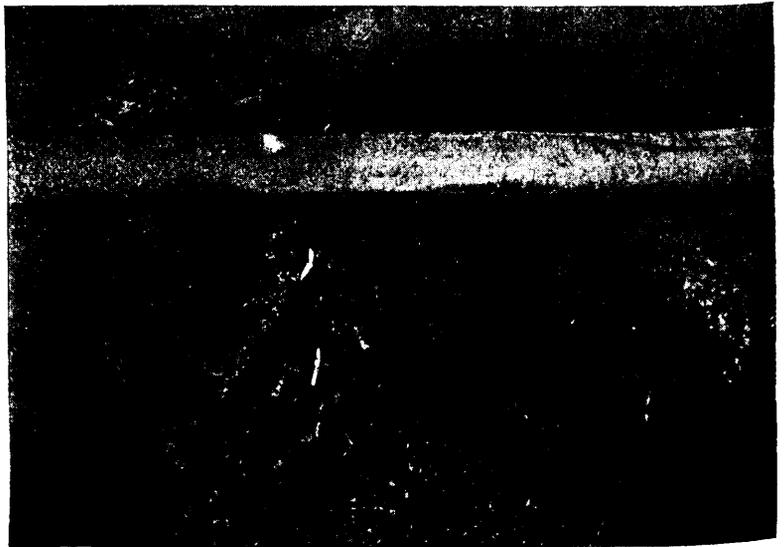


"VICTORY" VEIN—EAST CUT.

They were quite willing to have thrown in an insignificant extension called the "Velvet," but as it was very unlikely that the "Victory" vein ran through the "Velvet," it was left out. Such is the irony of mining. On the spur of the boom in stocks Sophie Mountain received its first serious development. And here a word in passing on booms. They are very hurtful things, doubtless. But if there had been no boom there would have been no "Velvet" mine nor "Victory-Triumph" mine to-day.

In the spring of 1897 company promoting and mining stocks were not in fashion. But the "Victory-Triumph" secured an English syndicate to buy control of the stock, and it is under their direction the mine is being worked to-day.

During 1896 the first assessment on the "Velvet" mine fell due, and it was truly a wonderful showing of gold-copper ore that was opened up. On the strength of it the "Velvet" was purchased by the New Gold Fields of British Columbia, presided over by Sir Charles Tupper, and it is worthy of remark, that this is the first English company in British Columbia which has developed a great mine from the grass roots. A shaft was sunk and down to the 100-



"VICTORY" VEIN—CROSSCUT NO. 1.

mentally higher. That is one peculiarity about Sophie Mountain. Never were seen such persistent gold values excluding the "Victory" vein, which is entirely different in character. Wherever there is ore there is pay.

The wonderful development of the "Velvet" has caused a great hunting for copper outcrops. One of the first results was the discovery and tracing up of the "Triumph East" vein, as it is called. Our illustrations show some of the surface work on this vein, which is very rich in gold and copper, and which was literally walked over by hundreds of feet before its existence was ever dreamt of. It is now developed by a vertical shaft 100 feet deep. Many other claims are now undergoing development. There are the "Ruth-Esther" owned by the Ruth-Esther Gold Mining Co., the "Bluebell" and "Portland" owned by the New Gold Fields, the "Whoopup" and "Tootsie" owned by the B. A. C. and the "Copper Chief" and "Copper Wonder" group, a very promising group of prospects indeed.

Some of all those will certainly make mines. Transportation will eventually be secured of a more modern kind than the useful rawhide by which the "Velvet" exported its first ore last winter; and then the great water supply of Big Sheep Creek will be brought into play to provide power. Sooner or later a brisk mining town will nestle in the valley at the foot of the mountain and another centre of wealth and enterprise be added to the growing resources of British Columbia.

#### THE CLOSING OF THE AGENT GENERAL'S OFFICE.

(From our London Correspondent.)

LIKE a bolt from the blue came this announcement from Mr. Forbes Vernon, the Agent General for B.C. :

27th September, 1898.

Acting under instructions received on the 19th inst. from the newly formed Government of British Columbia, this office will be closed on and after the 30th inst.

Of Mr. Vernon personally I know very little. A keen display of interest in the promotion of B. C. Mining Companies may have earned for him this fate, and probably we should all have been surprised



"TRIUMPH" EAST VEIN—SURFACE CUT.

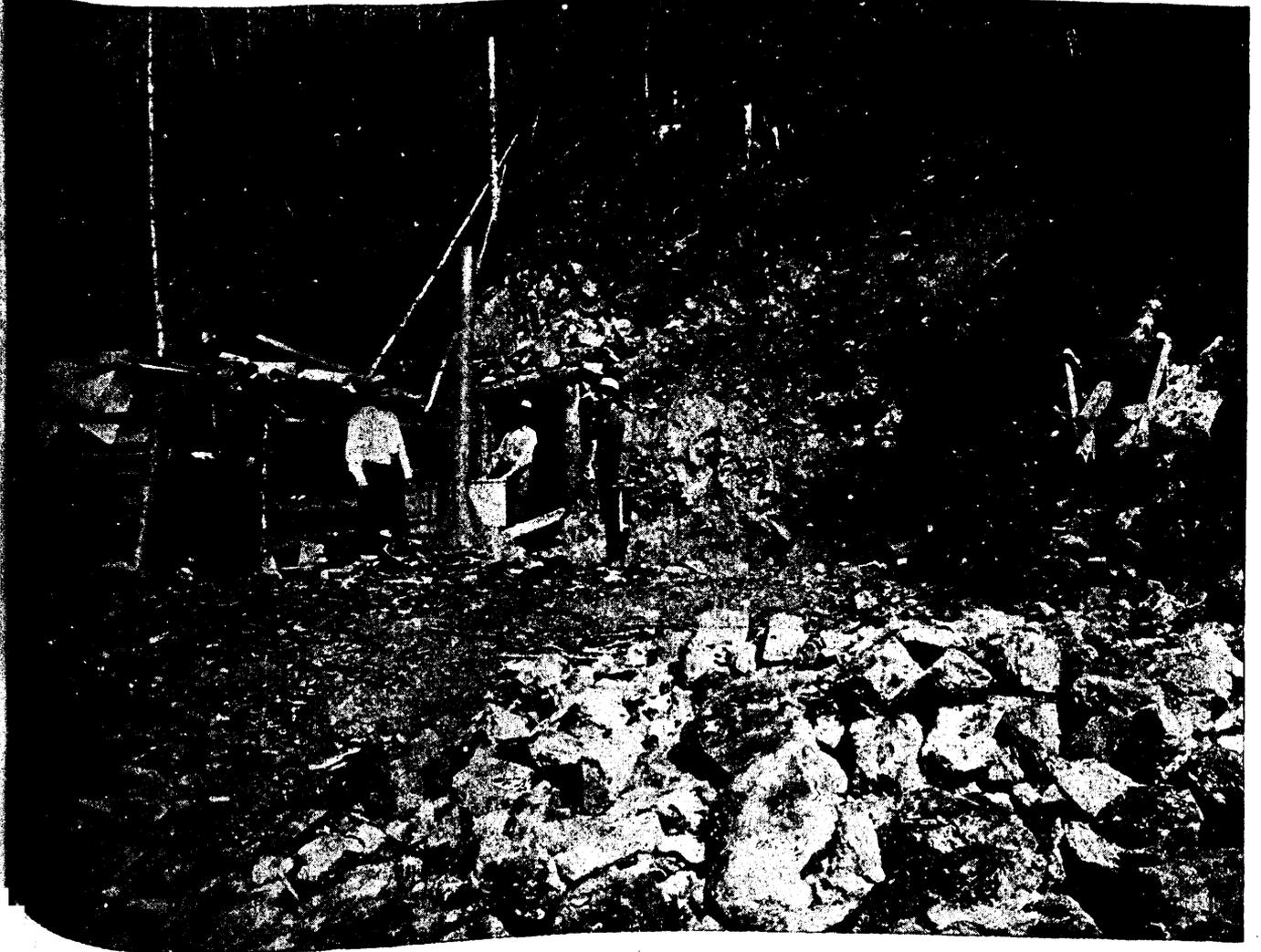
foot level everything was lovely. A really splendid body of ore was opened up. But below, the shaft went out of ore and on all sides was heard the report that the "Velvet" had played out. As a matter out. They break and fault, but they never peter out. A little exploring on the 165-foot level and the of fact the copper veins in this country do not play "Velvet" was as big a mine as ever, only with this difference, that the gold value of the ore was im-

...had not been a change of officer—but to  
 ...the office altogether, phew! that was a sur-  
 ...the surprise of the north indeed, and deserving  
 ...such prominence in your London letter. This  
 ...noon I have been having a little trip round the  
 ...gleaning from brokers, financiers, and secre-  
 ...of leading British Columbia and Canadian  
 ...their opinions of the step just taken by your  
 ...Government. Of course, Mr. Semlin's adminis-  
 ...on may have an alternative proposal to make; it  
 ...been whispered that they contemplate telling the  
 ...what they wish it to know through the  
 ... (or office) of a city firm of estate agents. Well  
 ...it is sufficient commentary on this to shrug  
 ...shoulders very pronouncedly. It would be a  
 ...thing to be able to record the removal of the  
 ...to the City, a reform I have been clamouring  
 ...one paper or another ever since I have written  
 ...British Columbia affairs. But do draw the  
 ...placing the B. C. Agency in the city of some  
 ...firm, who will depute a clerk at a pound a week  
 ...look after those who may want to obtain import-  
 ...information regarding the Province. Mind, I  
 ...not a word to say against this particular firm  
 ...estate agents, if a decision has been made. But  
 ...show one does not combine an auctioneer or 's-



GROUP OF MINERS "VICTORY-TRIUMPH MINE, JULY, 1898.

tate agents' clerk with the work pertaining to the  
 office of an Agent General, and we all regret this



VICTORY VEIN, MOUTH OF TUNNEL.

foolish step on the part of those responsible for it. As I have mentioned before, I have been canvassing the city to-day on behalf of the MINING RECORD, gathering opinions—given below—and in not one single instance have I found anyone willing to speak kindly of this absurd piece of financial vandalism. Administrative iconoclasm run mad! Poverty is no crime, but one would have expected that Provinces, as well as domestic circles, would seek to always present a good outside showing even if it were necessary to pinch in private to keep up this appearance of prosperity in public. The world is very

advertised in the London press for tenders to take over the office. There are plenty of people who would have offered to do it cheaply, and some—say a gay promoter—who would have done it for nothing in order to get kudos from his official connection with the Government. It would have been necessary to guard against this danger, but I could have named a dozen *suitable people* at a moment's notice who would have taken it on for £250 a year. That is, if economy was the motive power in the case. But surely your new Government cannot realise the impression they will make upon the public in this



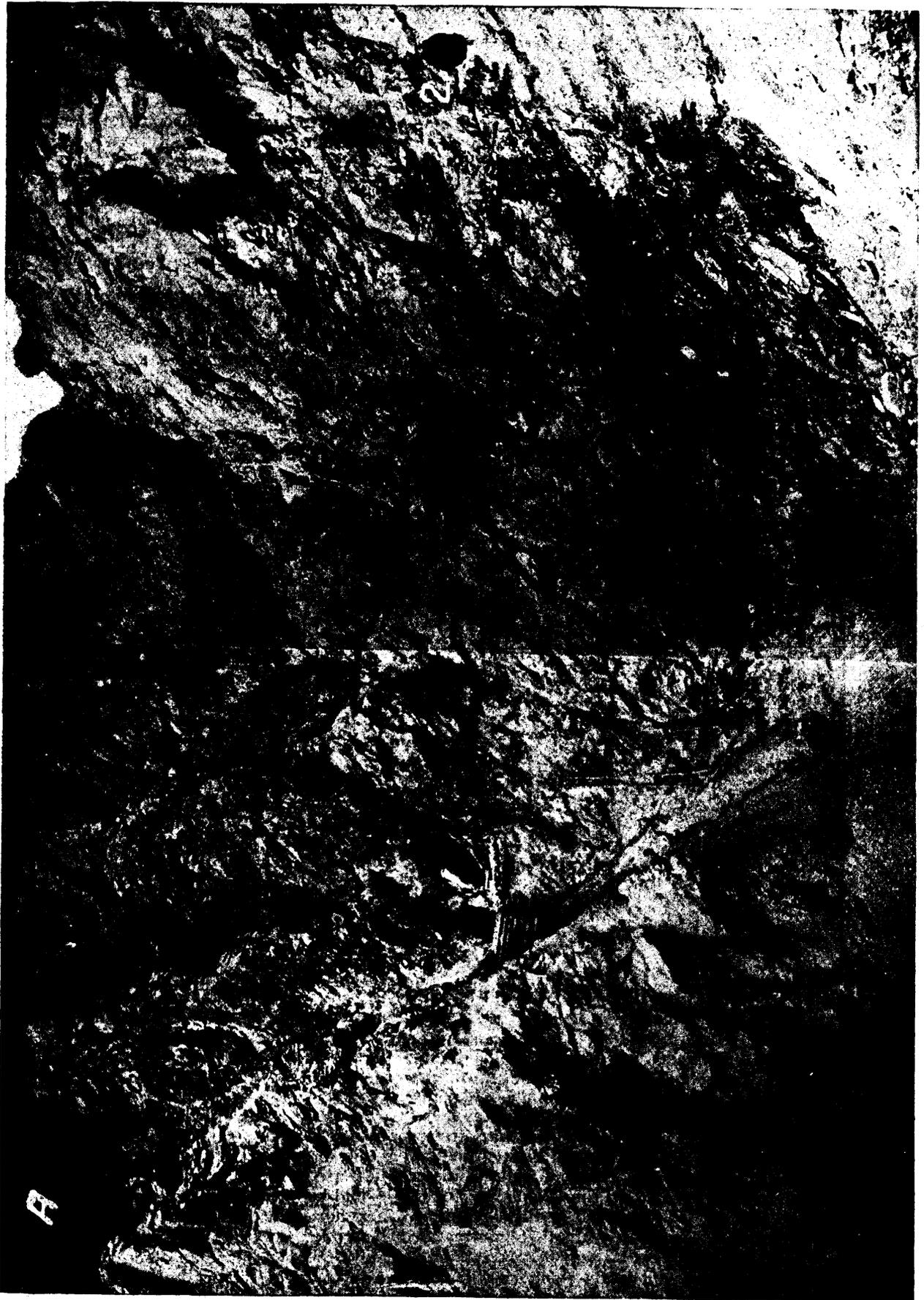
THE VELVET MINE.

ready to judge you by appearances, and I can but regret that the elect of British Columbia should have so soon proved the poverty stricken state of the country. I believe the total expenses of the office did not exceed \$7,000; whether or not Mr. Vernon gave good value for this sum is not for me to say. Like those interviewed to-day, I have left the personal side of the office out of the question altogether and simply discussed the broad facts as we have them before us. The sensible course to have adopted, if strict economy was imperative, was to have

country. The press has already derided you in such terms as "cheeseparers," "parsimonious," "niggardly," etc., and the press does really echo public opinion in this country. To abolish such an office at this juncture of your history seems to us simply suicidal. Far better to have spent another seven thousand dollars, removed the Agency to the city, and increased the facilities for obtaining information about the Province and its mines. South Africa was made on its "monthly returns," published by the Johannesburg Chamber of Mines with clock-work regularity

and exactness, and West Australia is already following suit. And British Columbia—well we have British Columbia (which hoped to run them both up

a good second) calmly deciding to abolish the office which should keep them in touch with those who have the control of the money bags of Europe. But



A PROMISING COPPER PROSPECT AT ESTRO BASIN—VEIN SHOWING POSITION OF TUNNELS.

it is no use my condemning a step which has apparently been decided upon. Let those I have interviewed to-day speak for the city, and all interested in the question which has been so prominently before us this month and has earned for British Columbia swift and severe criticism in all quarters entitled to pass an opinion or censure such a piece of wanton "reactionism."

Mr. George Whitehead, of Messrs. G. Whitehead & Chonn, a member of the London Stock Exchange, who is largely interested in the Province, and has a big and influential clientele here, many of whom are also largely interested in the Province owing to Mr. Whitehead's energies, said, the step was a very great mistake. What was really wanted was more information, that is, if the Government was really anxious

educate the public on this side by statistics, etc., the result will be reflected as in other countries by a material increase in other branches of industry, and general development of its resources."

I tried to get an opinion from Mr. Frank Scrutton, of Messrs. Scrutton & Son, of the Stock Exchange, the London director of the Wild Horse Gold Mining Co. He was out of town, but in reply to a telegram asking his opinion as to the closing of the London office, he replied as follows: "Think it will delay due appreciation of B. C. mines."

Mr. T. Edwards, of 87 Queen's Gate, S. W., writes me in reply to a similar query, as follows: "Being deeply interested in B. C., I cannot help regretting the decision of the British Columbia Government in closing the Agent General's office in London. It



A COPPER PROSPECT, ESTRO BASIN—THE WATER FALL.

to assist in the development of the country. He suggested that the Government should have an active London Agent, domiciled in the city. The South African market was built up on the monthly returns from the mines and British Columbia could only hope for satisfactory internal general developments from the gold industry. Mr. Whitehead was strongly in favour of a city office. He had himself on several occasions wanted information, and it was a nuisance to have to send up to the Wend End for it. It was the city that was interested in British Columbia matters, and it was in the city that information was wanted. "I don't think," said Mr. Whitehead, "that they remember sufficiently that South Africa was nothing until gold was found, and gold mines pushed ahead. If they will keep the industry and

appears to me that such an office is absolutely necessary in view of the large interests held by English investors in B. C."

Mr. E. A. Tadman, the secretary of the London & B. C. Goldfields Co., one of the most important groups in the British Columbia market, had not formed a definite opinion regarding the question at issue, but held the view that anything which would increase the information at the disposal of the public would be in the best interests of the country. He also agreed with those who thought that it would be better for the representative of the British Columbia Government to have an office in the city.

Sir Charles Tupper is in town but I was not able to see him to-day. In his absence, however, Mr. W. A. Stearns, the courteous secretary of the New Gold-

fields of British Columbia, Ltd., readily responded to my request for an opinion. He said there was no doubt it was inadvisable to abolish the office. If it should be decided, however, to keep on the office it should be located in the city, and should be situated where it would be available for investors seeking statistical and other data regarding the Province. The London Agency ought to be well posted with statistics, maps, etc., and if properly managed would be invaluable to investors in this country interested in British Columbia. From such

an office should be circulated and distributed such information as would help to educate English investors regarding the mineral potentialities of the Province.

The secretaries of several other groups who do not wish their names to be published, or to give "official opinions," without bringing the matter before their respective boards, gave me "private opinions" which would not be regarded as complimentary by the new Government.

Mr. J. S. Sawrey, chairman of the Anglo-Alaskan Syndicate, summed the situation and decision up in two words; "Ridiculous," "Harmful."

The Stock Exchange, Directors, Secretaries and all interested in the progress of British Columbia regret this short-sightedness policy.

What the press think (or rather a few of the leading organs, for I have not room to include a fifth of the opinions, or a tithe of the keen censure passed upon the Government) is shown by the following very brief extracts:—

The *Financial News* reported the decision at first as "a rumour in the city."

The *Daily Mail*: "A cheeseparing colony."

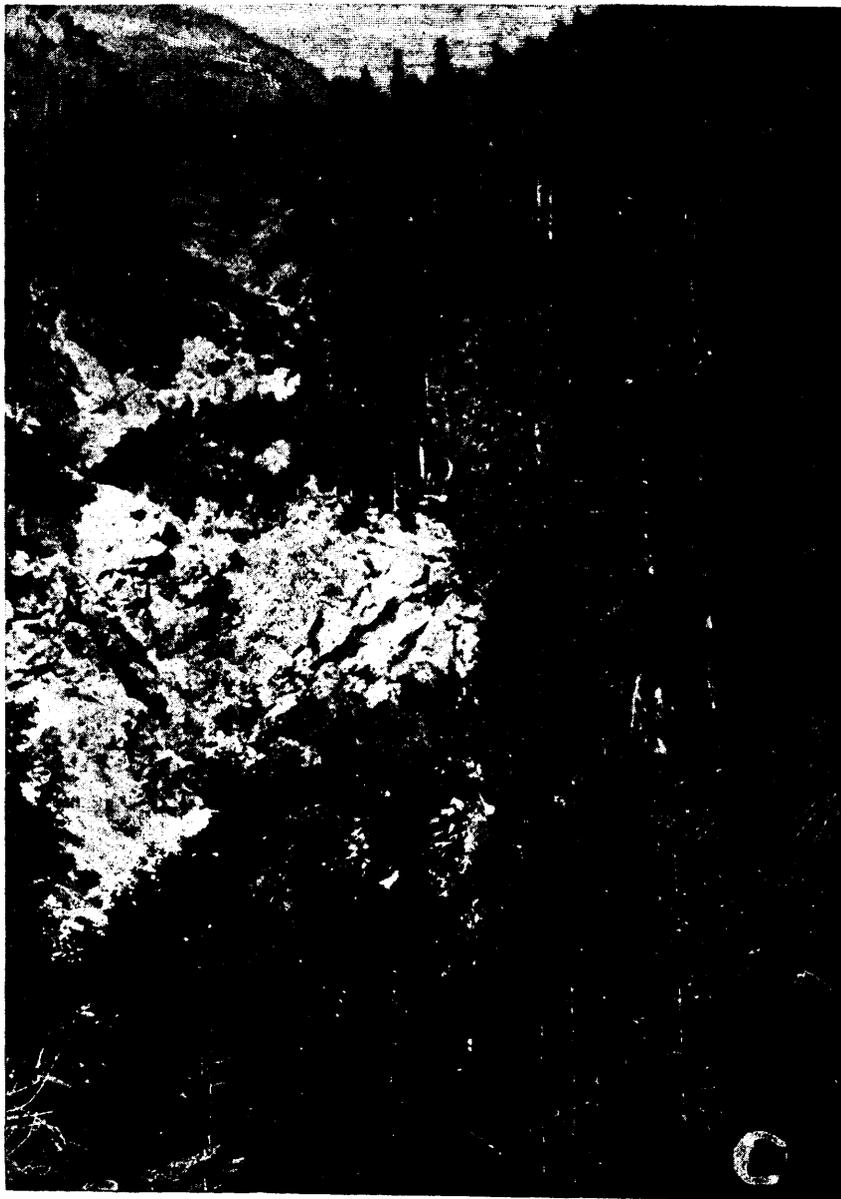
The *B. C. Review*: "This is not a progressive move on the part of Mr. Semlin."

The *Canadian Gazette*: "A regrettable action."

The *Colonial Goldfields Gazette*: Mr. Whitaker

Wright's organ. "British Columbian mistaken parsimony."

*The Critic*: Mr. Henry Hess' paper. "It is not surprising, perhaps, that the present Agent General should have received short shrift, but in abolishing the office they (the Government) have earned a general and sweeping rebuke for parsimony and shortsightedness, and in the city everyone interested regrets this ill-advised procedure."



A COPPER PROSPECT, ESTRO BASIN, VIEW OF MOUNTAIN.

### A PROMISING COAST COPPER PROSPECT.

**R**EFERENCE was made in the July issue of the MINING RECORD to a promising copper prospect owned by the British Columbia Exploring Syndicate, Ltd., an English Co. at Estro Basin, on the West Coast of the Mainland. The photographs reproduced here, for which we are indebted to Mr. W. M. Cobeldick, a son of Mr. John Cobeldick, of Vancouver, and a student at the Finsbury Technical College, London, give some idea of the rock formation in this vicinity.

Plate "A" represents that part of the formation and ore body that would be in front of a person standing at an elevation of fifty feet above the bottom of the

water-fall. The exposed rock is 200 feet high, 350 feet long, and 90 feet wide, of mineralised matter, chiefly quartz, some of schistose structure. The pyramidal shaped mass shown between the bottom of the water-fall, the figure 3, and the letter A, on plate "D" shows the appearance of the body from the west, and then there is another large exposure of mineralised material with bands of pegmatic granite running through it.

The granite is composed of red orthoclase, quartz, and a little mica and hornblende, and is mineralised similar to the other parts of the ore body.

The figures 1, 2, and 3, on plates "A" and "D" refer to cross-cut tunnels that are being driven through the ore body.

No. 1 tunnel (at the time of writing) is 141 feet in length; at the end of this tunnel an up-raise of 20 feet has been made. The first 45 feet is through a fine looking quartz, having bunches and stringers of yellow copper ore distributed through it, said to be a concentrating ore. The last ninety feet and also the up-raise is through mineralised quartz.

No. 2 tunnel at 20 feet, is in similar ground as is No. 1 tunnel at 50 feet.

No. 3. tunnel is designed to cross-cut the ore body shown on plate "D." It will be in line with No. 1 tunnel, but 75 feet deeper. The distance between the entrances to No. 1 tunnel and No. 3 tunnel is 150 feet, of which 100 feet is vein matter.

The photograph for plate "B" was taken in order to give an idea how best to lay out the work so as to avoid the danger from snowslides that come down this gully from time to time; and Nos. 1 and 2 crosscut tunnels shown on plate "A," and No. 3 shown on plate "D," were started at the points designated, in order to escape these snow-slides.

To form some conception of the enormous quantity of snow that occasionally comes over the water-fall, it is necessary to realise that the mountain shown in place "C" rises to a height of 4,000 feet from the foot of the water-fall (plate "B").

Plate "C" gives a vertical view of the mountain, 5,500 feet high; the ore body outcrops in the triangular mass of rock shown at the left hand side, and

is 1,500 feet above the sea, and one mile therefrom. Plates "A," "B," and "D" are enlargements of that mass of rock.

The country rock forming the mountain on the north side of the ore body, is hornblendic granite.

The country rock on the south side of the ore body is gneissoid granite, diorite, and other eruptives.

The fine specimens of copper ore previously mentioned were taken from an ore schute, 90 feet long and about 30 feet wide at its widest part.

No. 1 tunnel was designed to ultimately open up this ore schute at 140 feet deep; to do this it must be extended probably a further 40 feet, making it 180 feet in all.

The characteristics of the ore at the outcrop of this schute are singularly interesting to geologists, furnishing probably the finest and most interesting evidences of any ore or body yet discovered in this section of the Province. There is displayed in this ore schute a natural order of undisturbed super-position. viz: those metals of low specific gravity on top—such as molybdenite (metallic and sulphide)—freely mixed with chalcopryrite.

No. 1 tunnel, at 140 feet deep, shows a diminution of these metals of low specific gravity, and an increase of gold and metals of greater specific gravity.

The magnitude of nature's action at this spot will be the readier understood when the extent of the mineralised body is considered, viz., 250 feet wide projecting in places some 200 feet above the adjacent surface, and (in lesser dimensions) traceable intermittently through a distance of over fifteen hundred feet.



VIEW SHEWING MINERALISED ORE BODY.

## CARIBOO AS A HISTORY-MAKER.

(By R. E. GOSNELL, late Provincial Librarian.)

THE Editor of the MINING RECORD has asked me to write about the influence of the discovery of gold in Cariboo on the subsequent history of Canada. This has suggested a most prolific vein of thought, for so far as the Dominion is concerned there never was a more momentous chain of circumstances hanging upon a single historic peg.

We often read about discoveries that are bound to revolutionise the whole of the existing state of affairs. Few have had so material an effect on a nation as the discovery referred to. The sequential character of the events narrated in the famous nursery rhyme about the House that Jack built is paralleled on a scale of immense magnitude in the consequences which have flown from the panning of the first "pay dirt" in the Fraser. The house that Jack built in this example is no less a structure than the Canadian Confederation with all the potentialities and possibilities which it now possesses. That at first blush seems to be a slightly marvellous statement to make, and if true would truly imply that after all there is "no place like Cariboo."

Of course, gold was first found in paying quantities lower down on the Fraser River and its discovery there brought the first rush to British Columbia, but it led to Williams' Creek, which really fixed the population, and laid the foundations of the new colonies, in the first place created, on an enduring basis. Had the miners proceeded no farther than Yale we are quite safe in assuming that the little colonies of British Columbia and Vancouver Island would have dwarfed, and their population gradually dwindled down to nearly former dimensions under Hudson's Bay Co. rule. Thousands left before Cariboo was heard of, and the great majority would assuredly have followed their example had not the adventurous prospectors pushed their way on to fortune among the mountains and streams towards the head waters of Father Fraser. Victoria and New Westminster first existed on the chance of mining, and Cariboo was the throw of the dice which decided their future.

Cariboo has been chosen as the text of my sermon, and although it is, strictly speaking, not the starting point, it was really the sticking point, the "stake," so to speak, to which all subsequent events are chained. Before Cariboo, then, what was there? Read Bancroft, or our own historiographer Beigg, or not to be too modest the opening chapters of the Year Book of British Columbia. A territory with a history belonging exclusively to the fur-trading epoch, a country marked out by lines of trading posts, and with a sea coast the waves of which were furrowed by the prows of trading vessels similar in character to those that for three-quarters of a century had made it a rendezvous. About it Greenhow wrote in 1846 that it possessed no precious metals, no inducements as a field for colonisation and no prospects of trans-continental or trans-Pacific trade, and no resources to speak of. Some men prophesy better than they know, but that illustrious librarian of Congress prophesied without knowing at all. Unfortunately for Great Britain and Canada, it was a country the political fate of which was determined probably by suggestions of the illimitable waste of creative power it afforded rather than of the illimitable possibilities it now presents. Prior to Cariboo it belonged to and

formed part of a vast *terra incognita* west of the great Lakes, out of which not even the popular imagination of the East had begun to formulate visions of remote national concretion. It is true that about that time and for years before there had been occasional reference to the possibility of an all-rail route which would connect the Atlantic with the Pacific, and which opened up vistas of trade with the far-off Orient by a direct route, but the great West was looked upon as a territory to be penetrated in order to reach an objective point, much as we regard a swamp or a mountain as something to be got through or over, rather than as a territory, which itself would be opened up and developed and the riches of which would not only contribute to its success but render the greatest of modern enterprises and political achievement possible. When Sandford Fleming, Principal Grant and Professor John Macoun made their famous journey (now taken as a trip) from ocean to ocean, they created Manitoba and the Northwest, because Professor Macoun discovered and exposed, as deductions from its plant life, their possibilities as a grain-growing country. Hence the wheat fields of the West. But they came West, not to discover Manitoba, but to see British Columbia where Cariboo was, and which caused it to be regarded as a factor in the plans of our nation-makers. Therefore the real Canada of today began with Cariboo.

I have been asked to give you some statistics or some tangible data to show the direct influence of Cariboo on the present situation. Lord Bacon has said: "Man, as the minister and interpreter of Nature, is limited in act and understanding by his observation of the order of Nature; neither his understanding nor his power extends farther." I cannot claim to go farther. I can only ask you to look on that picture and then on this. Take Johnson's latest Year Book of Canada and compare figures with the returns in the Blue Books of 1858. Find out the difference and you have the sum of the results of gold in Cariboo. I hope none of your readers will quote this in prospectuses of companies formed for promoting mining properties up there. I am dealing now with historical sequences, not with the value of mineral claims in the vicinity of Williams' or Lightning Creeks.

I have not referred to the local effects of gold in Cariboo. I have assumed that they are fully understood or should be. Victoria, Vancouver, Nelson and Rossland, the Le Roi, Slocan Star and Silver King, and Dawson City, are all here as a consequence. To paraphrase without being irreverent, there is nothing in this Province or round about it that was made that was not made by Cariboo.

Cariboo was the point of radiation for a population that built up, explored and developed British Columbia as it is to-day. The first excitement brought an indiscriminate mass of miners from California, many of them good men, no doubt, but the majority an undesirable, nomadic class, who left soon after. The Cariboo excitement drew gold-seekers from Canada and Great Britain, and some from the Eastern States. These were men mainly, though more or less adventurers, it is true, who, coming for gold "in place" remained to find it in some other form. They were a superior class, well educated as a rule, and reared under refining influences, with a respect for law and British rule. They went to the coast to engage in mercantile pursuits, to ranche, or pursue some other avocation for the building up of a permanent colony.

The more restless spirits branched out hither and thither, following in the wake of various excitements, which led them from one end of the Province to the other, exposing mineral wealth here and there and everywhere—wealth—if not sufficient and accessible enough to enrich them, nevertheless, sufficient to demonstrate the existence of mineral deposits that promised greater development when communication was established and capital became interested. Not only were Lillooet and Yale and Kootenay penetrated and prospected, but from Cariboo, Omineca, then Cassiar, and finally the Yukon were successively reached. For years it was not the realization but the promise of results that bound the people to this Province, and hopes oft deferred are at last making the heart glad. In the meantime other resources were developed, and to-day British Columbia is becoming great through the faith that was first inspired by Cariboo.

Taking a wider view of the situation let us look at the effect on the fortunes of the Dominion thus created. The rapid events which led successively to the formation of the two colonies, their union in 1866, and Confederation with Canada later on, reduced the nebulous theory of a transcontinental railway binding all Canada together, prior to 1858, to a concrete proposition in 1871. During those momentous fifteen years Canada caught sight of wonderful possibilities.

It was a mighty stride. It is only to-day we are beginning to realise what these possibilities were, though we fail to recognise that they were conceived when the mountains of Cariboo were giving birth to its forty millions of gold.

Let us follow the sequence a little closer. It is conceded that British Columbia in 1871 was the direct and immediate result of the gold discoveries. The gravamen of the terms of Confederation was a railway connecting it with the systems of Eastern Canada. This Province was considered by the rest of the people of the Dominion to have driven a hard bargain, which, though tardily lived up to and undoubtedly would have been evaded much longer for any reasonable excuse, was at length fulfilled in 1885. Since that time national expansion has exceeded the most sanguine anticipations and such hopes for the future have been inspired that the imagination of fifty years ago could only have faintly entertained their magnitude.

What would have been the status of the Dominion to-day had accident not revealed the treasure-trove of Cariboo, it is useless for me to speculate upon, and quite as impossible to imagine as it would have been for me had I lived in 1858 to then predict the things we see to-day. It is so hard to think of so great a territory lying so long with its resources dormant, while surrounded by many and mighty agencies of development, that I relinquish the task fortunately unnecessary to undertake, but assuming that such a thing were possible we may quite safely say that Canada would to-day either be embraced within the folds of the Stars and Stripes or so limited in its national and material influences as to present a sorry contrast with her present proud position among sister colonies.

When we consider the triumph of Canada's representatives in the Queen's Jubilee in 1897, at which the greatness and strength of the Empire were revealed, we can best determine the effect of finding gold in Cariboo.

## SOUTHERN BRITISH COLUMBIA.

BY J. D. KENDALL.

(Continued from last month).

### 9. THE "FIRST BEGINNINGS" OF RECENT VEIN-MINING.

THE Hudson's Bay Company are said to have worked galena at the Blue Bell mine, by the side of Kootenay Lake, seventy years ago and converted the ore into bullets for trade with the Indians, but attention appears to have been first prominently directed to the Kootenay in 1887, after the location of the Silver King group, on Toad Mountain near Nelson, by the Hall Brothers. That property was partly opened up and worked, for a time by the Halls and their partners, but, in 1893, it passed into the hands of the present owners—The Hall Mines Co. Not much ore appears to have been shipped before the present owners obtained possession, although, according to the report of the Minister of Mines for 1892, a considerable amount of development work had then been done. "The main tunnel (the report says) has been extended 150 feet and other development work, aggregating 912 feet."

From 1887 onwards, in the summer seasons, prospecting was conducted, with more or less vigour, (notwithstanding the enormous difficulties that had to be contended with through lack of transportation facilities and in other ways) especially in the mountains adjoining Kootenay Lake and the Columbia River, in East Kootenay and on the Interior Plateau, but it was not until the summer of 1890 that any further discovery of importance was made. In July of that year the veins now worked by the War Eagle and Le Roi, near Rossland, were found. The dates on which these two important claims, and some others adjacent or near them, were located, are given below:

| NAME OF CLAIM.   | DATE OF LOCATION. |
|------------------|-------------------|
| War Eagle .....  | 7th July, 1890    |
| Centre Star..... | 7th " "           |
| Le Roi.....      | 17th " "          |
| Iron Mask.....   | 28th " "          |
| Josie.....       | 28th " "          |
| Columbia.....    | 4th Sept. "       |
| Kootenay.....    | 4th " "           |

The relative position of these claims is shown on figure 3.

The first shipment of ore (10 tons) was made from Le Roi in the spring of 1891. In the report of the Minister of Mines for 1892 it is stated with regard to this mine and the Centre Star that "On these claims work has been prosecuted continuously, and development work has exposed large bodies of ore—12 miles of waggon road from Le Roi mine, the centre of the Trail Creek group have, by private subscription been built to the International boundary. Over this road \$4,000 worth of ore has been taken from the O. K. mine and supplies shipped in."

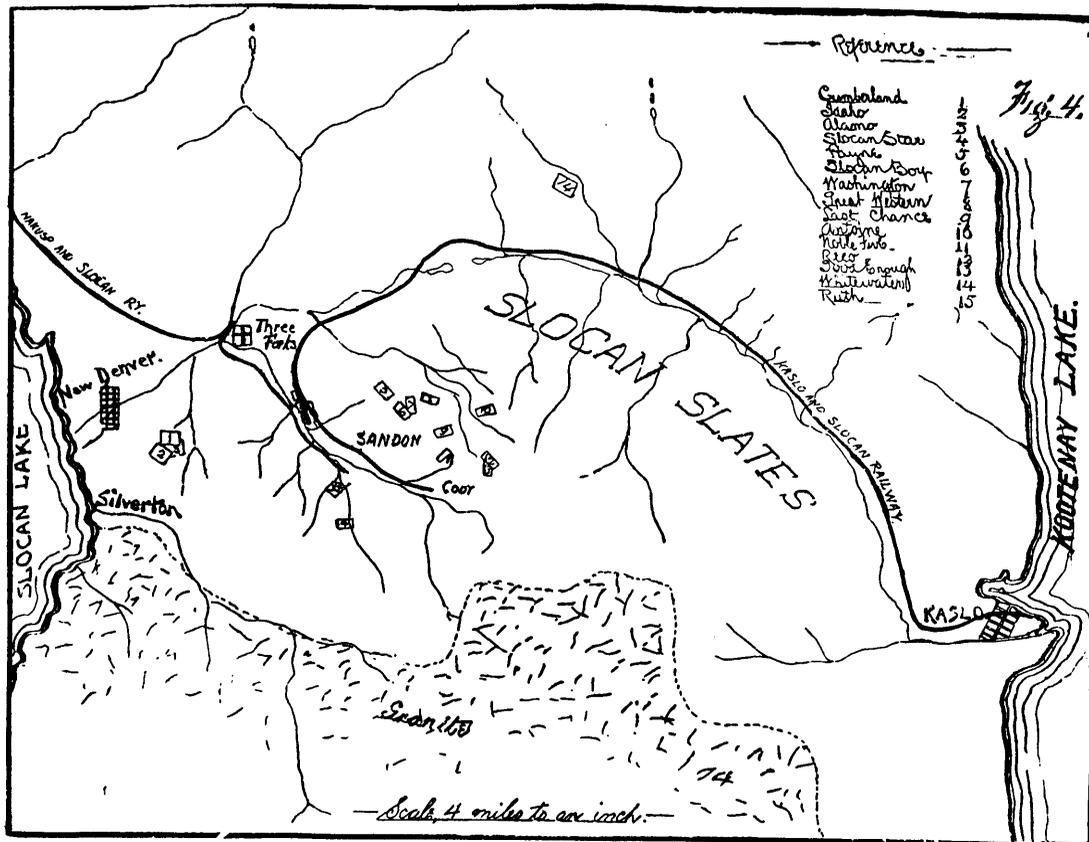
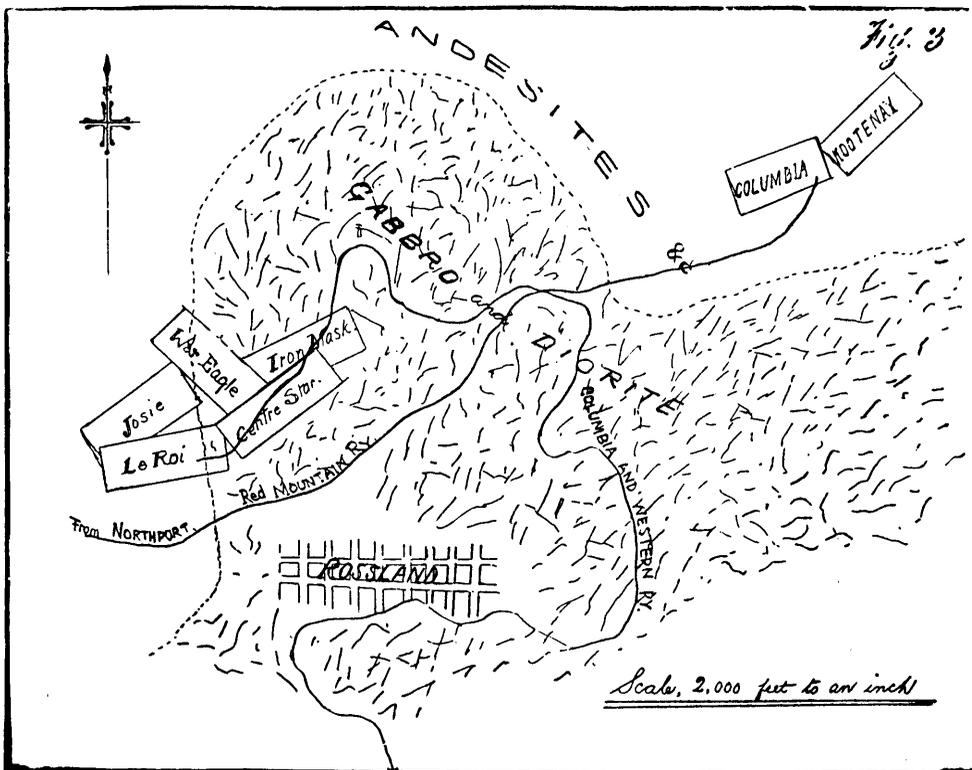
In 1893 250 tons of ore were shipped from Le Roi to Tacoma smelter. Thirty men and three teams were employed, but it was not until February, 1894, that anything like continuous and regular shipments were commenced.

The War Eagle after a somewhat uncertain and troubled career began shipping in January, 1895, and from that time until January, 1897, when the mine changed hands, was a regular and important shipper. The new company pursued a different policy—confining themselves almost entirely to development, until smelter charges should be reduced; but they are now in a position to deliver a large quantity of ore, and are said to have made a contract with the Trail smelter for \$7.50 per ton freight and treatment. At the time they decided to suspend deliveries these charges were about \$9.50.

In the autumn of 1891 the first locations were made in the Slocan—The Payne being located on the 9th September of that year, and the Noble Five group about the same time. In the following summer a number of other discoveries were made in the districts adjoining these claims and shipments of ore were made in 1892, the first mine to ship being the

1892-3, ore was packed out from the Washington, Freddy Lee, Idaho and Mountain Chief. Since that time the history of development in the Slocan has been a record of great activity and of almost continuous success.

Figure 4 shows some of the more important locations in that area. In 1892, according to the report of the Minister of Mines, the following mines were in operation—Payne, Slocan Star, Noble Five, Washington, Freddy Lee, Blue Bird, Dardanelles, Best, Idaho, Great Western, Queen Bess and Lucky Jim. In 1893, according to the same authority, the Noble Five shipped three hundred and fifty tons of ore and the Payne 100 tons. The shipments of the Payne now



Whitewater, which packed out its trial lot in July, 1892. About a month later the Best and Dardanelles entered the shipping list, and, in the winter of

are about 1,600 tons per month.

As the prospector got farther afield important discoveries were made in other districts. The North

Star in East Kootenay being located in June, 1892. Somewhat earlier the vein worked by the Cariboo gold mine in Camp McKinney, was found; but, with the exception of assessment work very little appears to have been done there prior to 1893. The first shipment of bullion from that mine took place in April, 1894, and since that time it has regularly shipped bullion and concentrates.

It is unnecessary to refer to the early attempts at vein-mining in the numerous other districts that have been explored as they are still more or less and for a variety of reasons in the prospect stage. Enough has been said to show that vein-mining in British Columbia is a very recent growth, the reason for which will appear later.

#### 10. ORES AND ORE DEPOSITS.

It is proposed to notice here only those ores which carry either gold or silver, as they are the only ores at present sought or worked. In all the ores carrying gold some silver is present and both the precious metals are almost always associated to a greater or less extent, with one or more of the base metals—copper, lead, zinc and iron. In the nomenclature of such complex ores—if the base metals are not present in sufficient quantity to be saleable the ore receives the name of the precious metal having the greater value.

The principal gold ores are:

1. Gold-copper ores, as worked by Le Roi and War Eagle at Rossland.
2. Gold-bearing pyrrhotite and pyrite, as worked at the Columbia-Kootenay mine at Rossland.
3. Gold-bearing quartz, as worked at Cariboo mine, Camp McKinney.

The principal silver ores are:

4. Silver-copper ores, as worked at Silver King mine, Nelson.
5. Silver-lead ores, as worked in the Slocan.
6. "Dry" Silver ores, that is ores containing too little base metal to form a carrier.

The gold-copper ores of Rossland contain auriferous chalcoppyrite and pyrrhotite, with some auriferous pyrite and arsenopyrite. These ores occur, along with quartz, in a more or less reticulated form through the country rock. Where most concentrated, the metallic minerals named form a very large proportion of the deposits. The more concentrated ore is usually spoken of as first-grade ore, the less concentrated as second-grade.

The general constitution of these ores, when not much mixed with country rock, is fairly well indicated by the following analytical results of a piece of War Eagle ore:

|                      |        |                   |
|----------------------|--------|-------------------|
| Copper.....          | 14.73  |                   |
| Iron.....            | 29.80  |                   |
| Sulphur.....         | 23.20  |                   |
| Alumina.....         | 1.54   |                   |
| Zinc.....            | .26    |                   |
| Lime.....            | 5.56   |                   |
| Magnesia.....        | 2.09   |                   |
| Carbonic Acid.       | 3.23   |                   |
| Silver.....          | .27    | 7.88 ozs. per ton |
| Gold.....            | .006   | 1.77 ozs. per ton |
| *Insoluble residue.. | 19.62  |                   |
|                      | 100.06 |                   |

One thousand seven hundred tons of first-grade

\* Sixty-eight per cent. of this was silica, the greater part of the remainder being iron and alumina.

ore, shipped from Le Roi, yielded on the average, according to the smelter returns:

|             |       |              |
|-------------|-------|--------------|
| Gold.....   | 1.87  | ozs. per ton |
| Silver..... | 2.61  | " " "        |
| Copper..... | 4.54  | per cent.    |
| Iron.....   | 25.06 | " "          |
| Silica..... | 45.18 | " "          |

Four thousand five hundred tons of second-grade ore from the same mine, yielded, as per smelter returns:

|             |      |              |
|-------------|------|--------------|
| Gold.....   | .94  | ozs. per ton |
| Silver..... | 1.19 | " " "        |
| Copper..... | 1.76 | per cent.    |

Over 1,500 tons of first-grade ore, shipped from the War Eagle mine gave, as per smelter returns:

|             |      |              |
|-------------|------|--------------|
| Gold.....   | 2.14 | ozs. per ton |
| Silver..... | 3.48 | " " "        |
| Copper..... | 5.87 | per cent.    |

An assay of the concentrated pyritous ore—that is, containing but little country rock—occurring at a depth of 500 feet (vertically) in Le Roi No. 1 shaft gave:

|             |      |              |
|-------------|------|--------------|
| Gold.....   | 2.2  | ozs. per ton |
| Silver..... | 2.0  | " " "        |
| Copper..... | 3.4  | per cent.    |
| Iron.....   | 20.1 | " "          |
| Silica..... | 29.0 | " "          |

A piece of second-grade ore, consisting mainly of a basic volcanic rock with strings of chalcoppyrite through it, contained:

|             |      |              |
|-------------|------|--------------|
| Gold.....   | 1.2  | ozs. per ton |
| Silver..... | 1.5  | " " "        |
| Copper..... | 4.5  | per cent.    |
| Iron.....   | 9.0  | " "          |
| Silica..... | 52.0 | " "          |

The gold in these ores occurs mainly in the chalcoppyrite and pyrrhotite, but also in the pyrite and arsenopyrite. The greatest relative, if not the greatest absolute value, however, is in the copper, as shown by the following assays, of a piece of ore, formed of chalcoppyrite and pyrrhotite, from the War Eagle mine. The two minerals were first assayed together, and, afterwards separately.

|             | Ore before Separation. | Pyrrhotite.      | Chalcoppyrite.    |
|-------------|------------------------|------------------|-------------------|
| Gold.....   | 2.25 oz. per ton       | .85 oz. per ton  | 2.5 oz. per ton   |
| Silver..... | 6.25 oz. per ton       | 3.15 oz. per ton | 10.75 oz. per ton |

To make sure that the separation of chalcoppyrite and pyrrhotite was sufficiently complete, for the purpose, an assay was made of the pyrrhotite, for copper, but not a trace was found.

Part of the gold in these ores is free, as shown by the following amalgamation tests of War Eagle ore: containing 2.25 ozs. of gold per ton. When pulverised to pass 40 mesh, one oz. of gold per ton was extracted. When further reduced, so as to pass 100 mesh, 1.25 ozs. of gold was extracted. Still further pulverisation would, doubtless, liberate a larger percentage.

That some of the gold in Le Roi ore can be extracted by amalgamation was demonstrated by three

Golden Cache Mine



Half Size  
Fig 5.

- A Argillite
- B Quartz
- C Gold

mill-tests of low-grade ore, from that mine, made at the O. K. mill, in 1897:

|                                       | Test No. 1. | Test No. 2. | Test No. 3. |
|---------------------------------------|-------------|-------------|-------------|
| Weight of ore tested...               | 38,983 lbs. | 19,546 lbs. | 43,900 lbs. |
| Value ore tested per ton              | \$8 00      | \$10 40     | \$8 40      |
| Value Gold and Silver saved on plates | 3 57        | 4 10        | \$3 91      |

A number of accessory minerals occur in these deposits which need not here be mentioned.

as the gold-copper ores. The gold in them is less than in the gold-copper ores just as it is less in the pyrrhotite than in the chalcopyrite when those two minerals occur together.

An assay of ore, of this description, from the Kootenay mine gave the following results:

|             |                 |
|-------------|-----------------|
| Gold.....   | .7 ozs. per ton |
| Silver..... | .5 ozs. per ton |
| Iron.....   | 30.9            |
| Silica..... | 32.6            |

The gold bearing quartz ores—Frequently carry visible (coarse) gold in the joints of the quartz, as at the Poorman mine near Nelson and as shown in figure 5, a piece of the Golden Cache vein, but the gold is more generally associated with pyrite, as at the Cariboo mine, Camp McKinney, or with chalcopyrite. At the Cariboo mine coarse gold has been found, especially near the surface, but by far the greater value is, and has been, in the sulphides—mostly pyrite with a little galena and less blende. These sulphides form about 2.75 per cent., by weight of the ore and with a 30 mesh screen, about 77 per cent. of the gold value is extracted by amalgamation. Of the remainder of the gold contents, about 11 per cent. is obtained from the concentrates. The tailings have not yet been treated.

The influence of fine crushing on ores of this class, is shown by the following amalgamation tests, of some of the sulphides from this, Cariboo, mine. A fire assay of the sulphides treated gave:

|             |                   |
|-------------|-------------------|
| Gold.....   | 6.75 ozs. per ton |
| Silver..... | 5.75 ozs. per ton |

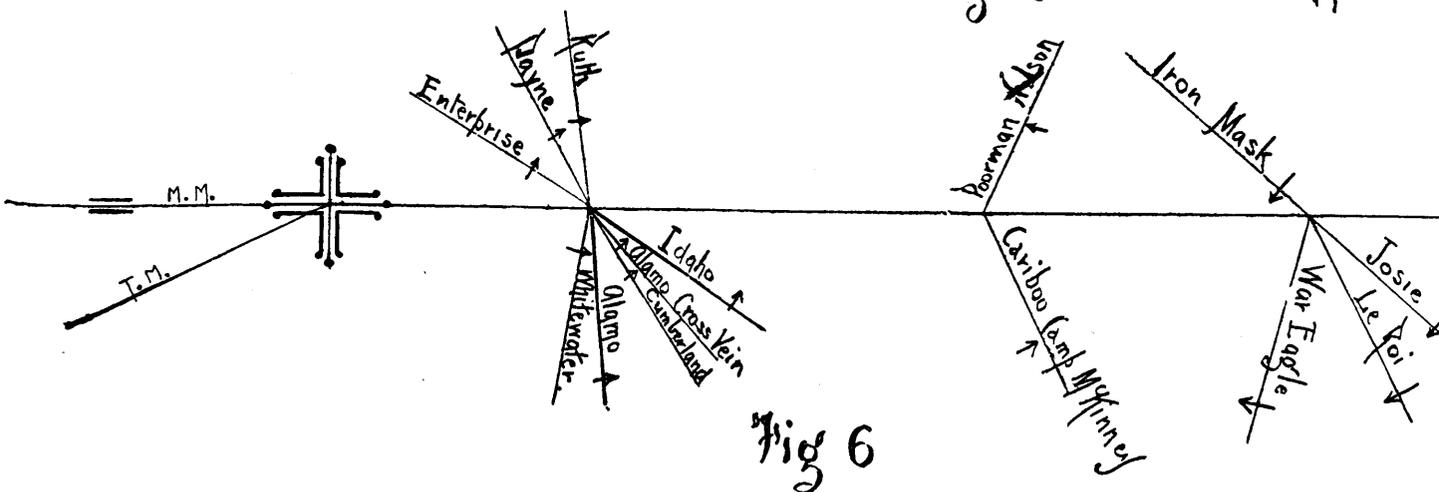
The ore was crushed to pass twenty mesh. Out of this pulp, after the above assay had been made the 100 mesh was sieved, and then the 40 mesh. The amount of gold extracted by amalgamation from the different sizes was as under:

|                   |                  |
|-------------------|------------------|
| From 20 mesh pulp | 1.5 ozs. per ton |
| “ 40 “            | 2.5 “ “          |
| “ 100 “           | 4.00 “ “         |

Direction & Dip of Veins.

Silver Lead

Gold-bearing Quartz Gold-Copper.



The gold-bearing pyrrhotite ores do not demand any detailed notice. They occur in the same way

Confirmation of these results is obtained by sieving the concentrates from the Cariboo mill and

assaying the different sizes. Then, of course, the largest size contains the greatest quantity of gold and the smallest size the least quantity. Similar tests were made on sulphides from the Poorman mine (White vein) with like results.

Some of the veins on Fire Mountain, near Harrison Lake, yield an unusually high percentage of free gold. From a two-ton sample of ore, from the Moneyspinner mine, 90 per cent. of its gold contents was extracted by amalgamation, with a machine which was out of order at the time. In a laboratory test, of the same ore, 98 per cent. of its gold contents was obtained by amalgamation. The gold occurs in a minute metallic scales in a ribboned quartz which contains only about .3 per cent. of sulphides. A test of the Oro Fino ore gave 83.75 per cent. of free gold.

(To be continued.)

#### HYDRAULIC ELEVATORS IN CARIBOO.

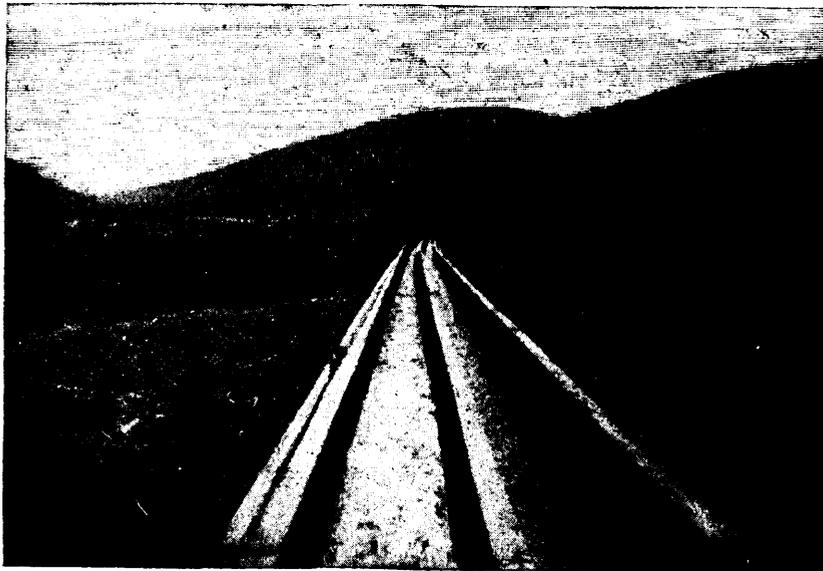
IN the March number of the MINING RECORD of this year, Mr. G. O. Leask, a well-known Cariboo mine owner published an article descriptive of the large improved hydraulic elevator plant then being installed by the inventor, Mr. R. H. Campbell, of San Francisco, on the property of the Cariboo Gold Fields, Ltd., on Williams Creek. We are now enabled to supplement Mr. Leask's article with a more detailed account of the principle and operation of these elevators.

The chief advantage or improvement claimed for the Campbell Hydraulic

Gravel Elevator is the manner in which the throat castings are constructed and put together, the inventor having succeeded in overcoming the difficulty of constructing the throat parts so that they would sufficiently resist the enormous force of the gravel entering the elevator, and thus prevent the breakage of the castings. In other types of elevators the throat castings are invariably flanged and rigidly bolted together, while in Mr. Campbell's device steel rings, placed one above another and held together by a circle of wooden staves, have been substituted. Between the steel rings and the wood a sheet of rubber a quarter of an inch thick is inserted, and the whole is firmly held in position by four rods which pass from the bottom flange to the top flange, the wooden staves receiving the weight and leaving the steel rings free to cushion against the rubber and wood and relieving them of the shock consequent on the force and velocity with which the gravel enters the elevator. The elevators are made in two patterns, single and double, the latter style being in use in Cariboo.

The double elevator is especially adapted in cases where there is no drain to the pit and where the elevator must be depended on to keep the pit free from water.

Being double-acting it is in reality a double elevator or two elevators placed side by side, both receiving the material from the same bed-rock sluice and both delivering into the same upper discharge sluice; each doing its own pumping, or one will pump for the other alternately, thus obvi-



LOOKING DOWN THE FLUME FROM ELEVATOR.—CARIBOO GOLD FIELDS LTD., CARIBOO, B. C.



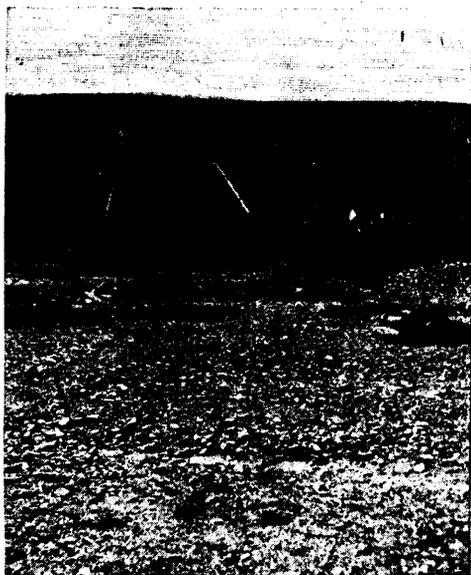
CARIBOO GOLD FIELDS, LTD.—DUMP OF THE MAIN SLUICE AND WEST FLUME, WILLIAMS' CREEK, CARIBOO, B. C.

ating the necessity of having a water lifter to keep the pit dry when not elevating gravel, which is a great saving of time and water, a no small item of expense in this system of mining. This system will necessarily work to a great advantage when the water supply is variable in volume during the season, which is very often the case.

Its capacity is governed by the quantity of water at command; both upcasts can be operated with a large or small quantity of water, thus utilising a larger quantity when available, that would run to waste in using the single upcast elevator, but the capacity of a plant depends upon the amount of water used, for instance, 1,000 miners' inches will elevate 1,800 to 2,000 cubic yards of ordinary gravel, while 1,200 to 1,400 inches will elevate 2,400 cubic yards. This operation of one of their plant is the same as in ordinary hydraulic mining. The elevator if properly adjusted to the existing conditions will run without any or very little attention.

On the other hand, the work can be carried on with a much smaller water supply than is possible with the single elevator, for the reason that the upcasts being

smaller, one can be used and good work done, while the other stands idle, thus utilising the minimum quantity of water. Much inconvenience is also



VIEW OF PIPE LINE TO ELEVATOR.

prevented in "cleaning-up" by using this system, for while one is being "cleaned-up" the other can be run with a full head of water, keeping the pit dry, thus making a better job of "cleaning-up."

There is also a great saving of time and water, and consequent expense, in using one of these double-acting elevators, for it sometimes occurs that a boulder or some other solid matter will enter the elevator that is too large to pass through the throat. In such an



OPENING THE PIT.

event the water must be shut off until the obstruction is removed, but if the double elevator is used, one can continue working, while the choked upcast is being

relieved of the obstruction. Another great advantage is the manner in which it is constructed for receiving air into the upcasts continuously when working, which is very important in elevating gravel, for when air is prevented from freely entering the lower end of the upcasts simultaneously with the gravel, gravel cannot enter, and therefore accumulates at the entrance and interrupts the work.

In reality there is no such thing as overloading or choking one of these elevators with gravel, when the water is properly applied, and the most essential point is to apply the water properly to get the greatest service.

The cost of the double machine is very moderate, varying between two thousand and two thousand five hundred dollars, according to the distance of the lift and the length of the upcast. The machines are made of the hardest and toughest metal known, and when



PREPARING THE WOOD PORTION OF THE ELEVATORS BEFORE PLACING THEM IN THE INCLINE.

the pressure does not extend 300 feet the wear is very inconsiderable.

After some three years of preliminary work and preparation, which included the construction of the large flume shown in our first illustration, over two thousand feet in length, to carry water from Williams Creek to the scene of operations, the elevators were successfully placed in position this spring and on the 25th of May work was started, Miss Emma Campbell putting in the first shovelful of gravel into the elevator. Operations have since been carried on very successfully, taking into consideration the fact that the men employed by the company were quite new to the work and the difficulties of opening the pit under these circumstances. Notwithstanding the high lift of ninety vertical feet, the elevators have, however, stood the severe test to which they have been subjected and their capacity and power have been sufficiently demonstrated by the run of sixty twenty-four-hour

days for which the water supply lasted. The pit now opened is about seventy feet deep and large enough to admit of sluices being placed in it to convey the gravel to the elevators, and next season the Company propose to use derricks for hoisting the heavy rocks and thus greatly facilitate the gravel-washing operations. Two additional elevators of large size are also to be then installed in order to utilize the water which now goes to waste during the months of June and July when the creeks are replenished from the melting of the winter's snow. The introduction of this hydraulic-gravel-elevating system by the Cariboo Gold Fields, Ltd., marks an important epoch in the history of Cariboo mining, and already other companies owning promising leases are securing water rights and otherwise making preparation for the installation of machinery of the same type. In the preparatory work really lies the chief expense of the installation. For instance on the Cariboo Gold Fields, Ltd., claims the first thing that was done was to run through sluices all the gravel that it was necessary to handle while prospecting before act-



FLASH-LIGHT VIEW, PLACING ELEVATOR IN POSITION AT FOOT OF INCLINE 75 FEET BELOW SURFACE.

ual operations were commenced. Then a shaft 5 x 8 feet was sunk to bed-rock to a depth of nearly seventy feet, and a second inclined shaft sunk at right angles to the first in which the elevators are now placed, the water pipes passing down the second from a pressure box in position at the main

ditch and carrying the water to the foot of the elevator under a vertical head of 792 feet. There are 5,000 feet of this piping which is made of welded wrought iron, and was imported all the way from England. The sluices and the drainage tunnel were also heavy items of cost, the former having been built on high trestles, 20 feet above the ground, for a distance of 800 feet, and made in two compartments paved with wooden riffle blocks. At the pit the pipe of the elevator is built into this sluice, a great hood of steel being constructed over the discharge to withstand the tremendous force with which the gravel and boulders are propelled through the pipe by the elevators. When it becomes necessary to move the elevators as the pit is enlarged, the sluice can be correspondingly extended. The drainage tunnel, which was a very heavy piece of work, was driven for a distance approximating three thousand feet, starting from Little Valley Creek. By this tunnel all the surface water is turned away from the workings, and the danger of flooding is thus avoided.



FLASH-LIGHT VIEW OF STATION AT FOOT OF INCLINE, WHEN ELEVATOR IS PLACED.

Although at the present writing the full results of the season's work are not procurable, it is not expected that the clean-up from the Cariboo Gold Fields Company's properties will, this year, be more than moderately large, owing to the fact that very little bottom gravel has been washed, work having been confined principally during the past months to opening the pit sufficiently to admit of sluices being placed in position and to making the banks safe to prevent accidents occurring to the workmen in the pit; nevertheless, from the partial returns made, the adaptability of the Campbell system to the recovery of gold from the Cariboo gravels has been fully demonstrated.

The Horsefly Gold Mine Company are also employing hydraulic elevators, and are working two giants on the slope of the bedrock following it along. A channel 2,000 feet wide has been opened, and four acres have been sluiced off, coarse gold being met with as depth is gained. There is also a good deal of fine gold, but up to the present time no effort has been made to save it. Water is taken from two large lakes near Moffat Creek. The water is brought down by

California; they have, however, lately been introduced into Australia and New Zealand.

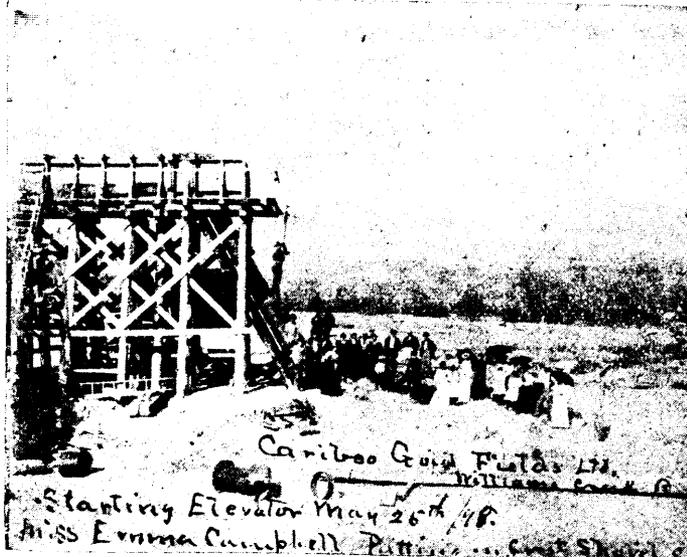
THE IRON MASK MINE AT KAMLOOPS.

(By M. S. Wade, M.D.)

A GREAT deal of interest has always centred around the Iron Mask group of claims on Coal Hill, the chief reason being, perhaps, because it was the first property in this new camp upon which systematic development, with any appreciable result, was carried out. More than once attention has been called through the MINING RECORD to this mine and to the difficulty for some time existing between the owners and their superintendent, which so unfortunately hampered the progress of the work. Happily this matter was satisfactorily adjusted during the past summer, and now there is every prospect of the mine passing into the hands of new owners, who will use every means to place the

property upon a shipping and dividend-paying basis.

The Iron Mask, situated about six miles south-west of the town of Kamloops, on the northern slope of the westerly extension of Coal Hill, was located by three



STARTING THE ELEVATOR IN MAY LAST.



HYDRAULIC ELEVATOR—VIEW ON HORSEFLY RIVER, CARIBOO.



WILLIAMS' CREEK, ABOVE CANYON.

means of a canal a distance of five miles, then through a flume for one mile, and through 30-inch steel piping for three miles.

These elevators are the first to be employed north of

prospectors named Breeden, Ford and Lyon, on the 18th August, 1896, as were also the Sunrise, Copper and Queen, which are included in this group, together with the Bonnie Etta and Bonnie Olive, located a

little later in the same month. Mr. W. T. Newman secured the properties located by this trio of prospectors for his principals, and at once commenced to develop the Iron Mask claim, and with the exception of the interval pending the settlement of the dispute between Mr. Newman and his former principals, work has been carried on by a small force of men from that time until quite recently.

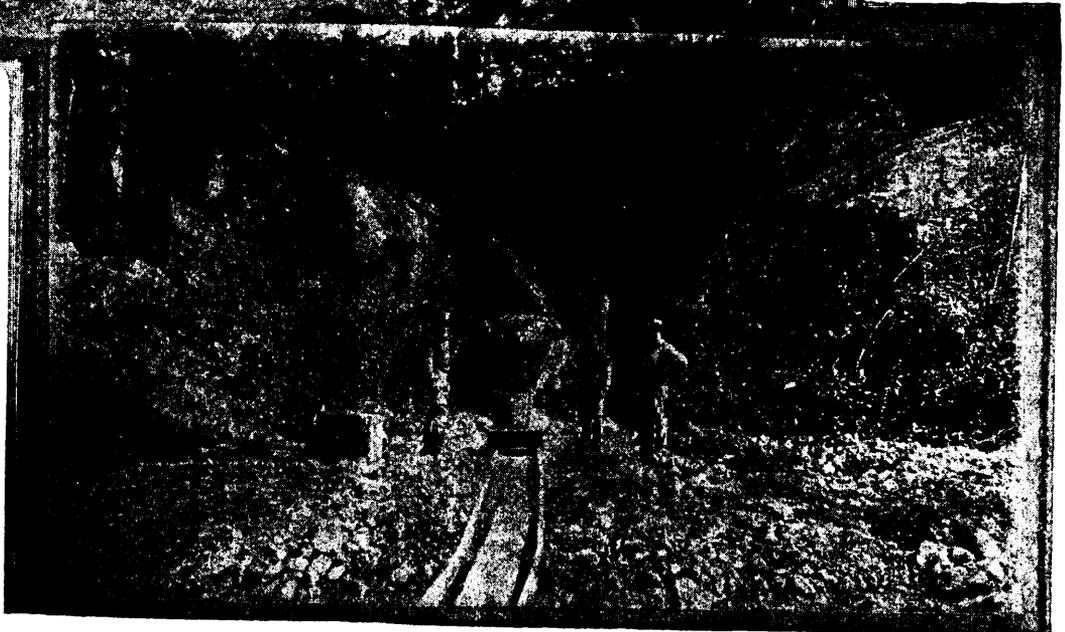
A capital waggon road, with easy gradients, leads from town to the claim itself, and to within a few feet

producer. The incomplete nature of the work already done precludes the possibility of gauging, with any degree of accuracy, the amount of ore in sight; but should the new owners carry out their programme of development, a very short time should be required in which to prove the value of the property. The proximity of this property to Kamloops and the C.P.R. track—advantages, however, shared by every claim on Coal Hill—the plentiful supply of timber in the vicinity, and the nature of the ore, which is self-

fluxing, are factors all favourable to the successful working of the mine discoveries in this district.

#### MINING MEN OF THE PROVINCE.

**MR. WM. M. BREWER**, whose photograph we reproduce this month, was born in England but left there in 1870 at the age of 18. His desire to see life as it



(Photo. by Canning, Kamloops.)

1. ORE DUMP AT THE IRON MASK.

2. LOWER TUNNEL.

of the open cut from the extremity of which start the east and west drifts 90 and 45 feet long respectively, and both in ore for the entire distance. At the end of the east drift a winze has been carried to a depth of about 25 feet, but water flows in so rapidly that it was found necessary to suspend all work for the time being, and the installation of a steam pump may be required to keep the water under

control. While some of the ore is high grade, there is a larger proportion of poorer material; but the average value, ascertained from numerous assays from samples from all parts of both drifts and winze, as well as from the test made at the Everett smelter, is about 15 per cent. copper with 2 dwt. in gold. These sent to Everett yielded \$2.55 in gold and 17.50 per cent. copper; Since then a large amount of ore has been shipped. With local smelter facilities there would be a profit in working this mine, which, so far as may be judged from present indications, should be a great

existed on the frontier at that early day caused him to proceed direct to Western Kansas, and later into Colorado and Nebraska.

Soon after the breaking out of the gold excitement of the Black Hills of Dakota he was employed to survey the stage road from Kearney Junction, on the Platte River, to Deadwood, across the favourite hunting grounds of the Sioux Indians. After accomplishing this task successfully he settled in the Black Hills during the palmy days of placer mining. There he made a study of practical methods of mining gold.

Later, through the friendship of the late Samuel McMaster, superintendent of the Homestake mine, who was one of the first to demonstrate the value of extensive bodies of low grade ore, Mr. Brewer was placed in a position which enabled him to more thoroughly study both mining and milling practice and prepare himself for the profession of mining engineer. In due course Mr. Brewer started on his professional career and was for many years engaged in examining and reporting on properties in South Dakota, Arizona, Colorado, Georgia and Alabama. In 1893, 1894 and 1896 he made examinations of the gold regions of Alabama for Dr. Eugene A. Smith, State Geologist, his report being published by the State Geological Survey. In 1895 he superintended the re-opening of an old Georgia gold mine, and later in the same year was appointed to assist the State Geologist of Georgia in collecting the mineral exhibit for the Cotton States exposition held in Atlanta.

Mr. Brewer came to British Columbia in February, 1898, to prospect and explore the mineral region for a New York syndicate, and also as an expert correspondent for the *Engineering and Mining Journal* of New York, for which journal he has contributed for several years past.

He is a member of the American Institute of Mining Engineers; the North of England Institute of Mining and Mechanical Engineers, and the Alabama Industrial and Scientific Society.



MR. W. M. BREWER.

## THE MONTH'S MINING.

ALBERNI.

(From our own Correspondent.)

SEVERAL changes have taken place during the past month, accompanied, unfortunately by an exodus of some good miners.

The "Thistle Group," bonded by Capt. De La Mar—work has been suspended, the miners discharged and the bond thrown up, the tunnels driven having failed to penetrate the ore deposits indicated by surface outcroppings, to the satisfaction of Mr. Kisingbury, the engineer in charge of the mine. This feature is the disturbing element referred to previously, and may now extend to those properties hitherto regarded as being outside this category. Claim owners must be prepared in the light of recent events, to put in more development work on their claims; mere surface shows will not attract the right kind of speculators.

The "Three Days" Mine—The shipping wharf is now completed, and the surface work is well advanced. The statement in your last issue that the shaft was being sunk on the "dip of the lode," was made inadvertently. It is the earnest wish of every one in the district, that the richer ores encountered in the earlier stages of development may "live down," persistent in same values to a great depth, to reward its plucky owners. But the question as to whether this is a true fissure lode has yet to be proved, and the owners would do well to thoroughly test this point before incurring the expense of further permanent work, or making shipping arrangements.

The "Alberni Consolidated" Mine—Work has been suspended pending the completion of the next stage in the bonding agreement, viz., the payment of deposit and taking possession by the new Company. It is satisfactory to know that the battery test was successful in proving the mine of value. If further developments in the next stage prove equally satisfactory, this deal will give a great impetus to this particular mining district, and especially on the line of reef, or reefs.

## TEXADA ISLAND.

Mr. Blewitt writes from Texada: "The Van Anda is looking very well. We are now sending 500 tons of ore to Swansea." The lower grade ore is being accumulated to await the erection of a smelter. Work is now proceeding on several properties, and the Provincial Mineralogist, who is now visiting the Island, will have a good opportunity of examining the developed claims.

## FIRE MOUNTAIN.

Compressor plants have been ordered for the Fire Mountain and Providence mines in this district.

## KAMLOOPS.

(From our own Correspondent.)

October has been marked by increased activity in this camp. A large number of claims have been bonded, and the Coal Hill section has been visited by a number of mining men with a view to securing some of the properties. Mr. Fulton, acting on instructions from his partner, Mr.

C. W. Ward, now in London, has taken options on a number of groups, including the Iron Cap and the Kimberley. The latter, owned by a party of four, is held at \$60,000. Mr. Henry Croft, of Victoria, has bonded the Erin claim, adjoining the Iron Mask, from Messrs. Beattie, Buxton and Blair. Three groups of claims near Jacko Lake, including the Possum, Lone Boy, Ajax and Monte Carlo, are also under option to a party in London, and the bonding of two claims on Jamieson Creek shows that the North River District is not unnoticed. In addition to these a number of properties on the plateau, northwest of Jacko Lake, are bonded, and among them are the Blue Bird, Evening Star and Drayman. The Tartar, a grey copper proposition, near Cherry Creek, has been bonded for \$25,000. Quite a number of claims of minor importance have also been placed under bond, while several claim owners have declined to tie up their properties at the present prices, deeming their claims worth more than is offered.

## VERNON.

(From our own Correspondent.)

Mr. G. W. Howe, of San Francisco, has about completed the purchase of the Grand Times, The Hidden Treasure and several other claims from Mr. J. G. Banks. The above named properties were at one time bonded by the British Pacific Gold Property Company, who, however, gave them up after having spent a certain sum of money in development work. The present owner means business, and has let a contract for the continuation of work on the Grand Times which property is to be systematically opened up and before very long a mill will be installed on the claim. The mine, which is a tunnelling proposition, is so situated that by means of a chute or tram the ore can be shot down to the mill at the bottom of the hill, where it can be handled at very little expense. The latest assays in San Francisco went over \$100 in gold.

## CAMP MCKINNEY.

(From our own Correspondent.)

The recent strike in the Waterloo has already borne fruit, a strong company, organised in Spokane, having purchased the property from the owners, Messrs. Murphy, Graham and Finnegan. The new company have two shifts at work sinking a shaft where the strike was made, and so far the richness of the vein, which is over seven feet wide, has been more fully sustained, at a depth of 25 feet another very rich body of ore having been met with, and in some specimens shown me by the foreman, the gold was in streaks all through the rock, while in the hanging wall sulphuret ore was showing, so similar in character to the Cariboo ore that it would be difficult to tell one from the other. The prospects for this claim making a mine are most excellent, and as the company intend prosecuting work as vigorously as possible, a few weeks will doubtless place the matter beyond doubt. As mentioned in a previous letter, this strike was only made 60 feet from the side line of the Fontenay claim, owned by Mr. Hugh Cameron, the veritable old-timer of Camp McKinney. Mr. Cameron has had men working on his claim, and has uncovered the vein, which would appear to be as wide as it is in the Waterloo. The Fontenay was located in a north and south vein of sulphide ore and an 80-foot shaft sunk, which showed a five-foot vein of almost solid ore giving fine assays. With the addition of the easterly and westerly Waterloo vein, now exposed, this property is likely to prove one of the leading claims of the camp. It is at this moment under bond to Dr. Reddy, of Spokane, and in all probability the deal will shortly be completed. Another property which has taken a great jump is the Wiarton. This claim is on the west of the Waterloo, and lies between it and the Okanagan, three-fourths of which claim has been acquired by the Cariboo Company, their underground workings being close to the Okanagan line. The remaining fourth of the claim is owned by another old-timer, Mr. John Moran. The Wiarton claim is owned by an incorporated company, of which Mr. C. D. Rand is the prime mover, and I understand that sufficient stock has already been sold to carry on development work all winter. This claim should prove a good investment, as the Cariboo and Waterloo vein undoubtedly runs through it. So far only sufficient work has been done on it to Crown grant the property, and as that work has not been concentrated at one place, little knowledge has been gained of the value of the claim. The exhibition of some of the rich ore from the Waterloo at the Spokane Fair caused a flutter among the mining fraternity, and the camp has already been visited by some experts anxious to get in on the ground floor. A few minor deals have been negotiated in the form of bonds on some of the outlying properties; but, as little or no development work has been done on these claims, I am unable to speak of their value. The railway survey party is now within a few miles of the camp. I understand the nearest point of the survey is about five miles from the Cariboo mine. The weather just now is all that could be desired for working—mornings and nights cold, but the days pleasantly warm; and, as the outlook of the camp is undoubtedly brighter than at any previous period of its existence, the hopes of all are consequently high of a coming "boom," even the old residents, yclept "growlers," allowing a smile occasionally to dissipate the expression of gloom which has become habitual to them.

## FAIRVIEW.

(From our own Correspondent.)

Negotiations with regard to the consolidation of several of the mining companies operating in Fairview are now under

way and it is confidently expected that the deal will be successfully carried through. If this should happen there will be plenty of money at the disposal of the new management to thoroughly equip and develop the most promising claims included in the possessions of the new corporation.

The Smuggler machinery will have arrived in camp by the time these notes have been printed, and I am told by the contractor that the mill will be running by the last week in November.

The Orofino mines are about to put up a two-stamp prospecting mill on their property. The mill will be one of the Tremayne steam stamp mills with a capacity of fifty tons a day.

The Stemwinder continues to show up well and work on that property is still being pushed forward.

We are all wondering when the Government intends finishing the recorder's and gold commissioner's office here. Only a very small sum of money will be required for this purpose as only part of the inside work is left undone. Fairview needs a resident recorder.

## BOUNDARY CREEK.

(From our own Correspondent.)

Several of the mining camps in this district continue to show up well. This is especially the case in Wellington, Greenwood and Deadwood camps, in which more development work is now in progress than in any other part of the district. At the Mother Lode, in Deadwood Camp, the working shaft now being sunk, will be below the 100-foot level before this appears in print. This shaft is vertical and has two compartments, each four feet six inches by five feet in the clear, with twelve-inch square timbers, and two-inch by twelve-inch lagging. All ladders are inclined, with a platform every fifteen feet, so the safety of the miners, so little provided for in most cases, is here kept prominently in view. The plant at this mine was supplied by the Jas. Cooper Manufacturing Company, Ltd., of Montreal, P.Q. It consists of two stationery boilers, each 60 h.p.; a Lidgerwood hoist with 30-inch drum; a Northey-Cameron pump, 10x5x13; an Ingersoll-Sergeant air compressor, 18x24 cylinder, to drive ten machine drills, and a full complement of cable, fittings, pipes, tools, etc. At the pumping station on Mother Lode Creek, there is a Knowles pump, 7x10 cylinder, which is operated by air pressure. This pump has to raise water about 300 feet from the creek to two large tanks built up the hillside above the machinery house. There are only two machine drills at present at work in the mine, and the shaft is so dry that water has to be sent down for use with the drills. The whole shaft is in ore, mineralised at present depth chiefly with iron, but copper shows at times. It is not anticipated, however, that much copper will be met with until the shaft reaches the level of the old workings, in which values in copper and gold are both good. A feature in connection with the working of the Mother Lode plant, is the unusually small consumption of fuel, the boilers being so substantially built and snugly housed as ordinarily to require but little cordwood to keep up ample steam for present requirements. The electric light plant now on the mine, consisting of an Edison dynamo and a Lively engine, these having a capacity of fifty 16 c.p. lights—is not yet in operation, but soon will be. Electricity will be used for firing the blasts below ground, as well as for lighting the mine and buildings. The above mentioned plant is the one upon which the heavy haulage charges, (over \$3,000), referred to in last month's MINING RECORD, had to be paid for transportation between Marcus, Washington, and the mine.

A suspension of work on the Sunset, which lies in close proximity to the Mother Lode, was recently ordered from Montreal. This is to be regretted, for the development work in hand when the stoppage was directed, had reached a stage which promised interesting results very shortly, the work then being in a crosscut from the deepest shaft on the claim. However, a resumption of work may soon be determined upon, in which case the Sunset may be expected to do its share towards maintaining the good name Deadwood Camp has this year earned. The Morrison, which lies about half a mile south of the Mother Lode, is now attracting increased attention, although the property is not given anything like a fair show to have its value adequately demonstrated. It has an extraordinarily large surface showing, the big body of ore being apparently from 200 to 300 feet in width. A shaft sunk recently about forty feet, opened up ore giving assay values in gold, at various depths down to thirty feet, as follows: \$36.78, \$29.91, \$14.09; \$17.85 and \$24.80. These were made late in September. The writer has not found time to visit the property since, so later returns are not now available. From a prospect hole about sixteen feet in depth, and situate some 200 feet across the ore body from the shaft, assays were

\$17.87 and \$37.46 in gold and copper, chiefly the latter. Ore taken from near the surface at a point about 1,000 feet away from the discovery shaft in the direction of the Mother Lode, ran \$6.44 and \$6.72 in gold and copper. There is a small steam plant on the claim, but it is not yet set up. It is hoped that a vigorous policy of development will soon be inaugurated on the Morrison, so that the owner's belief in the large extent and payable quality of its ore deposit, may be either proved to be well warranted or shown to be mistaken. There is no good reason though to think that the latter alternative would result from systematic and thorough exploration. The claim is owned by the Morrison Gold Mining Company.

In Greenwood Camp there is on one hand disappointment, and on the other much satisfaction. The disappointment has been occasioned by the unexpected shutting down of the Stenwinder and Brooklyn, both owned by the Mckenzie & Mann syndicate. Rumour assigns two causes for this suspension of work—one is that an attempt is being made to induce Mr. W. T. Smith, a Boundary Creek pioneer, to sell his interest in several claims controlled by the syndicate, and another that a company is to be organised in England to acquire the syndicate's interests, and to provide capital for extensively developing the claims. The satisfaction freely expressed in the camp and district is at the excellent showing of ore recently opened up in the Old Ironsides mine. The crosscut at the 200-foot level is now in 146 feet, 63 feet of which is through merchantable ore of an estimated average value of \$25 in gold, silver and copper. The mineral is chiefly copper pyrites in a gangue of quartz and spar. Values increase with depth, and they have ranged up to \$95, assays having been made of ore from 3-foot sections. Just now the water has driven the miners out of the lower workings, but this difficulty will no doubt be soon surmounted. The mine is equipped with a plant obtained from the Jenckes Machine Company of Sherbrooke, Q. It includes a 60 h.p. boiler, a 6x8½ hoist, three pumps—a No. 5 Cameron, a No. 7 Knowles and a No. 8 Knowles duplex—and a 10-drill air compressor. It is owned by the Old Ironsides Mining Company, Montreal, capitalised at \$1,000,000 in \$1 shares, 300,000 being treasury. Of these latter only \$35,000 are now held by the Company, which now asks par value for them as the mine gives much promise of value and permanence.

The Knob Hill adjoins the Old Ironsides on the south, and is owned practically by the same people, organised under the name of the Knob Hill Gold Mining Co., and capitalised at \$1,500,000, in \$1 shares, 700,000 of which are treasury stock. The market quotation is 50 cents, but it is stated that no shares are obtainable under par. There is on this claim a crosscut tunnel, in 304 feet at date of writing, all in ore of an estimated average value of about \$25. This tunnel is full working size, and gives a depth of about 140 feet. It is intended to put up a raise to the surface, for ventilation purposes, and then make a station in the crosscut for a hoist, preparatory to sinking. Power is obtained from the Old Ironsides plant for working the ore machine drill in use.

The same owners have secured several adjoining claims—Ætna, Victoria and Fourth of July—and also a controlling interest in the Phoenix. There are on the Victoria two 30-foot shafts and three 100-foot open cuts. These have disclosed ore similar in character and average value to that met with on the Old Ironsides, and giving assay returns up to \$58. The other claims all have good surface showings, with values from \$15 to \$20, but as yet only assessment work has been done on them.

There is little outside of the yearly assessment work being done in Summit Camp just now. Several men are working on the Cordick, owned by the Adams British Columbia Company. It is stated that a contract for fifty feet of shaft sinking on the Oro Denero, now under bond to Rossland mining men, is about completed, and that instructions have been received to erect buildings to accommodate eighteen or twenty men, so it is concluded that it is intended to work right through the winter. It is understood that a crosscut tunnel is to be run 400 to 500 feet into the mountain, this to give about 200 feet in depth. The results of recent work are very encouraging, the shaft being all in ore.

Long Lake is likely to again have attention. A good quartz lead was lately cut on the lakeside, at a depth of between fifty and sixty feet in a tunnel driven about seventy feet, with the object of cutting this lead. An average sample of the ore is stated to have assayed \$131 in gold and silver, so the result of further development work is awaited with interest. The Jewel will probably soon be at work again, a company having recently been organised in London—the Jewel Development Syndicate, Ltd.—to acquire this promising property and other interests in Long Lake Camp. Mr. Gilbert Mahon, of Vancouver, is expected to arrive shortly, to arrange for a resump-

tion of work. The Jewel is equipped with a small but serviceable steam plant, which has done effective hoisting and pumping work, well down towards the 200-foot level, and is believed to be of sufficient capacity for sinking at least another 100 feet.

Mention was made last month of a compressor plant for the City of Paris, in Central (White's) Camp. A 10-drill air compressor is now on the way in from Marcus, so it may be expected to be at work in November. The crosscut tunnel is already in about 400 feet. At 350 feet a body of mineral quartz assaying from \$60 to \$90 in gold and silver was met with. It is anticipated that the Lincoln lead will be cut at about 500 feet, and the Paris lead at about 600 feet, both at a depth of about 300 feet. The Paris lead was sunk on, up the hillside, to a depth of 70 feet. At the bottom of this shaft a crosscut was run sixteen feet, all in ore, chiefly sulphide, samples of which, taken across the lead, returned five to eight ozs. silver and eight per cent. copper. On the City of Lincoln claim, which adjoins the City of Paris, about 400 feet of work have been done, including a shaft sunk ninety feet. The ledge is about ten feet in width—an antimonial ore running well in gold and silver. A three-ton shipment made to Omaha returned \$212 per ton, in all values. There are now twenty-five men employed in the City of Paris. It is intended to put in a lower tunnel, with the object of cutting the above mentioned leads at a depth of about 700 feet, to effect which purpose a distance of about 1,600 feet will have to be driven. The claims are held by the City of Paris Gold Mining Company, of Spokane, Wash., which is capitalised at \$1,200,000.

The news of other district camps must now be very briefly summarised. The Winnipeg and Golden Crown, in Wellington camp, have both resumed sinking in their vertical main working shafts. The former is now down about 140 feet and intends sinking to 300 feet. The ground is soft, so about five feet per day in depth is being made. The plant includes a 35-h.p. boiler, a 15-h.p. hoist, and a No. 5 Cameron pump. The Golden Crown is down 130 feet. At 165 feet sinking will be stopped for the time, and a crosscut will be run at the 150-foot level. An Ingersoll-Sergeant plant is installed here, consisting of a 60-h.p. boiler, a 30-h.p. hoist, a No. 7 Knowles pump, steam drill, etc. It is stated that the Ironclad, in the same camp, is opening up well in a big body of iron ore, carrying gold values. A late report from Greenwood Camp states that some nice ore has been struck on the Pheasant, adjoining the Snowshoe. Good accounts come from the Boundary Creek M. & M. Co.'s claims, the manager, Mr. Leckie, being credited with the statement that in both the D. A. tunnel and the G.A.R. shaft, ore carrying high values is being met with. Some nice copper pyrites has lately been uncovered on the Bruce and the adjoining claim, the Lygia, in Graham camp. A strike of copper ore, showing native copper freely, and yielding many pretty specimens of azurite and green carbonates, was lately made on the King Solomon, in Copper Camp. Prospectors down from the West Fork of the main Kettle River, also report encouraging assay returns from rock discovered on several claims on Beaver and other tributary creeks.

Midway, B.C.

PERCY VERENS.

ROSSLAND.

(From our own Correspondent.)

The output of the Rossland mines is increasing week by week. The four thousand ton mark has already been passed on several occasions during the past month, and when the B.A.C. properties join the shipping list in their numbers, a marked enhancement of the volume of the shipping returns will further ensue. Nor can we doubt that this will shortly be the case as the development work of this corporation has more than justified even sanguine expectations. On the No. 1 a new shaft house has been erected, and a wagon road constructed that renders the mine easy of access. The shaft is down about 150 feet, and there is more than 1,000 tons of ore upon the dump, which is said to average \$20. A shipment will shortly be made to the Trail smelter. On the Great Western great progress is also being made in development work. The station at the two hundred feet level has been completed, and drifting has been started in both directions, East and West. Some tall mining has been done, both on this property and on the Nickel Plate in the way of beating the camp records, both for fast sinking and for drifting. The Columbia Kootenay, however, is the mine that has furnished the sensational developments of the month. Strike upon strike has been made till the public are more than willing to assert that this will be, in no very long protracted period, the queen mine of the camp. The manager, Mr. Macdonald, is the hero of the hour. The find in No. 4. tunnel was wonderful in its way, when the abandonment of the

mine by Aug. Heinze is taken into consideration, but now we are informed that the value of the ore in No. 5 is \$2,001. And this is a low grade mine! This property alone is enough to pull the B.A.C. through, and to completely silence ill-natured animadversions on the much criticised corporation. The main shaft is down 800 feet, and ore is being shipped at the rate of 3,000 tons weekly from all over the mine. A rich strike was made in the second week in October, on the foot wall at the 600 feet level. Eight feet of \$100 ore was uncovered. Nor is this isolated. The streak is found on the levels above and below. There is no wonder that the stock is quoted at \$8.50. There are now over three hundred men employed in the mine, and something like thirty drills are at work.

**War Eagle.**—The shipments of this mine are in the vicinity of 1,000 tons a week, and when the new gallows frame is completed, will go close to the premier mine, the Le Roi itself. The gallows frame is being built of steel and ought to be completed early in November. It is erected on an eminence above the Le Roi, and will, when finished, present a most commanding appearance, being upwards of 150 feet in height. The British Columbia Bullion Extracting Company, an illustrated description of which appeared in these pages in the July number, is now ready to treat the silicious ores of the War Eagle, and has a contract for 4,000 tons. Two carloads a day are being sent down to their works at Silica.

**White Bear.**—Drifting is being carried on to the eastward from the 250 feet level. Mr. Cole, the manager, reports the discovery of a fine vein of chalcopyrite carrying good gold values. There is every prospect of this vein, which is about two feet in width, widening on further progress being made, and if such be the case the mine will be in a better position to ship than it has heretofore occupied.

**Iron Mask.**—Development is going on in the north vein where the fault was encountered some time back. The ore is averaging \$9. At the fault the assays went \$1. Fifty feet away they had improved vastly. A contract has been let for the instalment of a Jenckes 12-drill compressor. Excavations are now being made for the reception of the machinery. About thirty-five men are being employed.

**Centre Star.**—A new three-compartment shaft is being sunk, and at the same time a raise is being made to meet the shaft from below. Some time will necessarily elapse before this mine is ready for shipping, but when the facilities for such shipment are finished, so much stoping and other work has already been completed under the old management that as a shipping mine the Centre Star should at once take rank among the very first.

**Monte Christo.**—Suddenly shut in the first week in October, and the management can hardly be said to have taken the public into their confidence as to the reason why.

**Virginia.**—The indications at the 300-foot level were so favourable in this mine that the management decided to push on downward to the 500-foot level. Two machine drills are at work, and the shaft is now down 340 feet. The Virginia has only lately come to the front, but those concerned think they will have little trouble in keeping it there. There is a tendency in some quarters to decry the worth of the property, but the managers would hardly have gone on beyond the first level unless there was more than a slight hope that there would be some return for their expenditure.

**Iron Horse.**—The old workings on this property have been entirely abandoned, and the superintendent, Mr. Pfunder, has started a new shaft-house to the westward, on a surface showing of exceptional richness. Since work has started up again on this prospect, much energy has been displayed. Several new buildings have been put up and the shaft itself is sunk some fifty feet. The ground for a 7-drill compressor has been selected on the line of the Columbia & Western railroad, and it is intended to burn the cheap coal which the completion of the C.P.R. through the Crow's Nest to Rossland will bring into the camp.

**Commander.**—Work is going on in the shaft, which is being gradually straightened up. The depth now reached is 275 feet, and the appearances are good, though it is thought that the main body of the ore, not as yet encountered, will be found more to the south.

**Alberta.**—This property is being developed, and work is being pushed ahead. There is, however, nothing especially deserving of record, though, no doubt, we shall hear more presently.

**Novelty.**—There is an excellent showing on this property. Two leads have been discovered, running parallel to each other. On the first discovered a shaft has been sunk which is now down about thirty feet. The bottom is in ore, chiefly iron and copper.

**Giant.**—Work is here going on, both in the tunnel on No. 1 ledge, and also in the shaft on No. 2. The tunnel is in 120

feet, and is in ore. The shaft, down about 90 feet, has passed through the ore, which has faulted. It is thought that it will again be found on the lower level and in a more favourable direction than that at first met with. A new shaft-house has been built, and three shifts of miners are constantly at work.

**Gertrude.**—There are fifteen men at work here. The shaft is down 125 feet and work has been recommenced on the old tunnel which is being extended to meet the shaft at a depth of 100 feet. Some very good looking ore is presenting itself in ever increasing quantities as depth is being gained in the shaft. Prospects are therefore good in this property also.

**Jumbo.**—Work is going on here in the new tunnel, and also in a crosscut on the chute where the last strike of highly mineralised quartz was met with. The quality of the ore in the crosscut is improving rapidly. It is an iron ore that apparently overlies the richer quartz.

**Deer Park.**—The machinery has been finally installed with great *eclat* on the Deer Park, and is a success. Work has been resumed in the shaft which is approaching the 300-foot level. As soon as that depth is gained work will proceed from the different levels, where stations have been constructed. With the beginning of that work shipments will commence.

**Grand Prize.**—Mr. Macdonald, of the Abe Lincoln, has a small force of men employed this month in stripping the various ledges on this property which lies next the Deer Park on the South Belt, and is supposed to carry its values. Manager Macdonald, however, avers that this is the wrong way of putting the case, since the Deer Park is not in it with the Grand Prize. The company is of Spokane, and it declares that it intends to show up this prospect for all it is worth.

**Lily May.**—Nothing of particular note is reported from this property. It intends to work throughout the winter. This mine, the first located in Rossland, has had many vicissitudes, and is yet likely to justify the favourable prognostications of its friends.

**Silver Bell.**—This mine has passed into a new phase of its existence; this time under the auspices of Mr. E. L. Sawyer, of Montreal. This gentleman has also assumed control of the Nest Egg, and intends to thoroughly prospect both properties in the certain hope of establishing a mine in one or both of them. Both of these are in the South Belt, which will yet vindicate itself to be no unworthy rival of the properties on the northern edge of the gabbro.

**Sunset.**—This mine is still working continuously. Ore is found all over the workings, but it is rather streaky, the main body has not as yet been struck.

**Abe Lincoln.**—The shaft is now down 200 feet and the pay body has apparently been come upon. There have been found plenty of stringers all the way down, but at the moment the bottom of the shaft is nearly all in ore.

**Homestake.**—The management have decided to resume work on this first class proposition. The assessment of two cents per share in the new company was wonderfully well met, and, in consequence, there are plenty of funds in the treasury. On the Gopher, the contiguous mine to the eastward, work has already been resumed. A winze is being sunk in the tunnel, at a point just short of where the lead faulted. The shaft is therefore in ore and the showing on the new dump looks very pretty. If the ore is of sufficient grade, and it is so thought to be, there exists little reason why this mine should not shortly join the shipping list. The expense of transportation to the railroad would be merely nominal, as the dump is within 500 yards of the track, with a waggon road connecting. The new shaft is on the Gopher, and not on the Homestake lead, which parallels it a short distance to the southward. The R. E. Lee, the third of this group of properties, is not so much in favour with a section of the public as its sister mines. The stock has been made assessable, which may partly account for the condition of opinion, but others, who think themselves in the know, say that the R. E. Lee is the best of the three and carries the highest grade ore. An examination of the mine was made lately, the shaft being pumped out for the purpose, and a few shots put in the bottom. The results were not made public, but rumour hath it that the ore obtained was the record for the properties.

Of the Victory Triumph and the Velvet I cannot give you any special information this month, but will be in a position to do so next.

#### CARIBOO CREEK.

Woodhouse's proposition, the Milly Mack, is looking very well. The ledge was struck on the 7th of October, and the reports state the mine is a "corker." A waggon road has been constructed up to the claims, which lie about four miles east of Mineral City, and arrangements have been entered into to permit them being worked throughout the winter. A four-drill compressor is being erected on the Silver Queen,

which will be finished within a month. A fifty-ton lot of ore is to be shipped to the Trail Smelter as soon as the snow flies. Work is also progressing on the Golden Hope proposition. It is likely that a couple of steam drills will be set to work on this property, power being obtained from the Silver Queen compressor.

## YMR.

(From our own Correspondent.)

The Ymir Mines, Limited, an English company, has been gazetted with a capital of £200,000. The organization will take over one-quarter interest in the Ymir group, which is being operated here under the auspices of The London and B. C. Gold Fields Company. The latter company are now installing a forty stamp mill, a concentrating plant and an aerial tramway. Plans and drawings have also been prepared for a tunnel which is to be driven approximately 1,200 feet with the object of striking the ledge at a depth of about 1,500 feet, the group is being systematically developed under the management of Mr. S. S. Fowler, E.M., and from figures enough has been done to demonstrate the value of the property.

Since last month the Kenneth Gold Mining Company have let a contract for 400 feet of drifting and sinking work on the Tamarac. The contractor's tender for the work being \$7.50 per foot. Some very rich showing of free gold being encountered. The company is contemplating the installation of an adequate plant at an early date.

The work on the concentrator of the Dundee mine is proceeding apace. The machinery being now on the way from the east, and by December it is expected the mill will be in operation. The company is taking some very fine galena from the 250 foot drift, which assays gold, \$35.00; silver, \$18.00 and a good percentage of lead.

There is every reason to believe that the B.A.C. will take over the Wilcox. Messrs. Helm and Haskins, of Rossland, recently examined and reported upon this property, and I am in a position to state that they thoroughly recommend this purchase.

Messrs. Custean & Pellant, the owners of the Dumas and Alexandre mineral claims, situated at the head of the North Fork of Wild Horse Creek, have driven on this property a tunnel 150 feet in the face of which they have a fine mineral showing. The ledge is seven and a half feet between the granite contact. The ledge matters assays on an average as follows: silver, 20.5 ounces; lead, 21 per cent.; gold, \$40.00. I have personally visited this property and there can be no doubt regarding the promising nature of the mineral indications.

The splendid mineral specimens which were exhibited at the Fruit Fair, Spokane, Washington, excited considerable interest among many prominent mining men who visited the exhibition, in our camp. Such men as Mr. Patsy Clark and other well-known western operators remarking most favourably on the specimens shown and promising us in consequence a visit at the first opportunity.

Mr. Harris of London, Eng., is in Ymir visiting the Alf Gold Mining Company property, the Bullion group, and is greatly pleased with what he has seen, and while here he will make arrangements for placing machinery on the property.

Mr. A. L. Knox, a South African journalist, has assumed this month, the editorial management of our local newspaper, the Ymir Miner.

## NELSON.

The Fern continues to make an excellent showing, the last clean-up on the 5th of October, amounting to, for the thirty-three days' run, \$6,650, and a car-load of ore shipped, together with the concentrates, are estimated at \$3,000. In consequence the shares are in great demand. A new 5-drill compressor is being installed at the mine. At the Poorman development work is proceeding, the south drift on the ore at the lower level being in nearly 150 feet, the vein averaging two feet in width and assaying \$30. At the first general (statutory) meeting of the Athabasca Gold Mine, Ltd., held in London on the 30th of September, a very encouraging account of the property was given by the chairman, the manager, Mr. Fell, cabling from Nelson that the 10-stamp mill was in running order, and that there was sufficient high-grade ore to continue crushing for six months.

## SLOCAN.

The reports from this district are generally satisfactory, and heavy shipments are being made from the Payne, Ruth, Last Chance, Star and Reco mines. The Queen Bess is also showing up well, and during the winter months the manage-

ment expect to make average monthly shipments of 400 tons. At the Last Chance the new tramway is about completed. Ore has been accumulating at this mine at a great rate. A good strike is reported to have been made on the Ajax, where the No. 3 cross-cut taps the east vein, a pay streak of eight inches of clean ore having been encountered. The ore in the No. 2 tunnel of this mine assays 170 ounces in silver or 75 per cent., and there is now a stoping ground of 175 feet between No. 1 and No. 3 tunnels. No ore is to be shipped at present, but the property is to be systematically developed. The annual meeting of the Noble Five Company was held during the month, the directors presenting a report and submitting the plan to be followed in the future development of the property. It is proposed to continue the two cross-cut tunnels, one of which is now in 1,100 feet, and the other on the main lead 280 feet. These tunnels will gain a depth of from 800 to 1,000 feet on the two main leads. The report of the directors was approved and adopted, and a special resolution carried, confirming the action of the old board in raising money to discharge the former liabilities and to carry on development. Mr. James Dunsmuir, of Victoria, was elected president for the ensuing year.

## SILVERTON.

(From Our Own Correspondent.)

The Vancouver mine is at present employing twenty-two men and preparations are being made to ship extensively this winter. Preparation is also being made for stoping in a new piece of ground between No. 1 and 2 tunnels, and already four carloads have been sorted and sacked. This company has a sleigh road to the mine connecting with the Silverton road some five miles up the gulch. An upraise has been started at a point 600 feet in, in No. 3 tunnel, this upraise will be 120 feet long by the time it is driven through to No. 2 tunnel, which it will strike at a point a little east of the raise connecting No. 1 and 2 tunnels. This upraise is started in ore, and as the ore chute has been prospected for forty-five feet below No. 2 tunnel by means of a winze, it will open up a new piece of stoping ground that is already known to be rich. The ore shipped by this company last winter, some 340 tons, gave returns of over 250 ounces in silver and 50 per cent. lead per ton. New ore houses, bins and blacksmith shop are being erected at the mouth of No. 3 tunnel.

The work of building a concentrator at the Comstock mine is being prosecuted as rapidly as possible, but it is doubtful if the plant will be in running order before early spring. The extension of the Silverton waggon road to the mine is about completed. This company intends to ship 100 tons of ore at once and not wait for sleighing. The force at present consists of fifty-four men.

The Congo group, a gold-copper property, on Red Mountain, has been compelled to close down owing to the management not having had time to prepare for winter work.

The Essex group, lately purchased by Mr. G. H. Dawson of Vancouver, is showing up well. Three tunnels are being driven on the vein, the two upper ones sixty-five and fifty feet respectively, have a paystreak of from four inches to a foot of ore that will safely go 200 ounces in silver and sixty per cent. lead per ton. The lower tunnel has just been started and has not reached ore yet. This group adjoins the Wakefield mines and there is little doubt but that they are working on the Wakefield vein, nine miners are employed at present.

A large amount of stripping has been done on the Condor vein, under bond to Mr. W. H. Sandiford, and a tunnel has been started to tap the vein. Buildings have been erected and preparations made to carry on work all winter.

A new rawhide trail has just been completed to the Wakefield mines to connect with the Silverton road, and ore bins are being erected at the foot of the trail. There are several carloads of ore sacked and on the dump, waiting for snow to be brought down. The management expect to ship 2,000 tons of ore this winter. At present only a force of twenty-five men are employed but the force will be largely increased as soon as snow comes so that shipping can be commenced.

## LARDEAU.

At the Silver Cup group, in the Lardeau, there are now 350 tons of high grade ore ready for shipment or on the road to the smelter. The average value of the ore is about \$165 per ton. There are large quantities in the mine blocked out for stoping.

## EAST KOOTENAY—FORT STEBLE.

Preparation is being made at the North Star mine for shipping on a large scale next spring, when a branch line con-

necting the Crow's Nest Pass Railway will be built. At present a force of thirty-five men are employed sinking a double compartment shaft at a point north of the old workings, and a new hoist is to be shortly installed. Tenders have meanwhile been called for the work of hauling 1,000 tons of ore to the railway, and a "snow" road is being built for this purpose. Excellent reports have been received of the progress of work at the Sullivan group. This mine is being very extensively developed, and will shortly be equipped with a steam hoist and other machinery.

#### CORRESPONDENCE.

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

#### COST OF FREIGHTING TO DAWSON.

**TO THE EDITOR:**—May I call your attention to evidently a typographical error in the article entitled, "Boat Building at Bennett," which appeared in your last issue, with reference to the cost per ton of freighting supplies to Dawson by barge. You state that "the cost per ton is from \$160 to to \$200, including the purchase of barge," in place of which there is an actual saving of this amount to those adopting this plan of conveying freight as against steamboat charges.

H. R. ELLA,

Secretary V. Y. T. Co., Victoria.

#### THE CIVIL SERVICE IN CANADA.

**TO THE EDITOR:**—I was glad to notice in last month's issue of the MINING RECORD an article pointing out the desirability of a change in our system of civil service appointments.

We have constant threats on changes of Provincial Governments in Canada—our own being no exception—of the introduction from the States of the detestable "spoils" system into the civil service, with a resulting displacement of officials on political grounds. Although it is to be hoped that in our own case there is no sufficient cause for such a fear, nothing would more certainly guard against the adoption of a bad "spoils" policy than such reform of our civil service administration as would base on merit, duly ascertained by practical tests, appointments to Provincial Government offices. Thus it is an open secret that most of our Government gold commissioners and mining recorders owe their appointments more to past influence or accident of circumstances than to actual personal capacity, although very many perhaps must, amongst them, discharge their duties well, and certainly none should be displaced without very good cause. Civil service appointments, when properly made, should be for life on good conduct, the latter including continuing efficiency. But how much better would it be for our community, and how much safer for officials themselves, were appointees in future required to fulfil some proper test of likely efficiency, and then, after appointment, given security of tenure. How vastly improved moreover would some of our official reports of gold commissioners and recorders become were future appointees to such offices men of mining knowledge and experience—experts, in fact, in their way.

N. S.

Vancouver, B. C.

#### ASSAY VALUES vs. SMELTER RETURNS.

**TO THE EDITOR:**—May I beg the favor of a little space wherein to reply to Messrs. Fortier and Warner's criticism of my remarks on "Assay vs. Smelter Values of Ore," which appeared recently?

I must congratulate those gentlemen in being interested in a property that possesses such exceptional facilities for working and shipment to Swansea, and in this particular instance, or with claims situated equally favourably, I am willing to admit that my estimate of the smelter value is rather too low. However, a very fair average rule in British Columbia is to knock off, say, \$20.00 per ton from the assay value of your ore to cover mining, freight and treatment, though in this especially favoured locality at Quatsino less allowance need be made.

In the face of all the advantages claimed by Messrs. Fortier and Warner it certainly does seem very strange that capital

should be holding back, for one would naturally think, if all these statements are correct, that a company could be formed to work the claims first and then erect their own smelter on the site without the slightest hesitation. If it is not trespassing too far upon the time of those gentlemen, it might interest your readers to know if Messrs. Fortier and Warner took those samples themselves, or entrusted that most particular duty to a third party in their presence (it would not be possible that such veins were sampled in their absence), and if they considered the samples as fairly indicating the average composition of the ledges. I notice the samples are spoken of as surface rock only, and such a remarkable showing in such a splendid locality makes one anxious to learn all further particulars.

That district is not peculiar in being well adapted for tunnels, as much of British Columbia partakes somewhat strongly of that character; but a tunnel is undoubtedly the best way of getting ore (and water) out when the vein will admit of such a method of working.

My object in writing the first article (in your September number) was, however, not at all to decry the evidently valuable property at Quatsino, but rather to correct a far too common error of valuing the ore by the assay returns instead of by the probable smelter returns; and I took the case quoted more as an example of what may usually be expected, though, perhaps, rather unfortunately in this particular instance.

Many and many a man has come to me in the way of business with a chunk of brown quartz the size of his head, and has pointed out with awe one poor, lonely little speck of free gold the size of a pin's point—so small one did not dare to look too closely for fear of it turning out to be pyrites or mica; but granting it really was gold, the assay value might very likely show "a trace," whilst the smelter would present you with a bill of \$10.00 for smelting.

If, only by repeated warning and illustration, I may be the means of bringing claim-owners to take the practical and sensible view that their ore must be valued by the smelter and not by the assayer, much good will result, and possible purchasers on the one hand will not be scared out of their wits by the absurd figures asked; nor will the prospector (who fully deserves all the good luck he gets, and more) think he owns the earth because he gets a \$20.00 assay from a piece of surface rock. No doubt, with the advent of more smelters, even if small ones, and the now assured reduced price of fuel, the much too high charges for smelting will be moderated; but in all cases, such as this Quatsino property, and some that are well spoken off in Boundary Creek, after having proved the continuity of your vein, and by development work proved also the quantity of ore you can supply daily (without stopping development work)—then, when you have enough ore out to run your smelter for a year, and at least another year's supply "in sight," put up your own smelter, and with anything like scientific and economical management a sure and certain fortune will be the result.

Trusting to hear more of this Quatsino property, and apologizing for the length of this letter, I am, yours truly,

Nelson, B. C.

A. H. HOLDICH.

#### MINE MANAGEMENT—A SENSIBLE SUGGESTION.

**TO THE EDITOR:**—During the last few years there have been many cases in the courts instigated by men working in the mines, to recover damages against their employers for injury received while fulfilling their duties. In nearly every case the company or employer has been determined the aggressor. This tells a tale, namely, that in many mines the lives of the working men are not protected as they should be. It is only human nature that the employer should not take more precautions to provide against accidents than he is forced to, because such provisions would necessarily increase his expenses. An Act called "Inspection for securing the safety and good health of workmen engaged in or about the metalliferous mines," was passed at the last session of the Provincial Legislature, and as a result an inspector was appointed for the whole Province, to enforce compliance with the Act. In all countries there are stringent rules laid down and enforced for coal mines, and those in charge, both managers and foremen, have to hold certificates of ability, but there is no reason why other mines should be on a different footing. The men's lives are endangered equally from badly protected shafts, upraises or stopes. A man may be as easily killed if the hoisting gear, pumps, ladders or roof supports are out of order, if the ventilation is bad and regulations for safe blasting are not enforced. The public are protected from incompetence in the case of doctors, steamboat officers and engineers, and even of lawyers and surveyors. Why then in mining are the

lives of men to be entrusted to managers and foremen who have had little, if any, experience in mine superintendence, which of course includes providing adequately for the safety of the workmen under him. The best remedy is for the Government to pass an Act prohibiting any manager or foreman taking charge of a mine unless able to produce an acceptable certificate of knowledge and experience in the essential points of ventilation, timbering, hoisting gears, use of explosives, pumps, etc.

This would not apply to those reporting on mines, as if, in some cases, the investor prefers to employ an unqualified mining engineer, that is his lookout. When it comes to working a mine and employing labour, others have a right to interfere. All engaged in mining will see the importance of certificates of qualification, and the Government should be urged to carry out the proper examination of candidates, and the issuing of certificates.

RONALD C. CAMPBELL-JOHNSON.

Nelson, B.C.

ANSWERS TO CORRESPONDENTS.

A READER, (Brantford, Ont.)—We must apologise for not replying to your enquiry sooner, but the information proved difficult to secure. The company, however, have seemingly good assets, including several promising prospects on Alberni Canal, at Clayoquot, on the West Coast of Vancouver Island, and a claim with a good surface showing at Harrison Lake. They have also a bond at Forty Thieves mine claim in Lillooet district. All the properties are being steadily developed.

W. H. F. (Spokane).—The gentleman you refer to has been in the service of Capt. De La Mar, the great mine operator, as mining engineer for upwards of eighteen years. It may, therefore, be presumed that he is competent to express an opinion, and we much regret to learn on his authority that your report on the Quatsino claim was utterly untrustworthy.

A. L. (Montreal).—You will find a reference to the closing down of the Monte Christo in this issue.

H. M. W. (Nelson).—The book is published by the Scientific Publishing Co., New York.

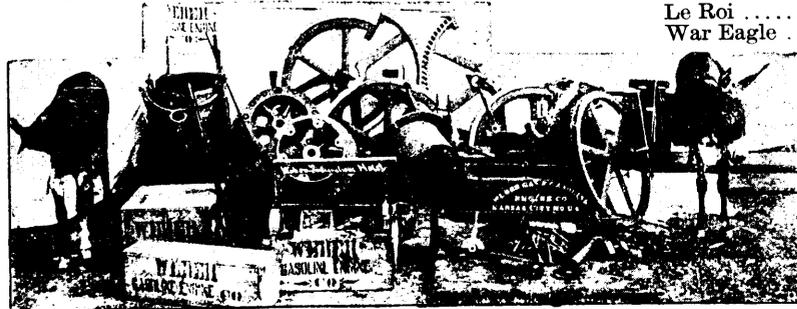
F. M. (St. Helena, Jersey).—You have no reason to feel uneasy. We have asked the secretary of the company to communicate with you.

D. McK. (Ferne).—Your letter arrived just as we go to press, and we are therefore unable to answer your enquiries at length. You had better, meanwhile, write to Dr. Dawson, Geological Survey Department, Ottawa, asking for their report.

TRANSPORTING GASOLINE ENGINES IN ARIZONA.

THE illustration shown herewith, shows the parts of a complete 10 Actual H.P. Weber Gasoline Engine, recently built by the Weber Gas & Gasoline Company of Kansas City, Mo., and installed on a property in Arizona.

The complete plant, set up, weighs 7,200 pounds. The plant was sectionalised for burro transportation, bringing all the parts down to the required weight. In addition to hoisting, the engine will be used for operating a Cornish pump and



power for ventilation. The Weber Company have built a number of these engines, which are peculiarly adapted for localities difficult of access.

A single burro can carry fuel enough on one trip to operate a 10 H.P. Gasoline Hoist 10 days, operating twenty-four hours per day. This point makes these engines especially valuable where all fuel must be freighted or where water is scarce, since a 10 H.P. Hoist uses only two gallons of water in twenty-four hours.

FOREIGN COAL SHIPMENTS.

The New Vancouver Coal Mining and Land Co., Limited.

SEPTEMBER SHIPMENTS.

| Date. | Vessel.                   | Destination.     | Tons.  |
|-------|---------------------------|------------------|--------|
| 1—    | Bark Grenada              | Honolulu         | 3,691  |
| 2—    | S.S. Roanoke              | Seattle          | 445    |
| 3—    | S.S. Burma                | Port Los Angeles | 4,544  |
| 8—    | S.S. San Mateo            | San Francisco    | 4,398  |
| 10—   | S.S. Siam                 | Port Los Angeles | 4,495  |
| 10—   | S.S. Horsa                | Alaska           | 151    |
| 11—   | S.S. Amur                 | Alaska           | 177    |
| 13—   | S.S. City of Grand Rapids | Alaska           | 50     |
| 15—   | S.S. Titania              | San Francisco    | 5,434  |
| 19—   | S.S. Fastnet              | Alaska           | 70     |
| 19—   | S.S. Burma                | Port Los Angeles | 4,576  |
| 22—   | S.S. Mananense            | Alaska           | 354    |
| 23—   | Str. Holyoke              | Port Townsend    | 57     |
| 25—   | Str. Pioneer              | Port Townsend    | 19     |
| 26—   | S.S. Siam                 | San Francisco    | 4,349  |
| 29—   | S.S. Titania              | San Francisco    | 5,434  |
| 29—   | S.S. Amur                 | Alaska           | 233    |
| 29—   | S.S. Tordensjold          | Alaska           | 150    |
| Total |                           |                  | 38,627 |

WELLINGTON.

| Date. | Vessel.                   | Destination.  | Tons.  |
|-------|---------------------------|---------------|--------|
| 3—    | S.S. Dirigo               | Victoria      | 115    |
| 1—    | S.S. Tacoma               | Port Townsend | 40     |
| 8—    | S.S. Sea Lion             | Port Townsend | 18     |
| 8—    | S.S. R. D. Rice           | San Francisco | 3,500  |
| 8—    | Bark Diamond Head         | Honolulu      | 1,500  |
| 9—    | S.S. City of Topeka       | Victoria      | 170    |
| 10—   | Bark Amy Turner           | Honolulu      | 1,400  |
| 12—   | S.S. Wellington           | San Francisco | 2,600  |
| 13—   | S.S. City of Grand Rapids | Mary Island   | 60     |
| 13—   | S.S. Miowera              | Vancouver     | 850    |
| 14—   | S.S. Pioneer              | Port Townsend | 35     |
| 11—   | S.S. Dirigo               | Seattle       | 130    |
| 22—   | S.S. Bristol              | San Francisco | 2,600  |
| 23—   | Ship E. B. Sutton         | San Francisco | 2,675  |
| 25—   | S.S. City of Topeka       | Victoria      | 150    |
| Total |                           |               | 15,843 |

SHIPMENTS TO OCTOBER 20TH.

| Date. | Vessel.       | Destination.     | Tons.  |
|-------|---------------|------------------|--------|
| 1—    | Bark Ceylon   | Honolulu, H.I.   | 852    |
| 1—    | Bark Sea King | Honolulu, H.I.   | 2,355  |
| 4—    | S.S. Burma    | Port Los Angeles | 4,317  |
| 4—    | Str. Pioneer  | Port Townsend    | 8      |
| 8—    | S.S. Siam     | San Francisco    | 4,358  |
| 12—   | S.S. Titania  | San Francisco    | 5,434  |
| 12—   | S.S. Lombard  | China            | 603    |
| 20—   | S.S. Burma    | San Diego        | 4,310  |
| Total |               |                  | 22,237 |

The Collector of Customs at Union kindly sends us the following returns from that port of exported coal, from 20th September to 20th October was 3,904 tons.

SHIPPING MINES.

Following are the ore shipments from the mines adjacent to Rossland from January 1st to October 22nd, 1898:

|              | Tons.  |        |
|--------------|--------|--------|
| Le Roi       | 47,797 |        |
| War Eagle    | 31,997 |        |
| Centre Star  | 2,657  |        |
| Poorman      | 453    |        |
| Iron Mask    | 3,138  |        |
| Cliff        | 140    |        |
| Velvet       | 350    |        |
| Monte Cristo | 416    |        |
| Sunset No. 2 | 30     |        |
| Deer Park    | 6      |        |
| Giant        | 114    |        |
| Total        |        | 87,198 |

The shipments from Rossland for the three weeks ending October 22nd were as follows:

|           | Tons. |        |
|-----------|-------|--------|
| War Eagle | 2,603 |        |
| Iron Mask | 200   |        |
| Le Roi    | 8,894 |        |
| Total     |       | 11,697 |

This is nearly treble the quantity of ore shipped during the corresponding period of last year.

The total shipments since January 1st, 1898, are 87,108 tons.

## NELSON.

We are indebted to Mr. H. E. Croasdaile, general manager of the Hall Mines, Limited, Nelson, for the following results of this company's smelting operations for the four weeks ending September 30, 1898: For the 29 days' smelting, 5,145 tons of ore were smelted, yielding matte containing (approximately) 84 tons of copper and 59,560 ounces of silver.

Mine exports from the port of Nelson for the month of September were as follows:

The mine, copper bullion—

|                    |             |
|--------------------|-------------|
| Gold values.....   | \$ 9,081 00 |
| Silver values..... | 16,798 00   |
| Copper values..... | 8,378 00    |
| Total.....         | \$34,257 00 |

## SLOCAN.

We are indebted to the Collector of Customs, Kaslo, for the following report of Slocan shipments for the month of September:

|                      | Pounds.   |
|----------------------|-----------|
| Ruth.....            | 720,000   |
| Payne.....           | 700,000   |
| Last Chance.....     | 320,000   |
| Slocan Star.....     | 360,000   |
| Rambler-Cariboo..... | 90,000    |
| Antoine.....         | 60,000    |
| Whitewater.....      | 40,000    |
| Treasure Vault.....  | 40,000    |
| Bismarck.....        | 39,250    |
| Miller Creek.....    | 30,000    |
| Wonderful Bird.....  | 12,800    |
| Montezuma.....       | 12,000    |
| Total.....           | 2,424,050 |

This ore was divided among the different smelters and purchasers as follows:

|              | Pounds.   |
|--------------|-----------|
| Puebla.....  | 1,630,000 |
| Everett..... | 510,000   |
| Kaslo.....   | 154,050   |
| Tacoma.....  | 90,000    |
| Omaha.....   | 40,000    |
| Total.....   | 2,424,050 |

The ore cleared at the port of Kaslo for shipment during the month was:

## KASLO.

|                              |           |
|------------------------------|-----------|
| Total pounds.....            | 2,936,000 |
| Total value.....             | \$110,959 |
| Ounces silver, contents..... | 132,160   |
| Pounds lead.....             | 1,327,010 |

## NAKUSP.

|                              |           |
|------------------------------|-----------|
| Total pounds.....            | 4,309,840 |
| Value.....                   | \$193,419 |
| Ounces silver, contents..... | 220,203   |
| Pounds lead, contents.....   | 2,184,712 |

From the foregoing it will be seen that the shipments from Sandon for the month aggregated nearly 3,000 tons, all of which is high grade ore. The Payne mine made the heaviest shipment on record, sending 1,710 tons of ore to the smelter.

## THE METAL MARKET.

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

THE slight falling off in business generally during October is ascribable to various reasons, chief among which is the unsettled state of the political atmosphere, both in Europe and America.

## SILVER.

Owing to the withdrawal of India from the markets the price of silver fell from 60¾, as quoted in September, to 59½ in the beginning of the present month; but there has since been a gradual recovery, the market, being, however, very sensitive. Our quotations to-day (October 29), by wire from

New York, are 60¼, 60¾. The average price during September was 60.68, being the highest average quotation since April, 1897.

## LEAD.

The price of lead steadily declined from 3.99c., last month's average, to 3.85c. on the 14th October, and 3.75c. (New York) on the 21st. The market is exceedingly flat, but during the past few days there has been a very slight upward tendency, the latest quotations being 3.72½c (New York,) 3.60c. (St. Louis). When compared with 4.00c., the average in October of 1897 and in August of this year, the decline becomes more marked, but the price is still well in advance of the average in April of 3.63c., since when prices have advanced.

## COPPER.

A very considerable activity is noticeable in this market and a brisk demand for delivery the balance of the year is developing. Prices advanced by the middle of the month to 12½ cents for Lake; 12¼ and 12¼ cents for Electrolytic copper in cakes, bars or ingots and to 11¾ and 12 cents for cathodes. These prices have remained unchanged, to-day's reports quoting 12½ and 12½ for Lake. Last month's average was 12.31 cents. If consumption, which abroad is unprecedented, continues to increase in this country, a scarcity in this metal is not an impossibility.

## SPELTER.

Spelter continues to be in good demand and prices during October have advanced from 4.67, average for the month of September, to 5.00 in New York on October 14th. The prospects for the maintenance price which is the highest reached either during 1897 or the present year. We can quote for October 29th, 5.10 and 5.15, in New York.

## ROSSLAND STOCK MARKET.

(Special report and quotations by Messrs. Dickinson & Orde.)

BUSINESS during the past four weeks has been decidedly slacker than during the three previous months. All stocks have suffered to some extent. Even War Eagle went back ten cents on the market. Nearly the whole of this occurred through the unexpected shut down of the Monte Christo mine, and to the reticence displayed by the management as to its causes. The reason commonly assigned is that the mine is shut down pending its examination by an expert. We think the work has been too extensively carried on to allow of the management being in any doubt as to the nature of the ore in the mine. The facts of the matter are, in our opinion, that the machinery on the Monte Christo is inadequate to allow of the working of both the Virginia and the Monte Christo, and one of these had to suffer in consequence. Again, the completion of the broad gauge into Rossland from Trail, and the putting in of a spur along Center Star gulch to the Monte Christo, will allow of a reduction of \$1 per ton in freight charges. Further, it is understood, when the lead stack, now in course of construction at Trail, is finished, there will be, according to common report, another reduction of \$4 per ton in treatment charges, owing to the value of the ore as a flux. These causes are in themselves quite sufficient to account for the close down of the mine. Toronto has boomed this stock extensively, and Montreal evinces the utmost faith in the property, which is also backed by Chas. R. Hosmer, and by several other officials of the C.P.R. Altogether, we think that the alarm displayed is uncalled for, and that the camp is in a first class condition. The stocks most in demand during the past month have been Iron Horse, Commander, Iron Colt, Homestake, Gopher, Deer Park, Grand Prize, White Bear, Eureka, Gertrude, Giant, Iron Mask, Monte Christo, Virginia, and St. Elmo. Outside of the camp proper, Victory Triumph has had good backing, while Knob Hill and Old Ironsides in the Boundary District have had quite a little flurry. Salmo Con. in the Ymir, and Silver Queen in the Cariboo Creek, have had a quick sale on this market and in the East. Our pick of the above is Monte Christo, Salmo Con. and Deer Park.

## THE STOCK MARKET.

|                  |      |                            |       |
|------------------|------|----------------------------|-------|
| Abe Lincoln..... | \$ 5 | Athabasca.....             | \$ 33 |
| Commander.....   | 15   | Brandon & G'n Cr'n.....    | 25    |
| Deer Park.....   | 21   | Cariboo (C. McKinn'y)..... | 75    |
| Eureka.....      | 9    | Cariboo Hydraulic.....     | 1 30  |
| Gertrude.....    | 8    | Cayoosh Creek Mines.....   | 50    |
| Giant.....       | 8    | Dundee.....                | 25    |
| Gopher.....      | 4    | Dardanelles.....           | 7     |
| Grand Prize..... | 4    | Fern.....                  | 75    |

|                      |      |                      |      |
|----------------------|------|----------------------|------|
| Iron Colt.....       | 12   | Goodenough.....      | 20   |
| Iron Horse.....      | 18   | Golden Cache.....    | 16   |
| Iron Mask.....       | 75   | Hall Mines.....      | 6 50 |
| Jumbo.....           | 53   | Knob Hill.....       | 30   |
| Le Roi.....          | 8 00 | London Hill.....     | 15   |
| Lilly May.....       | 20   | Nelson Poorman.....  | 50   |
| Monte Christo.....   | 20   | Old Ironsides.....   | 44   |
| Mugwump.....         | 5½   | Reco.....            | 1 75 |
| Novelty.....         | 5    | Salmo Con.....       | 20   |
| Poorman.....         | 12½  | Smuggler.....        | 16   |
| Rossland Homestake.. | 5    | Slocan Star.....     | 1 50 |
| Silver Bell.....     | 2    | Sable Creek.....     | 4    |
| St. Elmo.....        | 5    | Tamarac.....         | 7    |
| Victory Triumph..... | 9    | Tinhorn.....         | 11   |
| Virginia.....        | 60   | Two Friends.....     | 13   |
| War Eagle.....       | 2 95 | Van Anda.....        | 5    |
| White Bear.....      | 8    | Victoria Texada..... | 11   |

THE STOCK MARKET.

STOCKS have been generally quieter during the month of October, which may be accounted for by the great slump in the price of a number of shares which had previously been favourites with investors.

In the Lillooet District the tremendous slump in Golden Cache has been a marked feature of the month, prices having fallen as low as nine and a half cents and we hear of some transactions having taken place at eight cents. A meeting of this company is called for the 16th of November "for the purpose of submitting a statement of the company's affairs and considering and deciding upon what course of action should be adopted to provide funds for the further developments of the company's property."

In Vancouver Island Stocks Consolidated Alberni has been active, and about 50,000 shares have changed hands in Victoria on account of the report of the bond of the mine to an English company, on the basis of \$35,000 cash and 17½ per cent. of the capital stock in the English company. We understand that the mine never looked better and if the option is taken up we are informed that about \$4,000 per month will be spent in development.

On Texada Island the Van Anda mine is about to ship another 200 tons of \$40 ore to Swansea. Van Anda shares

have been selling well at from four and a half to five cents. It is reported that the Victoria-Texada is about to be bonded to an English company. It will be remembered that fourteen and a half tons of ore from the Victoria-Texada Company's mine were shipped to the stamp mill at Victoria last year yielding \$900.

In Nelson division Athabasca has been a favourite and also Dundee and Tamarac.

In Slocan stocks there has not been much activity. Several blocks of Dardanelles have changed hands at five cents and the price has advanced to seven and a half cents, a good strike having been made at the 340 foot level, exposing a fine body of ore three feet wide.

In Fairview Camp Smuggler has been in demand at sixteen to seventeen cents, and there has been some enquiry for Winchester in the vicinity of fourteen cents.

In the Rossland district the feature has been the tremendous slump in the Monte Christo share from thirty cents to fifteen cents owing to the closing down of the mine for a short time to allow an expert to examine the property and advise as to its future operation. Virginia has also fallen very considerably in price, and some Virginia shares have been quoted as low as fifty cents.

Iron Mask shares have also fallen from ninety to seventy-three cents.

Iron Colt has been in demand owing to the discovery that the lead was a continuation from the famous Kootenay Columbia, and the that work at the mine is about to be resumed. Silver Bell shares have been dealt in, owing to the reorganization of the Company and the proposed resumption of work. There has also been some demand for Grand Prize. It is reported that the Nest Egg Fire Fly may resume operations, as the property has been bonded to a Toronto syndicate.

White Bear shares have been in demand, due to the strike in the mine.

Owing to the resumption of work in the Gopher and Homestake, these shares have been largely dealt in and it is expected that these stocks will be very active in the near future.

In Revelstoke district Carnes Creek mines are looking well, and assays have gone as high as \$230.00 in gold per ton.

The Hidden Treasure mine in Vernon district, paid another dividend the other month, of \$1 per share. This is a silver property situate at Cherry Creek.

# The Royal Electric Company

MONTREAL, QUEBEC.

— MAKERS OF —

## Electrical Mining Machinery

### MOTORS

Adapted for Operating Stamps, Compressors, Hoists, Trams, Drills, Pumps.  
Lighting Plants for Mines and Buildings.

## OUR S. K. C. SYSTEM

RENDERS DISTANT WATER POWERS AVAILABLE  
FOR ALL CLASSES OF MINING WORK.

— WRITE OUR BRITISH COLUMBIA BRANCHES AT —

Rossland.

36 Government St., Victoria.

**Mining Stocks.**

Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C., Oct. 21, '98.

| Company.                                | Capital.    | Par Value. | Price. |
|-----------------------------------------|-------------|------------|--------|
| <b>TRAIL CREEK.</b>                     |             |            |        |
| Alberta.....                            | \$1,000,000 | \$1        | \$ 6   |
| Big Three.....                          | 3,500,000   | 1          | 11     |
| Bruce.....                              | 1,000,000   | 1          | 10     |
| Butte.....                              | 1,000,000   | 1          | 02     |
| Caledonia Con.....                      | 1,000,000   | 1          | 5½     |
| California.....                         | 2,500,000   | 1          | 15     |
| Camp Bird.....                          | 1,000,000   | 1          | 05     |
| Celtic Queen.....                       | 750,000     | 1          | 03     |
| Centre Star.....                        | 3,300,000   | 1          |        |
| Commander.....                          | 500,000     | 1          | 13     |
| Deer Park.....                          | 1,000,000   | 1          | 21     |
| Enterprise.....                         | 1,000,000   | 1          | 20     |
| Evening Star.....                       | 1,000,000   | 1          | 06     |
| Georgia.....                            | 1,000,000   | 1          | 15     |
| Gertrude.....                           | 500,000     | 1          | 8      |
| Golden Drip.....                        | 500,000     | 1          | 15     |
| Gopher.....                             | 1,000,000   | 1          | 05½    |
| Hattie Brown.....                       | 1,000,000   | 1          | 03     |
| High Ore.....                           | 500,000     | 1          | 05     |
| Homestake.....                          | 1,000,000   | 1          | 6      |
| Imperial.....                           | 1,000,000   | 1          | 10     |
| Iron Horse.....                         | 1,000,000   | 1          | 17½    |
| Iron Mask.....                          | 500,000     | 1          | 73     |
| I.X.L.....                              | 1,000,000   | 5          | 10     |
| Iron Colt.....                          | 1,000,000   | 1          | 10     |
| Jumbo.....                              | 500,000     | 1          | 55     |
| Le Roi.....                             | 2,500,000   | 1          | 7 00   |
| Lilly May.....                          | 1,000,000   | 1          | 20     |
| Mabel.....                              | 1,000,000   | 1          | 15     |
| Mayflower.....                          | 1,000,000   | 1          | 10     |
| Monita.....                             | 750,000     | 1          | 19     |
| Monte Cristo.....                       | 1,000,000   | 1          | 16     |
| Morning Star.....                       | 1,000,000   | 1          | 04     |
| Nest Egg-Firefly.....                   | 1,000,000   | 1          | 10     |
| Northern Belle.....                     | 1,000,000   | 1          | 10     |
| Novelty.....                            | 1,000,000   | 1          | 05     |
| Palo Alto.....                          | 1,000,000   | 1          | 05     |
| Phoenix.....                            | 500,000     | 1          | 13     |
| Poorman.....                            | 500,000     | 1          | 53     |
| R. E. Lee.....                          | 2,000,000   | 1          | 8      |
| Red Mountain View.....                  | 1,000,000   | 1          | 22     |
| Rossland, Red Mountain.....             | 1,000,000   | 1          | 06     |
| St. Elmo.....                           | 1,000,000   | 1          | 12½    |
| St. Paul.....                           | 1,000,000   | 1          | 06     |
| Silverine.....                          | 500,000     | 1          | 2½     |
| Silver Bell.....                        | 1,000,000   | 1          | 9      |
| Victory Triumph.....                    | 1,000,000   | 1          | 2½     |
| Virginia.....                           | 1,000,000   | 1          | 3 00   |
| War Eagle Consolidated.....             | 2,000,000   | 1          | 28     |
| West Le Roi.....                        | 500,000     | 1          | 08     |
| White Bear.....                         | 2,000,000   | 1          |        |
| <b>AINSWORTH, NELSON AND SLOCAN.</b>    |             |            |        |
| American Boy.....                       | 1,000,000   | 1          | 12     |
| Arlington.....                          | 1,000,000   | 1          | 6½     |
| Argo.....                               | 100,000     | 0 10       | 10     |
| Athabasca.....                          | 1,000,000   | 1          | 33     |
| Black Hills.....                        | 100,000     | 0 10       | 10     |
| Buffalo of Slocan.....                  | 150,000     | 0 25       |        |
| Canadian M. M. and S. Co.....           | 2,000,000   | 1          | 07½    |
| Channe.....                             | 250,000     | 0 25       | 25     |
| Cumberland.....                         | 500,000     | 10         |        |
| Dundee.....                             | 1,000,000   | 1          | 35     |
| Dardanelles.....                        | 1,000,000   | 1          | 08     |
| Dellie.....                             | 1,000,000   | 1          | 12     |
| Eldon.....                              | 1,000,000   | 1          | 05     |
| Ellen.....                              | 1,000,000   | 1          | 07½    |
| Elkhorn.....                            | 1,000,000   | 1          | 10     |
| Exchequer.....                          | 1,000,000   | 1          | 10     |
| Fern Gold.....                          | 200,000     | 0 25       | 63     |
| Goodenough.....                         | 800,000     | 1          | 25     |
| Gibson.....                             | 650,000     | 1          | 17½    |
| Grey Eagle.....                         | 750,000     | 1          |        |
| Hall Mines.....                         | 300,000     | £1         | 7 00   |
| Idler.....                              | 1,000,000   | \$1        | 12½    |
| Kaslo-Montezuma.....                    | 1,250,000   | 1          | 12     |
| Lerwick.....                            | 1,500,000   | 1          | 15     |
| London.....                             | 150,000     | 25         | 25     |
| Minnesota.....                          | 1,000,000   | 1          |        |
| Nelson-Poorman.....                     | 250,000     | 0 25       | 30     |
| Northern Light.....                     | 250,000     | 1          | 16½    |
| Noble Five Con.....                     | 1,200,000   | 1          | 18     |
| Ottawa and Ivanhoe.....                 | 1,000,000   | 1          | 12½    |
| Payne.....                              | 2,500,000   | 2 50       |        |
| Rambler Con.....                        | 1,000,000   | 1          | 14     |
| Reco.....                               | 1,000,000   | 1          | 1 30   |
| Slocan-Reciprocity.....                 | 1,000,000   | 1          | 06     |
| Slocan Star.....                        | 500,000     | 50         | 1 50   |
| Santa Marie.....                        | 1,000,000   | \$1        | 05     |
| Silver Band.....                        | 250,000     | 0 25       | 12½    |
| Slocan Queen.....                       | 1,000,000   | 1          | 10     |
| Star.....                               | 1,000,000   | 1          | 07     |
| St. Keverne.....                        | 1,000,000   | 1          | 03½    |
| Sunshine.....                           | 500,000     | 10         |        |
| Tamarac.....                            | 1,000,000   | 1          | (8     |
| Two Friends.....                        | 240,000     | 30         | 13     |
| Washington.....                         | 1,000,000   | 1          | 25     |
| Wonderful.....                          | 1,000,000   | 1          | 05     |
| <b>LARDEAU.</b>                         |             |            |        |
| Lardeau Goldsmith.....                  | 200,000     | 1          | 04     |
| Consolidated Sable Creek Mining Co..... | 1,500,000   | 1          | 10     |
| <b>TEXADA ISLAND.</b>                   |             |            |        |
| Gold Bar.....                           | 100,000     | 10         | 10     |

|                                     |             |      |       |
|-------------------------------------|-------------|------|-------|
| Raven.....                          | 1,000,000   | 1    | 10    |
| Texada Proprietary.....             | 250,000     | 0 25 | 25    |
| Texada Kirk Lake.....               | 600,000     | 1    | 1 00  |
| Treasury Mines.....                 | 250,000     | 25   | 25    |
| Van Anda.....                       | 5,000,000   | 1    | 06½   |
| Victoria-Texada.....                | 150,000     | 0 25 | 10    |
| <b>VANCOUVER ISLAND.</b>            |             |      |       |
| Alberni Mountain Rose.....          | 250,000     | 1    | 09½   |
| Consolidated Alberni.....           | 500,000     | 1    | 10    |
| Mineral Creek.....                  | 500,000     | 1    | 05½   |
| Mineral Hill.....                   | 750,000     | 1    | 05    |
| Quadra.....                         | 500,000     | 1    | 05    |
| <b>CARIBOO.</b>                     |             |      |       |
| Cariboo Gold Fields Ltd.....        | £100,000    |      |       |
| Cariboo Hydraulic Consolidated..... | \$5,000,000 | 1    | 85    |
| Cariboo M. & D. Co.....             | 300,000     | 1    | 25    |
| Golden River Quesnelle.....         | £350,000    | £1   | 1 40  |
| Horsefly Hydraulic.....             | \$200,000   |      |       |
| Horsefly Gold Mining Co.....        | 1,000,000   | \$10 | 1 50  |
| Victoria Hydraulic.....             | 300,000     | 1    | 85    |
| <b>LILLOOET DISTRICT.</b>           |             |      |       |
| Alpha Bell.....                     | 500,000     | 1    | 50    |
| Cayoosh Creek Mines.....            | 500,000     | 1    | 50    |
| Excelsior.....                      | 500,000     | 1    | 50    |
| Golden Cache.....                   | 500,000     | 1    | 09½   |
| Lillooet Gold Reefs.....            | 200,000     | 25   | 25    |
| <b>FAIRVIEW CAMP.</b>               |             |      |       |
| Smugler.....                        | 1,000,000   | 1    | 18    |
| Tin Horn.....                       | 200,000     | 0 25 | 15    |
| Winchester.....                     | 250,000     | 0 25 | 21    |
| <b>BOUNDARY.</b>                    |             |      |       |
| Golden Crown.....                   | 1,500,000   | 1    | 25    |
| Knob Hill.....                      | 1,300,000   | 1    | 27    |
| Old Ironsides.....                  | 1,000,000   | 1    | 50    |
| <b>CAMP MCKINNEY.</b>               |             |      |       |
| Camp McKinney Development Co.....   | 1,000,000   | 1    | 09    |
| Cariboo.....                        | 800,000     | 1    | 75    |
| Minnehaha.....                      | 1,000,000   | 1    | 17    |
| Waterloo.....                       | 1,000,000   | 1    | 06    |
| <b>REVELSTOKE.</b>                  |             |      |       |
| Carnes Creek Consolidated.....      | 1,000,000   | 1    | 10    |
| <b>VERNON DIVISION.</b>             |             |      |       |
| Hidden Treasure.....                | 100,000     | 10   | 10 00 |

† Dividends paid to date are as follows: War Eagle, (new company) \$90,000; Trail Creek District—Le Roi, \$325,000; War Eagle (old company), \$217,000. Camp McKinney—Cariboo, \$221,000. Nelson District—Hall Mines, £26,750; Fern, \$10,000. Slocan District—Payne, about \$1,000,000; Slocan Star, \$400,000; Reco, \$287,000; Idaho, \$240,000; Whitewater, \$154,000; Rambler-Cariboo, \$40,000; Last Chance, \$40,000; Two Friends, \$6,000; Hidden Treasure \$11,000.

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

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

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

AMOUNT AND VALUE OF MATERIALS PRODUCED 1896 AND 1897.

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

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

**GOLD.**

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

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

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

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

**SILVER-LEAD.**

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

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

**COPPER.**

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

**COAL AND COKE.**

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

**SMELTERS AND RAILROADS.**

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

**CAPITAL.**

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

**MINERAL LANDS.**

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

**YUKON GOLD FIELDS.**

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

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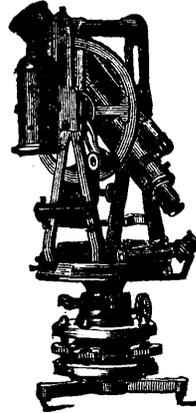
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TIME TABLE NO. 36.

(Taking effect September 1st, 1898.)

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LEAVE VICTORIA—For New Westminster, Ladner and Lulu Island Sunday at 23 o'clock; Wednesday and Friday at 7 o'clock. Sunday's steamer to New Westminster connects with C.P.R. Train No. 2 going east, Monday.

FOR PLUMPER PASS—Wednesdays and Fridays at 7 o'clock.

FOR MORESBY AND PENDER ISLANDS—Fridays at 7 o'clock.

LEAVE NEW WESTMINSTER—For Victoria Monday at 13:15 o'clock. Thursday and Saturday at 7 o'clock.

FOR PLUMPER PASS—Saturday at 7 o'clock.

FOR PENDER AND MORESBY ISLANDS—Thursday at 7 o'clock.

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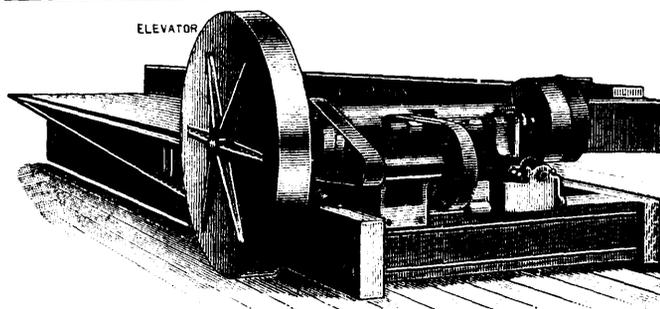
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