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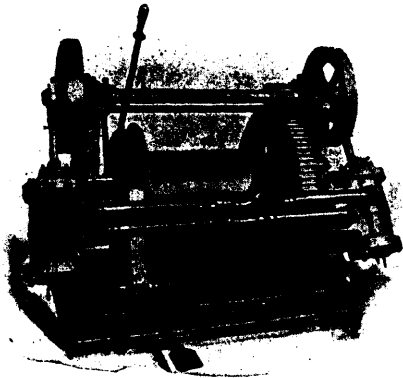
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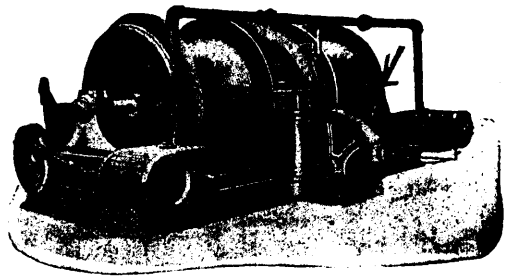
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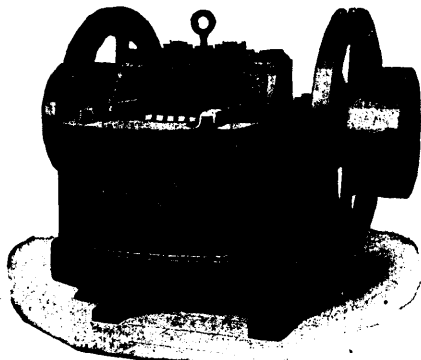
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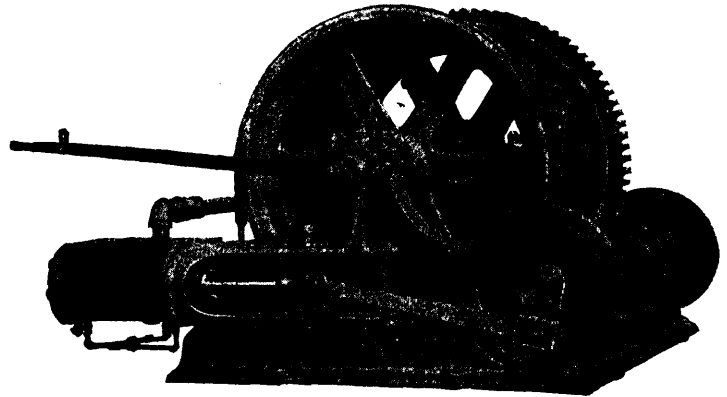
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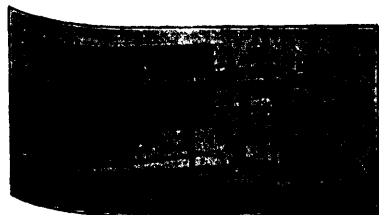
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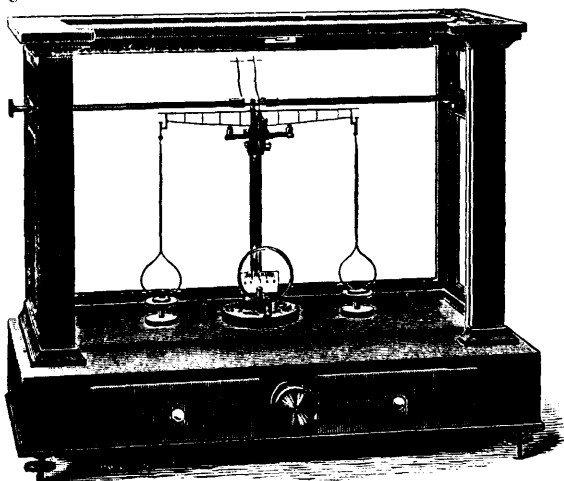
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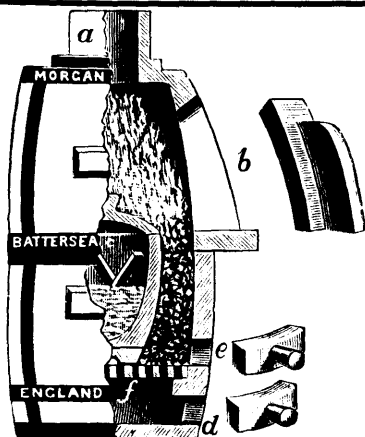
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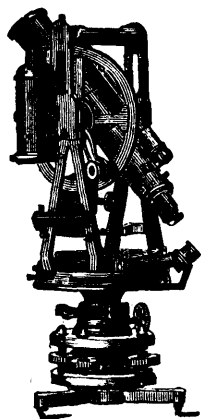
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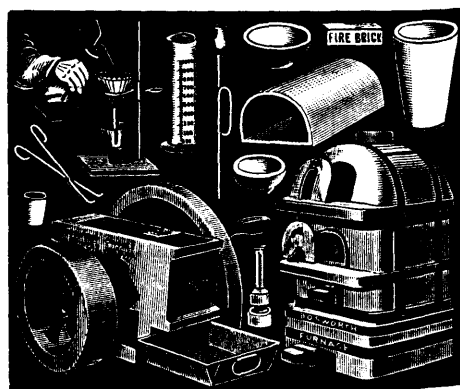
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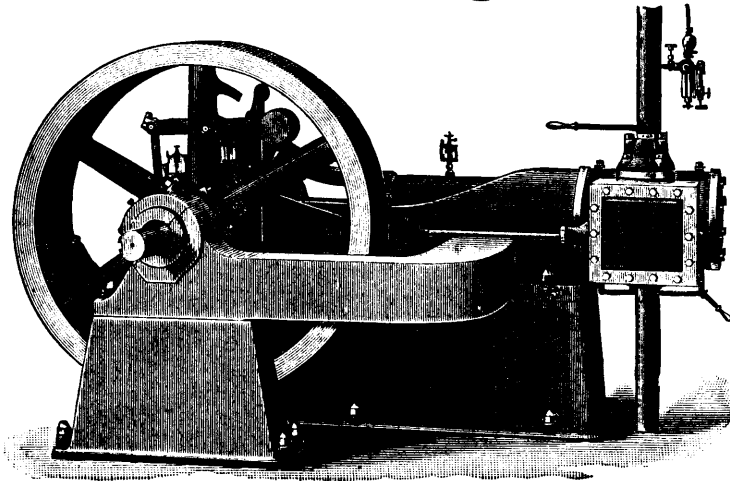
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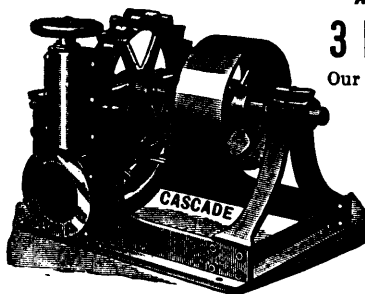
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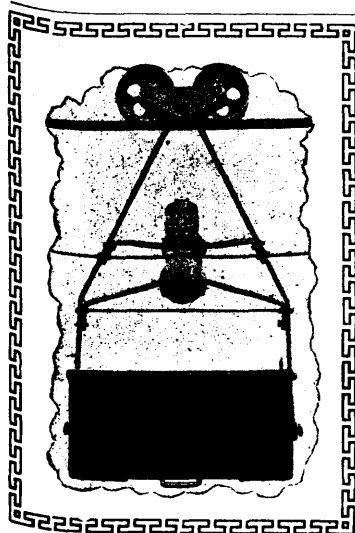
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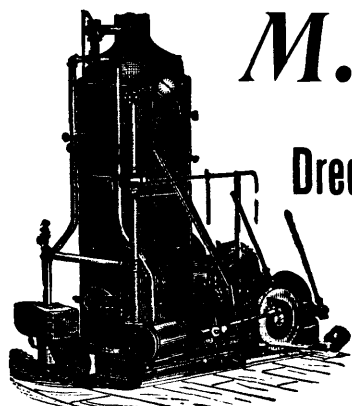
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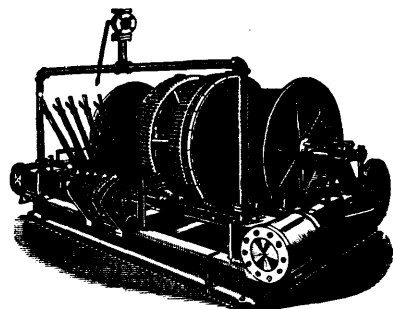
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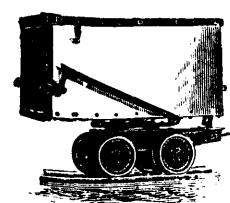
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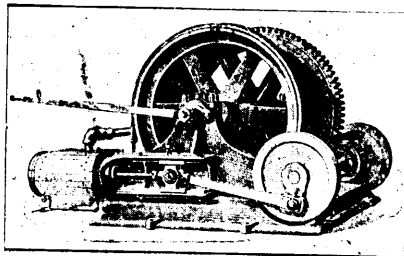
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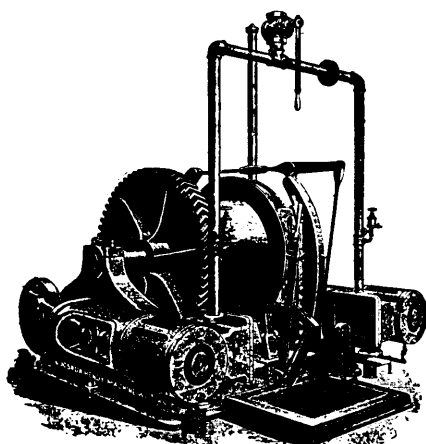
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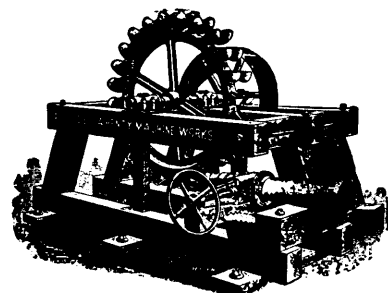
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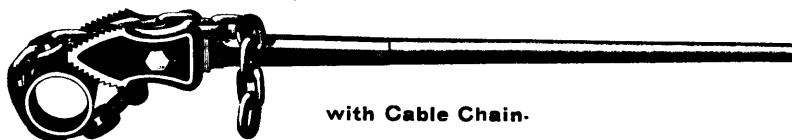
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Vol. V.

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No. 9.

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P.O. Drawer 645, Victoria, B.C.

All communications relating to the business department of the British Columbia MINING RECORD to be addressed to the

BUSINESS MANAGER, B.C. MINING RECORD,

P.O. Drawer 645, Victoria, B.C.

IN a valuable paper, of which we have received a revised copy, recently contributed to the Institution of Mining and Metallurgy, Mr. J. D. Kendall, whose eminence as a mining engineer is too well recognized to need remark here, treats in a

SILVER-LEAD very exhaustive and interesting
MINING fashion on the subject of the silver-
IN THE SLOCAN. lead deposits of the Slocan district.

The value attaching to this paper at the present time is two-fold, for apart from its great scientific and technical interest, the information contained therein concerning the wealth of the Slocan region, will, we think, do much to moderate the prejudice still existing among mining men and capitalists in London against silver-lead mining in this part of the world.

The silver-lead mining industry in the Slocan, as Mr. Kendall points out, is yet in its infancy, but the developments have been quite sufficient to justify his authoritative opinion that British Columbia will, in the near future, "become, in all probability one of the most important producers of silver-lead ore in the world, if indeed it will not occupy the first position." At present Canada, according to that excellent statistical work, the "Mineral Industry," ranks about sixth in the list of lead-producing countries, but her production as compared with that of Spain, of Germany, of the United States, or even of Mexico, is very insignificant, and the fulfilment of Mr. Kendall's prediction as to the future rapid expansion of the industry would seem at first sight sufficiently remote. The production of lead from the Slocan for the past seven or eight years, makes, however, taking all things into consideration, a most satisfactory showing, and it is quite easy on closer examination to

understand how under more favourable conditions of transport, treatment and market, the silver-lead industry of British Columbia could, in a relatively short space of time, attain to a position of very much greater importance than it at present occupies. Of the possibilities in this direction we have already had some demonstration in the remarkable increased output of silver-lead ore for each succeeding year from 1892 to 1897. In 1892 ore was transported from the White-water and also from two or three silver-lead properties near Sandon (on horseback) a distance of 17 miles, at costs ranging from \$40 to \$45 per ton; to this was added the further charge of approximately \$20 per ton for the carriage of the ore by boat and rail to smelters in the United States. In this year 808,420 pounds of lead and 77,160 oz. of silver only, represented the output from the Slocan mines. Two years later, in 1894, the Nakusp and Slocan Railway was opened as far as Three Forks, and the production increased to 5,662,523 pounds of lead and 746,379 oz. of silver. Again, in 1895, the Kaslo & Slocan Railway was built and the Nakusp & Slocan line extended to Sandon, thus affording the mines of the district transportation facilities over three great railway systems, and reducing the cost of ore carriage \$20 per ton. The result of those developments was the production in 1895 of 16,475,464 lbs. of lead and 1,496,522 oz. of silver—a truly noteworthy gain. In 1896 and 1897 the output continued to show an increase, but hardly in so marked a ratio; and in 1898, owing to the unfavourable conditions prevailing in our only market, that of the United States, the production, for the first time in five years, fell away. From these statistics the following facts, we think, can be deduced: 1st. That moderate as were the advantages afforded the Slocan miners by the construction of the railway lines connecting with the great trans-continental systems—moderate, in the sense that even under prevailing conditions the cost of haulage to the American smelters is still very great—the effect was sufficient to establish silver-lead mining in the Slocan as an industry. 2nd. That after the first start had been made, as evinced by the increased production of the three years following the opening of the railways, a still further impetus was needed to carry the industry forward at an equal rate of progression. 3rd. That until this additional stimulation is provided, the conditions cannot be regarded as favourable to any very remarkable expansion of the industry. The impetus the lead mining industry of this country now requires must follow the successful solution of the problem involving the reduction of freight and treatment costs by the smelting and refining of our lead ores in Canada, and the marketing of our surplus production under better trade auspices than through United States channels. As we have previously mentioned the early establishment of a refinery by the Canadian Pacific Railway Company is already con-

templated, but whether in the expectation that the result of the enterprise will cause so rapid a development of the lead industry in British Columbia as to render the profitable operation of works of this character possible within a reasonable space of time, or in the belief that our present production of lead ore is sufficient to, at least, maintain without a direct loss, a refinery in operation, we are not in a position to judge; but, it is, meanwhile, abundantly clear that the great railway corporation has determined upon a policy, which it has exceptional opportunities of successfully carrying out, of assisting the development of the mining industry of British Columbia by every possible means. This policy while, of course, not adopted from purely disinterested motives, has already exerted a beneficial influence on mining in Rossland, and the present prosperous state of the industry in that district, the recent large increase in ore-production and the exploitation of the lower-grade mines, is, we opine, largely attributable to the considerable reduction in freight and treatment costs, since the Canadian Pacific Company acquired the smelting works at Trail.

Mr. Kendall, meanwhile, has compiled some interesting figures comparing the costs of smelting our Slocan ores at home and abroad. The present duty on lead in Slocan ores, entering the United States, is 1.5 cents per pound, and on lead in base bullion 2.125 cents per pound. The average lead contents of the ore exported from the Slocan has been about 50 per cent. At the present rate of \$15 per ton on ore of this grade the duty on a ton of base bullion would be \$42.50. The duty on two tons of ore, the lead contents of which would be equal to one ton, the duty is approximately \$31.80, as against \$42.50 if the same weight of lead be shipped as base bullion. Estimating the freight on ore at \$15 per ton (of ore) and the cost per ton of lead will be \$31.20. Thus, even at present, there is a small difference in favour of smelting at Trail. Mr. Kendall gives the following example:

Smelting Slocan ores in the United States:

	Per ton of base bullion.
Freight at \$15 per ton of ore	\$31 20
Duty at 1.5 cents per lb. of lead in ore...	31 80
Total	\$63 00
Smelting Slocan ore at Trail:	
Freight on ore and bullion (say).....	\$18 00
Duty at 2.125 cents per lb. of lead in base bullion	42 50
Total	\$60 50

The estimated cost of freight in the second of these statements may or may not be wide of the mark, but it is pointed out that the Canadian Pacific Railway Company can, of course, largely regulate this charge as may be necessary to compete successfully with American smelters for the treatment of the ores.

It is interesting, however, to note in this connection that Mr. R. R. Hedley, superintendent of the Hall Mines Smelter, has stated that the Nelson works, at any rate, could not compete with American smelters on ores carrying over 40 per cent. lead, for the reason, that above that percentage the additional duty on pig-lead offsets any advantage gained in freights.

During the month a very interesting discussion on

the subject of lead smelting in Canada took place in Rossland, at a meeting of the representatives from the Boards of Trade of East and West Kootenay and Yale. Two solutions of the problem were there offered, one by Mr. Buchanan, of Kaslo, proposing a reciprocal arrangement with the United States for the removal of the duty on lead in ore, and not, be it noted, on lead in bullion; and the other by Mr. W. H. Aldridge, superintendent of the Trail smelter, advocating re-admittance, free of duty, into Canada of Canadian lead smelted in this country but refined in the United States, and the imposition of higher duties by the Dominion Government on all manufactured lead, thereby affording Canadian smelters a market for the local product to the extent, at least, of the present consumption of lead in Canada. Of the two propositions, that of Mr. Aldridge appears to us to be not only the most practical, but also the most practicable. It is very unlikely, in the first place, that the United States Government would under any circumstances make such a concession as would place lead miners in Canada on an equal footing with lead miners in the United States, for whose special benefit and protection the duty on foreign lead is levied; but if so, the very object at which Mr. Buchanan aims would be defeated, for with the free entry of British Columbia lead ores into the United States all hope of establishing a local smelting industry would be at an end. Our local smelters, at present, labour under two disadvantages. First, the American smelters have large tonnages of high-grade dry ores, which permits of a more economical treatment of the Slocan wet ores; and secondly, they are more favourably situated as regards the disposal of the product than (say) the Trail works, and in this respect: while British Columbia lead, whether treated in this country or in the United States, finds its way to the London market, the United States Government only requires the smelters to export 90 per cent. of the lead they import; thus American smelters are enabled to sell in New York—at the New York price of from \$4.25 to \$4.50—the difference between 10 per cent. and what they lose in smelting the ore. They not only do not pay for this percentage, but have actually charged to the British Columbia miner the one-and-a-half cents per pound duty imposed by the United States Government on foreign lead in ore. Hence it will be seen that, with a competition as keen as that existing, American smelters have a very considerable "pull" in bidding for our ores; for the average price they are in a position to obtain for their product is very much greater than the Canadian smelter can hope to get when forced to sell all his lead in the English market. Mr. Aldridge, therefore, merely asks the Government to allow Canadian smelters the opportunity to take advantage of the Canadian market to increase thereby the average selling price of lead mined in Canada, and enable our smelters to hold the Canadian price at the cost of importing from England, where our surplus would be marketed. At the same time by increasing the duty on manufactured lead, encouragement would be afforded for the establishment and operation of one or more refineries.

Our criticism of the prospectus of the Boston & British Columbia Copper Mining and Smelting Co., has provoked the following interesting, not to say amusing reply, issued in the form of a circular to the

unfortunate shareholders from the general manager, Mr. William Crosbie :

BOSTON, MASS.

DEAR SIR :

Owing to a disreputable attempt on the part of certain parties to circulate false and libellous rumors and reports in regard to the Boston and British Columbia Copper Mining and Smelting Co., through the channels of one Joseph Martin, formerly Attorney-General of the Province of British Columbia, and others, notably one H. Mortimer Lamb, whose ability to distort the facts is only equalled by his disreputable political affiliations—as an effectual answer to all of their libels the following telegram taken from the New York Evening "Sun" shows that they have all been ousted out of office, and their ability to do harm to honest mining enterprises effectually curtailed.

BRITISH COLUMBIA'S GOLD CRISIS.

FALL OF PROVINCIAL GOVERNMENT WHICH OPPOSED AMERICAN ENTERPRISE.

VANCOUVER, B.C., July 5th—The British Columbia Government which so badly mismanaged affairs in the Atlin gold field by sending out dishonest officers and passing an alien law that was inoperative, and by refusing to Chicago capitalists to build on British naval reserve land, though they held a lease from Canada's Government, went to smash yesterday owing indirectly to the people losing confidence in it for these acts. The Attorney-General responsible for the legislation was forced out of office in obedience to public opinion, and the Government will be compelled to go to the people again, retire or give place to an opposition which favors encouragement of American enterprise in the province.

The Government's fall was directly caused by those in power outraging public opinion by catering entirely to the labour and Socialistic element in British Columbia. By passing an act forbidding Japanese to labour in coal mines the Government shut up valuable collieries which were a source of great wealth to the Province. By passing an eight hour law for all miners in the Province it closed up half the mines, as the owners could not afford to pay the same wages for a short shift as they did for a long one. By passing the Alien law for the Atlin gold fields they killed the diggings, which have been closed up by the Government.

The disturbing element was Joseph Martin, Attorney-General, who is a Socialist pure and simple and a dangerous labour agitator. Premier Semlin, who dismissed him, was acting Lieutenant-Governor during Governor McInnes's absence in Atlin. He dismissed Martin on three counts: For using language unbecoming a Cabinet Minister at a public banquet; for neglecting his duty as Attorney-General by privately working against the Government in the interest of Chicago capitalists who desired to build a sawmill on British reserve claimed by the Province; and for selling cabinet secrets for political purposes.

The Minister of Mines, Mr. Hume, became burdened with the reproaches of mine owners owing to his acts, and wished to retire. The Minister of Works, F. Carter Cotton, wishes to form a coalition government with the opposition, and it is said, desires the Premiership. All the Cabinet members are anti-Britishers, and came into power chiefly on the cry of "Canada for Canadians," the former Ministry wishing to throw the Country wide open to American capital.

BOSTON & BRITISH COLUMBIA COPPER MINING & SMELTING COMPANY.

Per WILLIAM CROSBIE, General Manager.

We are also indebted to the Boston Chamber of Commerce—the attention of whose executive board had been previously called to the gross misrepresentations and untruths contained in the prospectus of the Boston & B.C. Copper Mining & Smelting Co.—for a printed copy of a letter addressed to Mr. R. P. Rothwell, editor of the *Engineering & Mining Journal*, New York, and signed by Mr. C. M. Reed. To this letter, which is headed in large type, "The Other Side of the Question," and is doubtless also intended to pacify inquisitively-inclined shareholders, is

attached a foot note by the "Prentice Investment Co.," of New York, testifying that Mr. Reed is a "wealthy and well-known resident of Boston, and a heavy stockholder in the corporation above referred to (The Boston & B.C. Copper Mining & Smelting Co.), having bought his stock after a most complete investigation." Mr. Reed writes:

THE OTHER SIDE OF THE QUESTION.

A duplicate of the letter mailed to

12 Pearl street, July 5, 1899.

P. P. ROTHWELL, ESQ.,
Editor *Engineering and Mining Journal*,
253 Broadway,
New York City.

DEAR SIR :

In your issue of June 24, 1899 there was printed a long tirade against the Boston and British Columbia Copper Mining & Smelting Company, of Maine, inspired by one H. Mortimer Lamb, managing editor of the *MINING RECORD*, of Victoria, B.C.

Ordinarily it would be consistent to pass without notice this most unwarrantable assault, for it is so flagrant, so malicious, so libelous, and so wanting in common honesty and minus (*sic*) of facts, that all of our readers who are interested in the Boston & British Columbia Copper Mining and Smelting Company look upon it in its true worth, and smile with contempt at its virility (*sic*), but it appears to me, who have read your admirable paper these many years, that the free advertisement given to this poor imitator of yours is such a base imposition upon you, that some word from those who are and have a money interest in the British Columbia Copper Mining & Smelting Company should point out to you some facts regarding the Company, although you have in no way been interested or own a share of its stock; and please bear in mind that this letter is a personal communication, and not intended for the public, for I don't believe anyone's affairs are properly conserved by a newspaper wrangle, which usually results disastrously for all concerned, no matter how just the cause on the one side or the venom on the other.

I have had from the first inception of this Company and its business a perfect acquaintance with all its interests, in common with its Board of Directors, and this letter of Editor (*sic*) Lamb's is not the first attempt to injure this Company, for those who are back of this letter in your Journal failed in their base attacks upon the business of this Company, after the very basest sort of letters to its Directors, and finding that the respectable community of Revelstoke, together with its leading newspapers had seen fit to condemn, in very bitter terms, such a dastardly move, found no other way of striking the B. & B.C. Co. than through your journal, making you an innocent accuser of people, and a business I feel sure you never knew of and about, making the attack the very worst in design possible.

The revenge sought in all these attacks is a private one solely, and partaking of a political nature, locally, for the power behind these base attempts made a favourable report of this property to parties investigating, and before the Company was formed and before a single dollar was invested in it; but later, from an antipathy to its promoters, who are ranged on the side of good government in B.C. and are opposed to the occupancy of the seat in the B.C. Legislature of this "nigger in the wood-pile," and on account also of some personal dislike towards the promoters, this B.C. Member of Legislature has sought in every way to do personal injury to them, and not gaining any headway, and their cause being taken up so vigorously by the local papers at Revelstoke, he seeks now to injure the Company, none of which have in any way, form or manner, done him the least injury possible; in fact they regarded his good report on the property as of value, until now, when he ignores it entirely, proving him to be one sort of a man one day, and another sort the next day, as his humour changes.

The facts are that this Company has a very valuable prospect, and are very hard at work developing the same, in a proper and mining-like manner. The promoters have not made one single dollar so far, and cannot until the Company is an assured success; not a dollar is paid as salary to the promoters or to the officers of the Company, all hands giving their personal time to the business of the Company, for no compensation, and with a view of making a complete success of the affair.

Every dollar of the money had from sales of stock goes to put the business on a commercial basis, develop the mines and begin the work of their smelting plant.

The capital is not over large for the work laid out to do, for

when you consider that in addition to providing the mine and getting it on a shipping basis, they propose the erection of a large smelter and reduction plant, not only for their use, but for the use of many other mines near to Revelstoke, you must agree that all this will take a large sum of money, and so far the affairs financially are a complete success.

They have on this property monster veins, true fissure in formation, reported so by competent experts before the company put in a dollar, and since by new examinations and work done and doing on the property.

The Revelstoke Board of Trade, a very respectable body of men, held special meetings regarding this Company and its affairs and they have adopted resolutions not only commending the business, but state from their knowledge the great value of this Company's property.

The Company was legally organized under the laws of Maine and registered at the Commissioner of Corporations of Massachusetts, and more than two months ago paper and orders for registering at B.C. were made out and placed with their attorney at Revelstoke, and I venture to say that the registering has been made there, notwithstanding Editor (*sic*) Lamb's statement to the contrary, and if it has not been done, the reasons are such as commend themselves to the attorney of the Company, and no cause of alarm to its Directors has risen on that account, but, as a matter of fact, the registering is only a step, and whether it has been done or not, militates nothing against the property as a mine.

All business of the Company is being done by as good a Board of Directors as any Company formed in this section of the country, the Directors being men of first-class standing as citizens and as financial men; besides reference to this statement can be had through any mercantile agency in the land.

You know that at best it is difficult for Americans to make a success of mining in Canada, chiefly through such scurrilous attempts at either blackmail or personal jealousy or revenge as has been exhibited in this case, but the best citizens of Revelstoke and that section are solidly with this Company, and believe in its management and the value of its property, and do not take any underhanded means to injure either the one or the other.

I shall ask the Directors of the Company to allow your representative to examine into its affairs and to show to him all its doings, not for an advertisement to the public, but to satisfy you personally, for I feel that to a certain extent you have been used as a cats-paw to further a personal revenge of a disgruntled member of the B.C. Legislature and a resident of Revelstoke, and it is your due to know which is honest and business-like, and which of the two is to be believed.

I trust you will adopt any suggestion of sending here a representative and meet the Directors and look into their affairs in this business, and I predict beforehand that you will not consider the libellous letter of Editor (*sic*) Lamb has any standing before you or your readers in facts.

Yours very truly,

C. M. REED.

The writer of the above letter is a wealthy and well-known resident of Boston, Mass. He is a heavy stockholder in the corporation above referred to, having bought his stock after a most complete investigation. Anyone desiring to verify the above communication can address him at 12 Pearl street, Room 6, Boston, Mass.

PRENTICE INVESTMENT CO.,
44 Broad Street, New York.

We have been unfortunately unable to discover the position occupied by Mr. C. M. Reed in Boston society; for notwithstanding the testimonial from the "Prentice Investment Co." that he is well-known, the Boston Chamber of Commerce can afford us no information concerning the gentleman. It is, however, regrettable plain that he is not an educated man, whether an honest one or merely the tool of others, cannot, perhaps be so easily determined. It will be observed that neither Mr. Crosby nor Mr. Reed have considered it worth while to contradict the charge of deliberate misrepresentation brought against the promoters of the Boston & British Columbia Copper Mining & Smelting Company, and published in both the MINING RECORD and in the *Engineering and Mining Journal*; but have endeavoured to "change the scent" by implying that the criticisms which

have appeared were inspired by political enemies. This is a very clever excuse, and very likely to "go down" with the shareholders of this Boston Company, who being Americans are, lamentably enough, accustomed to all phases of political depravity. In this country, however, the subterfuge will merely confirm the opinion already formed regarding this concern's *bona fides*, for company promoters in Canada are not publicly denounced by a member of Parliament nor cautioned by an Attorney-General, except in the public interests. Meanwhile the only part of Mr. Reed's letter that can be considered as at all satisfactory is the concluding sentence. If his request is granted and the Directors of the Boston & British Columbia Copper Mining & Smelting Company allow a representative of the *Engineering and Mining Journal* to examine fully into its affairs, without hearing the result of the investigation, we shall feel that the promoters of the concern are entitled to an apology.

Meanwhile, it will be interesting to note what reply the promoters of the Boston and British Columbia Mining Company will offer to the following letter, which appeared in the *Engineering & Mining Journal's* issue of the 22nd of August. At any rate, there should, we think, be no further necessity for us to refer again to Mr. Crosby's very palpable "fake" scheme:

To the Editor of the *Engineering & Mining Journal*:

SIR:—I have just read the letter of H. Mortimer Lamb in your issue of June 24th regarding the Boston & British Columbia Mining Company. About one year ago I sent a practical man to examine this Standard Group (not having the time to spare to do myself). There had been some little development work done and a sample from the Carbonate Chief (a very large ledge) assayed: Gold, \$2.40; silver, 2 oz.; copper, none. Concentrates from above sample assayed: Gold, \$4; silver, 2.12 oz.; copper, none. Sample of the Standard Ledge, 3 ft., assayed: Gold, \$2.80; silver, 2.50 oz.; copper, 12.8 per cent. Another sample of the Standard Ledge, 6 ft. wide, assayed: Gold, trace; silver, 1.80 oz.; copper 2.10 per cent.

There has been some leaching in the ledge and native copper is found in small pieces in crevices, as is often the case near the surface in many prospects. The only encouraging feature is, the one copper assay of 3 feet of ore in the tunnel; and I offered to do some development for a half interest, thinking that it was not a property to pay any cash for.

Last December, while in Revelstoke, I was approached by Mr. Crosby, of the firm of Beach & Crosby, mining brokers, but not generally known in Revelstoke, and was requested to join them to furnish means for Mr. Crosby to go to Boston (where he claimed he had a strong pull) to make favourable reports, etc. In consideration they would insure me good position, interests, etc. Upon inquiring about this firm I declined their very liberal offer by mail, not caring to meet the gentlemen again. The first part of March I found here a letter from the principal owner of the Standard Group requesting me to make a strong report to Boston people who would ask for it; another from Mr. Crosby with the same request and a third letter from H. E. Bullarn, 53 State Street, Room 317, Boston, Mass., inquiring as to what I knew of the Standard Group. I gave him all the details and particularly called his attention to the fact that the Standard ledge was located just below a glacier in an almost inaccessible position and in an undeveloped district, and that the transportation depended upon the navigation of the Columbia River above Revelstoke, to say nothing of the deep snows for nine months in the year, together with the rough and elevated locality. I also called his attention to the fact that Crosby & Company were quite unknown; in fact, I sent the letters received from the Standard owners and Crosby to him. Since that time I had heard nothing more until I saw Mr. Lamb's letter in the *Engineering & Mining Journal*. The prospects may be worthy of development but are not suitable for flotation.

OTTO ABELING.

Moscow, Idaho, Aug. 6, 1899.

We are very glad indeed to learn that the gentle-

men comprising the directorate and management of the Python Mining Company, Limited, at Kamloops, have shown due appreciation and approval of the criticisms of their prospectus published in the MINING RECORD last month, by promptly instructing the underwriters in Montreal, who alone were responsible for its preparation, to correct without delay the several misleading and extraordinary statements which appear therein. In this prospectus Mr. Wood, the company's general-manager, temporarily appointed to that position by the provisional Board of Directors—as was also Mr. Willis to the secretaryship—is described, without his sanction having been sought or obtained, as a mining engineer—a distinction to which, we are informed, he has never aspired or laid claim. It is further erroneously stated in the prospectus, as we pointed out, that the company own 9,000 feet of main vein, and that assays by the Kamloops assay office gave values from \$30 to \$274 to the ton. These assays were actually made, but they represented the returns on ore-samples obtained not only from the Python group of properties, but from claims in every direction in the Kamloops camp. As to the publication in the prospectus of extracts from letters written by Mr. W. H. Pegram, manager of the Kamloops branch of the Bank of British Columbia, and by Mr. Gordon, the estimable Mayor of the town, we are given to understand that neither of these gentlemen had any idea of publicly assisting the flotation of the Python Company when penning the commendatory communications having reference to the properties; and upon discovering to what use his letter had been put, Mr. Pegram, we learn, was most annoyed and indignant. We stated last month that Mr. Gordon had a pecuniary interest in one of the claims controlled by the Python Company. Our Kamloops correspondent, however, informs us that this is not the case, but that Mr. Gordon merely held the claim or claims in trust for others. We are very pleased to make the correction in this instance. Meanwhile we have been frankly invited by Mr. Wood, acting as General Manager of the company, to examine the Python properties and to investigate fully into the company's affairs. We hardly deem such a course necessary. As to the affairs of the company as long as the present management is in control, we are assured that matters will be conducted, so far as the Kamloops office is concerned, at least, in an upright and straightforward manner, and we never for one moment desired to convey any other impression. Of the Python properties we already possess all the information we require. On the Python claim, the shaft is at present down 55 feet—we before stated the depth to be 35 feet, which was, however, the depth reached when the prospectus was compiled—at the bottom of which there is a drift of 55 feet. In addition to this there are two other shallow shafts and ten open cuts exposing the vein. This work is obviously of a merely preliminary character, and bears out our previous description of the property, as nothing more than a "tolerably good and promising" prospect. Although the company has withdrawn the misleading prospectus, we are not informed that any reduction is proposed to the abnormally high figure of two million dollars, at which the capitalization was fixed. If a change is not made in this regard it will be a matter for very great regret, as crippling at the outset an enterprise which, if carefully managed and regarded as merely a specu-

lative venture, should, with moderate capitalization, have a very fair chance of succeeding.

It is a remarkable thing, though, as many can testify, common enough, goodness knows, in British Columbia and doubtless in other mining countries, that seemingly honourable men who would not dream of assuming military, medicinal, clerical or even aristocratic titles to which they were not strictly entitled, yet evince not the slightest hesitation in taking upon themselves the style of mining engineers or mine managers; authoritatively and unblushingly figuring as such in prospectuses of mining companies, as having reported on the "rich" and always "promising" properties, which are therein described. Now, Sam Jones, the lawyer's clerk, and the owner of a mineral claim or two, may be to all appearance a very decent, honest fellow, but when he, after a sojourn of a year or so in a mining camp—suddenly blossoms out as a full-blown "M. E." and permits a report to be published in a prospectus with these initials tacked on to his name, then his friends must recognise the fact that Sam Jones is either a consummate and dangerous rogue or else a conceited, ignorant and likewise dangerous fool. The public have no means of discovering the antecedents of Sam Jones—or if they have they rarely put themselves to the trouble to enquire and therefore, Sam Jones' report is accepted—we refer now more particularly to the gullibility of the small investor in Eastern Canada—without question as that of a mining engineer, presumably quite as well qualified as the average mining engineer to pass judgment on the "mine" in question, or what it really amounts to, in assisting the promoter to sell his stock. If, by reason of such representations, stock is subscribed for, both the bogus "M. E." and the promoters of the scheme should, by all that is right and just, be liable to prosecution for obtaining money on false pretenses. Yet, in how many cases is this course followed? We have yet to hear of a single instance. That, however, new companies are being and have recently been floated in British Columbia, and prospectuses issued on the strength of reports written by men having but the merest smattering of mineralogy, and no knowledge whatever of mining or engineering, is well known, for only within the last few months it has been our painful duty to remark on more than one enterprise promoted on these lines. Singularly appropriate here, are the following remarks, delivered in the course of a recent address, on the qualification of mining engineers and managers, before the Institution of Mining and Metallurgy by the President of that Association: "A capable mine manager of to-day requires to be a man of parts. The days when it was considered that an illiterate man, whose whole knowledge consisted of an appreciation of the price at which a level should be driven, ground stoped, or a shaft sunk, coupled with an ability to do the manual work himself as well as, or better than, his men, was the best manager for a mine, have passed away forever, and although we still occasionally here the "practical man" quoted, no one in his senses would employ such a man nowadays in preference to a properly trained manager. A practical man is still required at the head of affairs, but he must have a wide grasp. He must, of course, have a good knowledge of mining as a first consideration, but he equally ought to possess a considerable acquaintance with the treatment of ores, and a fair knowledge of chemistry, so as to be able to in-

investigate the causes of unexpected difficulties in treatment which may present themselves. He should be an accountant, a mechanical engineer, and an electrician, and able, moreover, to handle men and get a fair day's work done for a fair day's pay; I might add that he must be a diplomatist, and more or less of a bush lawyer, in order to deal with those with whom he is brought in contact outside the actual working of the mine; and there may be other qualifications I have not mentioned. Very few men possess all these attributes in perfection; and, perhaps, the most necessary qualification that a manager requires is a knowledge of his weak points and an ability to select capable and reliable men for those posts with the details of which he is least acquainted."

The great error into which, knowingly or unknowingly, the originators of prospectuses, wherein copper properties are described, fall, is in estimating the value of the copper at the New York market price of the refined metal, meanwhile, neglecting to deduct from the assay returns 1.3 per cent. to reduce the wet assay to the dry assay value upon which smelters buy; and, further, forgetting, purposely or not, that copper in ore is never worth more than from six to seven cents per pound—or a difference between eleven to twelve cents on the price of the refined product in New York. For example:

4.5% copper ore contains 90lb Cu@18c.=\$16.20.
Smelters pay for: 4.5%—1.3%=3.2%
=64lb Cu@ $\frac{1}{2}$ /.=\$4.16; or 64lb Cu@7c.=4.48.

One of the great "arguments" adopted by those who champion the cause of the miners in the Slocan and Nelson Divisions in their present "strike" is, that having regard to the profits derived from mining, it is manifestly to the interest of British Columbia that the mine-workers, who are residents of the Province should be more particularly considered than alien shareholders, who have absolutely no stake in the country outside of the stock-holdings in question. Like most of the reasoning adduced by the miners' unions and their supporters, this is based on a fallacy. It presupposes that mines would be operated under any or all conditions. Looking at the matter, however, from a matter of fact standpoint, one is confronted with the question, what are the inducements which lead to the investment, or rather, risking of capital in mining ventures? The answer to this undoubtedly is, the big chances offered by this class of enterprise, beyond all others, of large profit-earning. The capabilities of a mining country as a field for investment can only, from the point of view of the ordinary investor, be judged by the standard of the number and importance of its dividend-paying mines. If these are inconsiderable, and the results as regards returns are unsatisfactory, capital, with natural caution, seeks elsewhere for openings where the opportunities appear to be more favourable. There is no demand for labour unless capital creates it, and consequently any attempt to antagonize capital by unnecessary restrictions or unjust demands has generally a retroactive tendency, necessarily injurious to the community as a whole. Thus the policy adopted by New Zealand Governments of late years, of introducing legislation calculated to benefit the labour-

ing classes, has, by limiting the scope of capital, had a diametrically opposite effect; and not only has enterprise in every direction been sadly curtailed and crippled, but labour there actually now commands a lesser price. Comparing British Columbia with the Transvaal, we find, it is true, that the mining industry in the latter country is seriously hampered with more irksome laws and is further subjected to a very heavy taxation. It may, therefore, be argued that notwithstanding these drawbacks, capital, as represented, at least by the British investor, has in consequence displayed certainly no very marked timidity in engaging in mining enterprises in this field, nor yet when the restrictions were made even more severe, of withdrawing from the country. Of course, the reply to this is that the mining industry of the Rand had been well established on a permanent and profitable basis before the imposition of a heavy taxation on the output of the mines by the Boer Government. In this country, on the other hand, mining is still in the first stages of industrial development, and comparatively few of our mines operated by British capital are yet on the dividend-paying basis; a not inconsiderable proportion of British Columbia properties controlled in London being, unhappily, rather either "wild-cats" or over capitalized. In fact, it is possible, we believe, to count the number of our regular dividend-paying mines owned by either British or American mining companies on the fingers of both hands. Yet it is asserted that the working miner, who suddenly and quite unwarrantably "strikes" because mine-owners refuse to pay him the same wage for eight hours as for ten—is entitled to more consideration than the alien shareholder, who has risked his money, and in the majority of cases, as yet, got nothing in return. The alien shareholder is very likely to come to the conclusion that if that is the opinion of the country they can do without him altogether. In such an event miners' unions would be quite as useless and certainly no more ornamental than the abandoned and rusting mine machinery, whose wheels they had been instrumental in stopping.

Our Slocan correspondent writes:

"The chances of the Slocan maintaining its position at the head of producing districts for 1899 are now almost nil. Production is already away below the corresponding period for '98, whereas in tonnage at least Rossland is over 50 per cent. ahead of its record for last year. With these facts before us and the further knowledge that the Slocan only led by \$200,000 as against \$1,200,000 in '97 the prospects are simply hopeless. Matters have reached such a pass that there has been the greatest difficulty in inducing owners to supply representative samples of their ore even for the Paris Exposition, showing the listless and disheartened condition into which many have sunk."

Surely no further evidence is required to show how disastrous has been the effect of the eight-hour legislation in this section of West Kootenay, for the present year opened under peculiarly encouraging auspices for Slocan and all indications promised a substantially increased production from the Slocan. Meanwhile Rossland—a three dollar camp—is forging rapidly ahead.

It appears more than likely now that nickel mining

may be added to the already long and varied list of the Province's underground industries. It is stated that ore has been discovered near Wild Horse Creek, East Kootenay, which, whilst only running to moderate values in gold and assaying still less in silver, contains a very considerable percentage of nickel, two assays made showing values of \$85 and \$121 to the ton, respectively, in that useful metal. It remains to be proved by further development how far the specimens assayed are represented by the general or deposit, as also to be ascertained whether or not the nickel containing ledge is of large extent. However, early indications seem to be promising.

The Provincial Government has followed a hint given in the recent judgment of the Judicial Committee of the Privy Council in the Bryden vs. Union Colliery Company appeal case, which will probably result in a large measure of exclusion of mongolian labour from underground colliery and other mining employment, without infringing the prerogatives of the Dominion parliament, which alone can, according to the decision, legislate concerning aliens. The new mine labour by-law, issued under the Mines Regulation Act, declares that "no person who has not been employed before the 9th day of August, 1899, shall be employed on work underground, unless he is able to satisfy the Inspector that he can read and understand the mining special rules as provided in the English language." This regulation, as it will be noted, does not trespass on the Dominion's parliamentary prerogative, for it applies to all underground miners, without regard to nationality. It should, however, in effect, exclude almost every Chinaman from underground labour in the mines of British Columbia, as not one in a hundred can read English sufficiently well to understand mining regulations printed in our language. The same necessity of comprehending technical rules drawn up in English, will also exclude many, but not all, Japanese from underground mine labour, for a minority of labouring immigrants from the land of the Mikado fairly soon acquire a tolerable knowledge of English. The new regulation is naturally popular with the white-working community of the Province, desirous as it is of reducing to a minimum Oriental labor opportunities in Pacific Canada. The new rule is of course based on the principle that knowledge of mine regulations is essential to the common safety of underground workers.

It is gratifying to note that at our principal Coast mine, the Dorothea Morton, the putting in force of the eight-hour law has not, as elsewhere, resulted in a "strike." This satisfactory state of affairs may be accounted for by the fact that before the law was introduced the miners at the Dorothea Morton had been accustomed to work eight hours during the winter months, accepting therefor a proportionate decreased wage than they were accustomed to receive during the summer season for a ten-hour day. When, therefore, the law passed the Provincial Legislature, the miners at Shoal Bay merely expressed regret that this restriction had been made, but willingly enough agreed to continue work on the basis of the eight-hour scale of pay. At the Van Anda properties, on the other hand, the management first offered their miners the wage demanded by the Slocan and Nelson Unions of three dollars and a half for an eight-hour

day, and then later attempted to effect a reduction, a strike, of course, resulting. Now, we understand, the Van Anda Company is offering special inducements to miners and their families to settle permanently on the company's townsite, by offering the men plots of ground and houses on easy terms of payment, the amounts being deducted—or that is what it comes to—from the miners' earnings. The arrangement may work satisfactorily, but it hardly commends itself to us, as wise or farseeing, and for very obvious reasons.

Strong pressure is, by all interested in the development of the Similkameen district, being brought to bear on the Provincial Government, with a view to secure the completion of a good waggon road between Hope and Princeton. A centre link of about thirty miles of track there remains to be built at an approximate cost of \$25,000, when with some necessary repairs to the sections of road already constructed near Hope and Princeton, respectively, a good highway of about sixty-five miles would connect the two points. Easy access could then be gained to the Similkameen, Hope being readily reached from the Coast by either the Canadian Pacific Railway or by the route of the Fraser, on the south bank of which the old village of Hope stands. Nearly all traffic now making from the Coast or Vancouver Island to the Similkameen, has to traverse a long rail and waggon road route, being taken by the C.P.R. as far north as Spence's Bridge—more than sixty miles above Hope—then hauled to Princeton over a long and heavy waggon road of 125 miles. The construction of the proposed thirty miles of new road would afford a good market with quick and easy access for the farm produce of the agricultural districts of the Lower Fraser, and shorter by about a hundred and twenty miles than the route usually taken between the Coast and Island cities and the Similkameen district. The renewed demand for the new road, which it is understood that the Provincial Government is inclined to consider favorably, is the result of exceptionally promising present conditions in the Similkameen, where recent development work has brought to light large and rich copper deposits. This is consequently encouraging a large influx of miners and prospectors. The Vancouver Board of Trade very naturally supports strongly the Similkameen road proposal, in expectation that it will, if carried into effect, afford a profitable new opening for the wholesale trade of the Coast.

The Camp McKinney Mines, Ltd., is a Vancouver promotion, concerning whose properties, the Granite and Banner, many boom statements have of late appeared in the Vancouver papers. One of the promoters has, moreover, publicly and with a proper show of virtuous indignation, referred in scathing terms to the Golden Cache fiasco, as having largely deterred Vancouver investors from speculating in legitimate mining ventures, such, for instance, no doubt, as the Camp McKinney Mines, Ltd. Our Camp McKinney correspondent, however, in response to a request for information, does not appear to hold a very high opinion regarding the value, as at present determined, of the properties of the Camp McKinney Mines, Ltd., i.e., the Granite and Banner claims, the much-heralded production of a couple of gold bricks therefrom, worth each a few hundred dollars,

notwithstanding. We shall, perhaps, have more to say respecting this company later. Meanwhile, the *Midway Advance* somewhat mildly comments as follows:

"A very glowing account appeared in the *Vancouver World* recently, with regard to the standing and operations of the Camp McKinney Mines, Ltd., a company operating in Camp McKinney and owning the claims known as the Granite and Banner. The account was forwarded the *World* by a Mr. Banfield, who is evidently interested in the company, and his statements, especially as regards the amount of ore in sight in the claims and the amount of ore on the dumps are very generally questioned by those living in the camp, who should be somewhat conversant with the conditions prevailing there, and at the different properties therein. That there are \$200,000 worth of ore in sight in the claims and 2,000 tons of ore on the dumps, is said to be misleading, therefore, the only conclusion that can be come to, is that Mr. Banfield spoke rather from hearsay than from personal observation." It is questionable whether Mr. Banfield could accurately estimate the size of a dump in any case.

Another smelter of large capacity, it is stated, is shortly to be built in the Boundary Creek district, under the direction of Mr. Paul Johnson, a well-known metallurgist who erstwhile so successfully operated the Hall Mines' furnaces at Nelson. According to the most careful estimates, the aggregate production of the Boundary Creek mines for some time will, after the completion of the new Columbia & Western Railway to Midway, not exceed two hundred and fifty tons per diem. As the daily capacity of the Graves smelter now building on the North Fork of Kettle River will not be less than five hundred tons, much further development must necessarily take place in this district before two large smelters can be operated to their full capacity. The establishment, however, at this juncture of a second smelter in the camp, as has been recently decided, is planned more with the view of treating on the spot and at actual cost the ore from one mine than for custom smelting operation, which is regarded as a matter of only secondary importance.

A most encouraging feature in Rossland at present is the renewal of interest in properties situated in what is known as the South Belt. This has been brought about by the attention directed towards the Homestake. This property since it was turned over to an assessable company has been mined and managed in a business-like manner under proper expert direction, with very satisfactory results. It is impossible to say whether it is a mine or not, but the consulting engineer went very far in his statements to the shareholders. And these statements carried weight because Mr. Howe cannot afford to pledge his reputation lightly. Since the Homestake came to the front the facts regarding the South Belt have been canvassed over again, and it has emerged from the largely undeserved cloud under which it has lain ever since the Crown Point closed down. It is now remembered that a great number of properties in this section had meritorious surface showings and ore of a very good grade. The South Belt contains many prospects well worthy of development, and capital is again turning its head towards them. This section of

the Rossland district suffered the most from the remorseless wild-catting of 1896, and not having any productive mine to carry it on was almost wholly abandoned when the boom burst. But now, if the Homestake justifies the expectations formed of it, capital will again take hold of the South Belt to mine in a legitimate way.

Ore is actually being mined and treated in Rossland at a cost of \$7.75 per ton, under special circumstances certainly, but not such as bar an extension of this remarkable economy. The ore in question is taken from the surface of the Evening Star, where there is a large quantity of it that can be broken very cheaply. The ore averaged about \$11, and the cost of extraction, including mining, is \$7.75, which leaves a good profit on \$11 rock. This surface stuff gives place to cleaner ore, which goes much higher in the lower levels. But the fact that it is being broken and treated profitably shows what can be done.

It is probable that the net profits to the Rossland mining companies will be greater this year than last in about the same proportion as the tonnage is greater; the treatment of the lower grade ore being compensated by economies in handling and treatment. The tonnage should show an increase of about 30 per cent. But the gross output of gold and copper will not show any such increase. The mines are now producing at the rate of over 200,000 tons per annum, but if the total output reaches 150,000 tons it will not exceed that figure much, unless the Columbia and Kootenav enters the list, of which there is not much likelihood. There is, however, we understand, a probability that the No. 1 and Nickel Plate will ere long become producers.

The bulls in London are playing Le Roi for a dividend of 25 per cent., on what grounds it is difficult to conjecture. Such a dividend represents a net monthly profit of \$100,000 roughly. That means 10,000 tons a month and \$10 on each ton. The Le Roi has not averaged 10,000 tons a month this year, nor has it averaged \$10 a ton profit, if mining, freight, treatment, dead work, depreciation and expenses of management are all charged to current account, as they ought to be. A dividend of 12 per cent. is about all shareholders have a right to expect; if they get 15 per cent. they will be very lucky. At the same time it is inadequacy of hoisting apparatus and want of room that prevents the mine from higher earnings at present; it is not lack of ore. And shareholders, even if they bought their stock at the inflated prices ruling before the settlement should not abandon their investment. When the new working shaft is down and the new hoist running there will be a different story to tell.

One of the London dailies rather cynically suggests, apropos of Mr. Whitaker Wright, the well-known promoter of the London and Globe Finance Company and the British America Corporation, that he seems to "keep a staff of tame Robinson Crusoes to go about exploring the Pacific and other remote oceans, with a view to the discovery of well developed mines on uninhabited islands." This comment does not, however, concern the British Columbia operations of Mr. Whitaker Wright, which compare very favorably with a number of his Australian ventures.

THE MINES OF BOUNDARY CREEK—NO. IV.

THE "MOTHER LODE."

(BY FREDERIC KEEFER, M.E.)

THE Mother Lode claim was located on May 28th, 1891, and is situated in "Deadwood Camp," about 800 feet above and three miles northwesterly from Anaconda and Greenwood, B.C., in the Boundary

self and Messrs. F. L. Underwood and James F. Tichenor, all of New York City.

In September of that year systematic work was begun on the property under the direction of the writer, and it has been carried on uninterruptedly ever since. Subsequently the owners acquired the Primrose, Tenbrock and Offspring claims, all adjoining the Mother Lode.



The Mother Lode Hill in the Fall of 1896.

Creek district. The surrounding hills are but thinly timbered, and the copper-stained bluff or "blowout,"

GEOLOGICAL AND MINERAL FEATURES.

In a way, the Mother Lode is representative of most of the large gold-copper ledges of Boundary Creek. The croppings are in places soft oxides of iron from decomposition of ore bearing rock, and in others unaltered magnetic iron oxides very solid and compact, carrying copper pyrites and gold, such as the "blow-out" mentioned above, and in other instances the



First Cabins.

about the centre of the claim, can be seen from far away, so that the prospectors had easy work in making this location.

There was no work done on the claim beyond the necessary assessments, until in 1896, when the property was bonded by Col. John Weir, representing him-



Starting the Shaft.



Building Gallows Frame.

croppings are calcite with copper pyrites, iron pyrites, more or less quartzose material, and also carrying

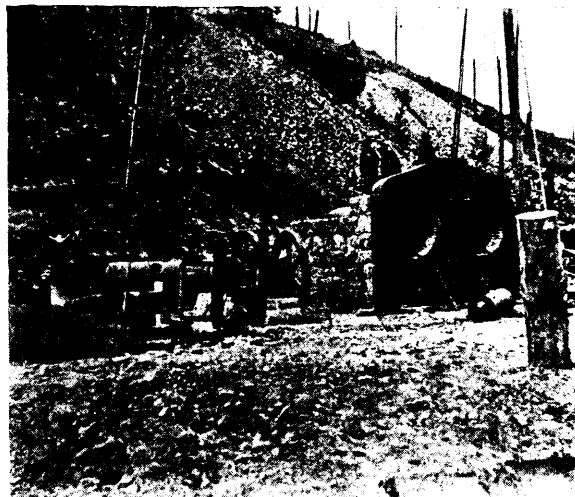


Commencing Erection of Plant.

gold. The extent of the lode is suprisingly great, its length being some 1,100 feet to where it disappears



Gallows Frame and Hoist in Position.



Setting Boilers.

under the heavy drift, and its width being as much as 200 feet. The foot wall is for the most part limestone



Men's House—Nearing Completion.

and the hanging wall an altered diabasic rock. Sometimes there is a sharp demarkation between the lode



View—Sorting Ore.

and its walls, but in other instances the boundary is obscure. The dip is easterly about 30 degrees from a vertical line, and the trend of the lead is north and south, the croppings assuming a somewhat crescent

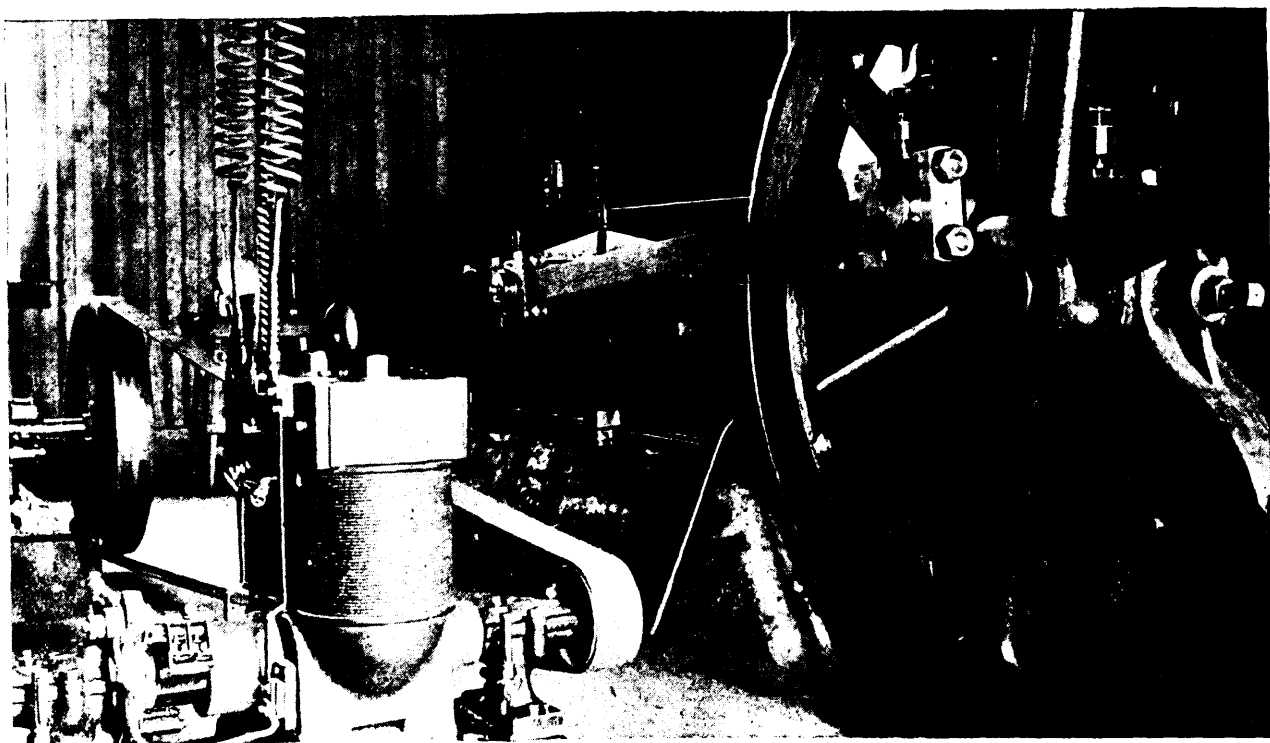
The ores themselves (so far as found) may be classed into three general groups: (1) A calcite carrying copper pyrites and iron pyrites, these sulphides sometimes being massive, and sometimes scattered in



Building Dormitory.

shape. It would be asking too much of Nature to want all this vast lode to be pay ore, but as will be seen below, much of it undoubtedly is so.

small crystals throughout the rock. Some quartzite is often present also. (2) A silicate of lime, iron, magnesia and alumina, carrying both copper and iron



Engine Room.

pyrites, massive or scattered, and often also carrying quartz, or garnets, or serpentine, or often all three. Now and then a small amount of zinc blende occurs in this class of ore. (3) An excessively hard mag-

Nevertheless, the presence of iron pyrites seems to be a requisite for gold, for samples of ore consisting of solid copper pyrites with no iron pyrites seldom have much gold. For example, a sample assaying 15 per



General View of Works.

netic oxide of iron, with silica and copper pyrites. Not often much iron pyrites.

All these ores carry gold, and the calcitic and silicious varieties also carry small amounts of silver—about one to two ounces. There has recently been found near the lime wall on the 200 ft. level, ore with calcite and gangue carrying galena and zinc blende, and assaying well in silver, but its quantity is not sufficient to include it as a class by itself. These varieties of ore of course blend into one another more or less, but the general classification given will hold good. The following partial analyses further illustrates the differences in the ores:

	(1)	(2)	(3)
	Cal- cites.	Sili- cates.	Magne- tites.
Silica.....	20.10	44.23	27.33
Iron Oxides...	12.00	16.83	51.12
Alumina	1.31	7.46	
Calcium and Magnesium Oxides.....	34.00	16.03	10.26

From the composition of the ores it should not be difficult to secure good smelting mixes from the products of the mine, with little or possibly no additions of foreign fluxes.

As a rule, when copper increases in the ore, the gold also increases, though not in a given ratio.

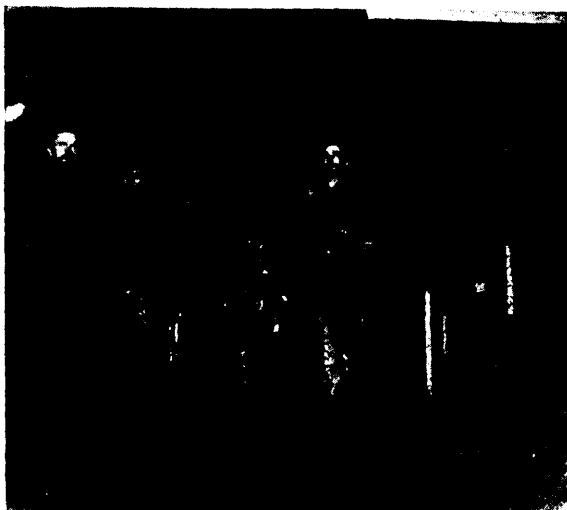
cent. copper had \$16.00 gold, while another exceptionally rich mass of chalcopryite with no iron pyrites carried 28 per cent. copper, and but \$1.50 gold.

PRELIMINARY WORK.

The first work done under the bond consisted of surface cuts, made in order to locate outcrop as near as possible. This done, a tunnel was run so as to cross-cut the ore body at a point about 650 feet from the southern end line of Mother Lode and 100 feet below top of hill directly above. This tunnel extended 42 feet in limestone and 205 feet in ore body. From about the centre of tunnel an incline winze was sunk to a depth of 100 feet, or 200 below the hill top, and a further cross-cut 87 feet long was run from its foot.

Influx of water stopped hand work at this point. The ore on the surface over the tunnel was all of

very low grade, while that in tunnel was markedly better, and the ore in bottom of winze and lower cross-cut was such that the most of it could be profitably treated, these results showing decided improvement in ore as depth was attained. The following table shows



View in Station 200-foot Level.

in a general way the ore found in lower cross-cut :

Part of Cross-cut.	Mean and General Samples.	Mean of Rough Sorted Ores
0 to 12 feet.....	\$12 00 to \$18 50	\$20 00 to \$30 00
12 " 18 "	12 00	15 00 " 18 00
18 " 56 "	8 50	13 00 " 17 00
56 " 76 "	2 00 " 5 00	Not tried.
76 " 87 " next h. wall	13 00	22 50

PERMANENT DEVELOPMENT.

This preliminary work having been attended by good results, it was decided by the owners to open up the mine on a scale commensurate with its promise.

In March, 1898, the interests of the individual owners were taken over by a new organization, the British Columbia Copper Company, Limited, of New York. The capital was placed at \$1,000,000 in \$5 shares, the principal stockholders being the original owners. From the Jas. Cooper Manufacturing Co., of Montreal, the following plant was purchased, and shipped to the mines via Marcus, Wash.: Two 60 h.p. boilers, with feed water heater, pumps, etc., one 10 drill Ingersoll-Sergeant air compressor, with complement of machine drills, hose, etc., station, and sinking pumps, and pump for water supply, an Edison electric light plant, a Lidgewood hoisting engine, 30 inch drum, a half mile or more of pipes, and all cars, buckets, rails, machine and hand tools, etc., which go to make up a complete plant. The total weight of this machinery was about 85 tons, and it was somewhat of a task to haul it 65 miles to the mine in waggons, but by the end of September the plant was set up, buildings erected and all ready to start. Since that time the machinery has been run without interruption. A platform for the shaft and shops was cut out of the hill, about 60 feet above flat beneath, where the engine houses were built; and the shaft was started near the contact of the ore body and hanging wall. The shaft is a two compartment vertical one, each compartment being $4\frac{1}{2} \times 5$ feet in the clear,

and it is timbered throughout with 12 x 12 sawed timbers. One side is used at present for hoisting, and the other for a ladderway. Platforms are placed every 15 feet in ladderway and inclined ladders are used, making the travelling in the shaft both safe and easy. The gallows frame is arranged so as to dump the ore automatically, thus saving labor. At about 150 feet deep the ore became of high enough grade to allow of

its being economically treated, and from this point to the bottom the ore continues good. A station was cut out of the north side of shaft on 200-foot level, 18 x 20 by 15 high, and a somewhat smaller one on the south side. All this work was in ore. At the present time some 600 feet of drift and crosscut has been run on the 200-foot level, and a large body of ore shown to exist. Its dimensions cannot be given closely, as the work has not reached limits of ore body, but enough has been accomplished to show that the ore body is of great extent, and that as a whole it is of better quality than that existing in the old 87-foot crosscut described above. An auxiliary hoisting engine has recently been purchased, and the shaft is now being extended to the 300-foot level, while work is being pushed on the 200-foot level, to connect the winze and crosscut with the new works. And it is hoped that by the time the railway is completed to Boundary Creek, the mine will be in a



Station at 200-foot Level.

position to become a modest shipper of ore. The railway spur line to the mine is well under way, about two miles of the grade having been completed.

CONCENTRATION OF THE ORES.

A subject of general interest in connection with this class of ores is the possibility of concentrating them by water, for with so large a proportion of low grade ore, an economic method of concentration is of the first importance. The writer has made a great number of tests in this line, and regards the following proposi-

tions as having been demonstrated, at least so far as Mother Lode ore is concerned.

1. The magnetic oxides cannot be concentrated except by magnetic separators, followed by water concentration. With this plan the concentration is very complete. No trials have been made with any of the magnetic concentrators now on the market.

2. The calcite and silicious ores can be concentrated; the first more completely than the second.



Some of the "Boys."

3. The proportion of gold saved in the concentrates will be close to, if not exceeding, 95 per cent. of all gold present in ore.

4. The proportion of copper saved will vary from 60 to 80 per cent. according to the degree in which formation of slimes can be obviated, and the degree in which those formed can be concentrated.

5. The ratio of concentration will average about three tons into one.

The following examples illustrate the point in question. Of course only ores of lower grade were taken; it not being useful to experiment with high grade ones. In estimating the value of ores 1.3 per cent. of copper is deducted for loss in smelting, and the remainder multiplied by the present market price of copper, which at 17 cents is \$3.40 per unit.

SAMPLE OF ORE FROM BOTTOM 200-FOOT SHAFT.

Assay of	Gold.	Copper.	Value.
Ore.....	\$ 3.00	\$2.50	\$ 7.08
Concentrates.....	12.00	6.30	29.00
Slimes.....	.50	1.81	2.23
Tailings.....	.25	1.18	.25

Percentage of Concentrates.....	23
" " Slimes.....	20
" " Tailings.....	57
" " Gold saved in Concentrates.....	92
" " Copper saved in Concentrates.....	60
" " Copper lost in Slimes.....	14.5

SAMPLE ORE FROM SOUTH DRIFT 200 FOOT LEVEL.

Assay of	Gold.	Copper.	Value.
Ore.....	\$ 3.30	\$2.80	\$ 8.40
Concentrates.....	12.50	6.81	31.23
Slimes.....	.10	2.59	4.48
Tailings.....	.50	1.06	.50

Percentage of Concentrates.....	24
" " Slimes.....	23.4
" " Tailings.....	52.6
" " Gold saved in Concentrates.....	91
" " Copper saved in Concentrates.....	58
" " Copper lost in Slimes.....	22

In several other instances the saving of gold has been as high as 98 per cent. of all present. In the above examples with proper machinery for reducing the percent of slimes and with slime tables, the amount of copper lost in slimes would be greatly reduced.

The officers of the Company are H. L. Horton, President; James F. Tichenor, Vice-President; C. E. Laidlaw, Treasurer; Chas. E. Morris, Secretary and Frederic Keefer, Manager. The Mine Superintendent is Henry Johns. General offices, 31 Nassau St., New York; local office, Anaconda, B.C.



General Office and Manager's Residence, Anaconda, B.C.

WAR EAGLE NEW HOIST.

BY H. F. EVANS, ROSSLAND.

SITUATED on a bench of Red Mountain, north and about 300 feet above the lower workings, is a curiously shaped structure looking not unlike a huge lighthouse tower of modern design. The flag of Her Majesty's empire flies from a staff planted on the apex of this structure and the entire cluster of buildings with its unique architecture scarcely betrays the pur-

beneath. This wondrous embodiment of architectural skill pertaining to an age very utilitarian is not even a pyramid, though pyramidal it is in outline at least. To be frank, this curiously densed edifice is the War Eagle's new hoist, and it superimposes a great shaft between 600 and 700 feet deep, which may yet be deepened to 2,700 feet.

This structure encloses most of the hoisting and other plant and it is 800 feet above the City of Rossland, or rather the flat on which the city is built. The



View of War Eagle Hoist from the Town.

pose for which it is used. One may, perhaps, be reminded of the semaphoric contrivances of the Hellenes on the mountain tops and of the legend that "Troy has fallen," but sky-high as this many-phased structure is its work is not intended for any astronomical purpose, for it is not an observatory, nor is it a meteorological station. Its engineer is not exploring for lost or undiscovered planets, but strange as it may seem his investigations are directed into the earth and rock

outline may be described as a steel gallows frame 100 feet vertical height from the collar of the shaft to the centre of the sphere. The skip has a capacity of three tons to the trip and it runs and dumps automatically. It was this skip that recently broke away from the control of the engineer in charge, and fell a distance of 625 feet to the bottom of the shaft and killed four of the five men who were in the skip at the time. The accident occurred because a nut became detached and

a bolt slipped out rendering the skip unmanageable.

The grunty is so arranged that the material dumped can be discharged either into a bin for direct shipments or into a Gates rotary crusher. The hoist building is constructed of corrugated iron, painted a dark red, and contains besides the hoisting plant an Ingersoll Sergeant duplicate air compressor with a capacity to run 40 drills and two three-phase alternating current synchronosis motors, each of 300 k.w. capacity at a potential of 2,300 volts. The electricity which is used to

to twenty $1\frac{1}{2}$ -in. cotton ropes to run an air compressor $24\frac{1}{4}$ in. in diameter, 48-in. stroke, 20-ton fly-wheel, with a capacity to compress 2,400 cubic feet free air to 80 lbs. pressure per minute.

The train which runs from the ore bin near the hoist a distance 1,200 feet down the south-east face of Red Mountain to the bunkers at the side of the C. P. R. track, was constructed by the Canadian Pacific Railway Co. construction department, and this train is now running notwithstanding many predictions that it



PHOTO BY CARPENTER & CO. ROSSLAND B. C.

Nearer View of the War Eagle Hoist, 800 feet above the City of Rossland.

run the motors is furnished from power developed at Bonnington Falls, on the Kootenay River, 31 miles from Rossland. The hoist motor has an equivalent of 300 h. p. and a capacity to raise 1,000 tons per day from 1,500 feet in depth, or 16,000 lbs. at 750 feet per minute with the motor speed of 300 revolutions per minute. This motor can perform the work of hoisting if necessary from a depth of 2,700 feet.

The other motor is arranged for rope transmission

would never work. I had the pleasure, on the evening of June 14, while standing at a convenient point, of seeing the tram car slowly descending the trestle work which runs from bunkers to ore bins. At the same time shipments of ore were being made from the new shaft on the Centre Star to the group of six ore bins belonging to the Centre Star Co., each working being entirely independent but carrying to points on the C.P.R. railway track within 200 feet of each other.

On the War Eagle tram there are two tracks wholly independent of each other. There is also telephone communication and there is an arrangement for a top cable.

On the night of June 14 all the small cars containing ore were run off to Trail and since then the narrow guage has given place to the standard guage, and the Canadian Pacific Railway will handle all the ore shipped from the two great producers, viz. the War Eagle and the Centre Star, which, though under the joint management of J. B. Hastings, as I have already mentioned, ship their ore independently of each other and from different ore bins as well as different mines, but both ship their ore to the Trail smelter over the C. P. R.

The master mind which has impressed itself so forcibly on the south-east face of Red Mountain is that of John B. Hastings, general manager of the War Eagle company, and a mining engineer of the first-class.

These facilities and their arrangement are a proof of the skill and design of the author, and henceforth the Rossland Red Mountain has taken another step in advance that it is to be hoped will be maintained for a long time to come.

The accompanying illustration shows the buildings, etc., of the different producers on Red Mountain.

MINING MEN OF THE PROVINCE.

WITH very great regret we have to chronicle the departure this month of Mr. J. D. Kendall for England, after a stay in this country of nearly three years, as the resident partner of the well-known engineering firm of Bewicke, Moreing & Co. Mr. Kendall, whose great ability and eminence as a mining engineer is well recognized by members of his profession and the public generally, has examined and reported upon most of the big mines of British Columbia, and many of the better class mining promotions owe their success largely to him. His influence for good in discountenancing "boom" or "wild-cat" schemes has been very great, and his return to England is a very serious loss to legitimate mining in the Province.

A DESCRIPTION OF THE POTHOOK MINE, KAMLOOPS CAMP, B.C.

(By John Redman, Kamloops, B.C.)

THE development of the Pothook Mine is being watched with interest by mining men throughout the Province. The property, however, will attract still further attention when its leading features are better known, and as the property possesses characteristics dissimilar to those possessed by any developed or partly developed mineral claim in B.C., a description of these characteristics and of the development of the property will perhaps repay perusal.

The group of claims composing the Pothook property is a large one, and is made up of five full claims—four claims varying from 33 to 45 acres in size and five fractions located during survey. The whole of the ground comprises an area of 425 acres. The property is situated on the plateau at the foot of the west slope of Sugar Loaf Mountain, forming the western extension of the Coal Hill camp. The chief claims were located in September, 1896, during the excitement following the first discovery of heavily copper-stained rock on Coal Hill. Men were engaged for about a year cross-cutting and sinking on these big showings of copper-stained rock, and many big pieces of native copper were discovered, to say nothing of the stringers of copper glance and zornite. The work meanwhile was sufficient to demonstrate that considerable depth was needed to prove the value of these showings, but that, nevertheless, the chances were most



MR. J. D. KENDALL.

favourable for the investment of capital, in the making of more than one big mine. In November, 1897, the claims now forming the Pothook group were taken up under a working bond by Mr. H. Croft of Victoria, and systematic development work was commenced under the direction of Mr. Ashley. Extensive surface work, in the form of a series of big crosscuts and a few trial shafts, was first done to supplement the work carried on by the original owners. This proved the presence of a very large vein, composed of a rather soft schistone veinstuff, resembling chiefly a very much altered diorite, but contain-

ing less silica and some talc, lying between a foot-wall of a fine granitoid rock and a hanging-wall of diorite. The vein stuff was heavily copper-stained and was interspersed irregularly with native copper and copper glance. This series of cross-cuts aggregate in length 560 feet, showing up the vein for a distance of over 5,000 feet with a width of over 350 feet. A double compartment shaft was commenced on the Pothook claim and sinking and cross-cutting has progressed continuously since, with the exception of a short closing down this spring for the erection of a new shaft-house and power-hoisting gear. A horse-winze was installed in May, 1898, and in the fall of that year the property passed into the hands of the Scottish Copper Mines Syndicate of B.C., Ltd. Liability, of which Mr. Croft is the local director.

The mine buildings which have been erected as occasional required now consist of the shaft-house, 36x40; blacksmith's shop, 16x24; cook-house, 20x28; bunk-house, 16x32; manager's office, 18x20; cottage, 16x24; with large stables and barn, power-house, root-houses, etc. They are plain, substantial frame buildings, the cook-house and bunk house being large, airy, comfortable places. Mr. Ashby believes in looking after the creature comforts of his men, and is deservedly popular; while he in turn says that his men are as good as can be found in the Province. Mr. Ashby's close attention to their well-being creates a responsive willingness and interest on the part of the miners that make matters work smoothly and attains the highest efficiency and economy for the company. In the shaft-house is a six

h.p. gasoline hoisting engine, and a fan for ventilation which draws up the air from the levels through a 10-inch pipe of galvanized iron. The shaft is a double compartment one, each compartment is 4½x5, inside measurement. It is well-timbered all the way, one compartment being used for hoisting and the other as the downcast air-shaft and ladder-way; the ladders are inclined with landings every twenty feet. This shaft is now down 330 feet, and four levels have been driven from it, cross-cutting the vein. It is now possible to study the character of this immense vein. The vein-stuff is apparently in very much altered or imperfect diorite. It is almost amorphous in character, very soft and very easy to work, and at a depth of 330 feet it is no harder. Even at this depth it is evidently altered by decomposition, due to infiltration of water. This vein appears to be the channel by which the water finds its way to the drainage level of Cherry Creek and Kamloops Lake. A good proportion of the water in the workings gets away through the vein, and very little is lifted. Under these conditions of a

soft, easily decomposed vein material, the continuous water action and the certain leaching out of some of the copper contents, it is evident that the full values will not be realized until the drainage level is passed, which means a depth of over 500 feet. Meanwhile there is a notable improvement in values and extent of ore, as evidenced by comparison of the lower with the upper level. The first cross-cut the A level was commenced at a depth of 80 feet, this was driven 39 feet to the south and 24 feet to the north. The whole 60 feet carried a fine distribution of native copper, averaging from 1 to 1.5 per cent., with an irregular mass of 3 feet of glance, yielding all through 18 per cent. copper. A picked ton of this sent to the Kaslo sampling works yielded 30 per cent. copper. The B level was commenced at a depth of 150 feet and has been driven 243 feet to the south and 214 feet to the north, the showings in this cross-cut are a great improvement on the A level, and the vein assumes the character of a more regularly banded mineralized zone. The native copper occurs rather unevenly distributed all the way in the south cross-cut and for 100 feet



WINZE IN POTHOOK MINE, KAMLOOPS.

from the shaft in the north cross-cut, along with a little glance. In the south cross-cut a 3 foot chute reticulated with veins of bornite was met 60 feet from the shaft, and a little further a 4-foot band, carrying 3 per cent. native copper, then native copper in varying quantities for 100 feet, when a band of quartzite of considerable width was met, 3 feet of which carried copper pyrites averaging 5.8 per cent. in copper and \$3.60 values in gold and silver. At 212 feet a rich band of native copper was met, and

the change when this was gone through indicates that the vein was passed through. This last band was 17 feet wide, and the native copper was very uniform throughout. A sample taken across the first foot yielded 3.25 per cent. of copper sample from the last foot containing also some finely distributed copper-glance, which assayed 7 per cent. copper, and a sample taken all across the 17 feet assayed 4.55 per cent. in copper and \$3 in gold and silver. A drift was made along the north side of this band, and samples taken from the vein-stuff as it came out gave the same values as the first assay over a distance of 60 feet. A second-cross-cut was then made and in addition to the native copper an irregular mass of several feet of bornite was encountered. This occurrence of a large band carrying good values in native copper and bornite was very gratifying to the management and the company. The drift of the vein and these bands is to the south, that is, away from the shaft, and the C level, at a depth of 250 feet, is not yet sufficiently advanced to meet this 17-foot band, but the showing for

the 230 feet attained is an improvement on the B level. Twenty-five feet from the shaft a band of 4 feet carrying copper pyrites was met; at 80 feet a 12-foot band carrying veins of bornite, native copper and some fine copper-glance; at 227 feet the same quartzite that was noticed on the B level was met and was much wider. At the time of writing the face is still in the quartzite, which carries a good amount of copper pyrites, 27 feet of this assaying 4 per cent. of copper, with \$3.50 in gold and silver.

The D level, at a depth of 325 feet, is only in 80 feet from the shaft, and so far carries the same characteristics as the upper ones. A considerable amount of native copper has been met.

On the dump at the mine there is now 700 to 800 tons of low-grade ore, carrying 1.5 to 2 per cent. native copper, with a small proportion of copper pyrites and copper-glance, and carrying values of \$3 per ton in gold and silver and 25 to 30 tons of picked high-grade ore. The low-grade ore is practically a run of mine ore, chiefly from the upper levels. The material from the lower levels is considerably higher in copper than the average of the dump, but taking this average for our basis of calculation, we shall see that this immense mass of low-grade ore is sufficiently valuable to yield a good profit when concentrated. Experiments with samples of the ore show that it will concentrate perfectly and cheaply, and the gold and silver values are saved with the concentrates. Its concentrating ratio is ten to one or a little over. This will yield concentrates, carrying about 20 per cent. copper, worth at smelter price \$40 per ton, possibly more, and \$30 per ton gold and silver values. The remarkable ease with which this soft ore can be mined and crushed reduces the costs of mining and concentrating to a very low figure. It is estimated that \$2.50 per ton will cover all mining expenses; but allowing \$3, each ton of concentrates will cost \$30 per ton. Freight and smelter treatment costs at present \$12.50 per ton, leaving a balance of \$27.50 profit per ton of concentrates.

No stoping has been done on the richer bands, and no allowance has been made for the irregular tentacular bodies of high-grade ore which are evidently distributed through the mass of the vein. When ore is being taken out in quantity from richer bands and the high-grade ore accounted for, the value of the run of mine ore will be at least doubled. The low-grade ore bodies are now shown to have sufficient size to warrant the erection of a larger plant and the establishment of concentration works on a large scale. As soon as this is accomplished the Pothook should take rank among the mines working large bodies of low-grade ore, which, not infrequently, pay very handsome dividends.

A complete new plant for the mine is now ordered and is expected to be in position by October. This plant will consist of a 50 horse-power hoisting engine, a 60 horse-power air-compressor and five machine drills. When this plant is in place, the staff of men will be largely increased and sinking and cross-cutting at lower levels will proceed more rapidly. A tramway route to the selected concentrator site adjoining the railway track and the Thompson River has been surveyed, and the grade is easy and regular. The distance is two and one-half miles, and the tramway will be of the gravity type—inexpensive to construct. It is expected to complete the concentration works by next spring, and by that time there should

be a large supply of ore at the mine, and a large amount blocked out below ground.

A remarkable resemblance of the Pothook vein to some of the native copper deposits of Lake Superior will be noticed, but I think this is the first deposit of its kind to be developed in British Columbia.

In conclusion I desire to add a word of praise in respect to the sound business-like policy pursued by the management of the Pothook mine. All the money spent has been spent as far as possible in the underground development, on buildings and other accessories to development, these being added only as required. Now that the future of the property is more or less proved, the question of tramways and treatment can be advantageously considered. The system of developing a property before equipping it is not so general as it should be, unfortunately for Kamloops camp and possibly others. Some engineers are so full of schemes for building roads, tramways and locating in possible smelter sites, that mine development is often neglected; and a good property with facilities for treating and handling ore is closed down for lack of funds before the ore is even blocked out. In the Pothook we have a good example of "how to do it properly," and the manner in which the mine has been systematically developed reflects great credit on the business capacity of Mr. Ashby, the superintendent of the mine, and of Mr. Croft, the company's resident director. Meanwhile an earnest effort is being made in Kamloops at the present time to conduct mining enterprise in this camp on a more business-like basis—a consummation devoutly to be wished.

THE INCORPORATED CHAMBER OF MINES.

(From Our London Correspondent).

THE celebration of the foundation of the Incorporated Chamber of Mines of London on the 24th ult. afforded an excellent opportunity to a number of prominent men representing the Colonies to testify to the good work which can be achieved by such bodies. In a previous letter I sent you a long account of an interview between your representative and the energetic Secretary, Mr. E. Jerome Dyer, in which the *raison d'être* of the Institution was fully dealt with, and it is therefore not necessary to travel over ground already covered. Suffice it to say that during the first year of its existence as the "Incorporated London Chamber of Mines," it has fully justified its existence by arranging all the details in connection with the mining section of that successful combination of business and pleasure "The Greater Britain" Exhibition, which is now drawing thousands of people daily to Earls' Court, to which I referred very fully in my last letter. The good work would alone entitle the Chamber to the thanks of all who believe in the future of the British Empire. But as its chief proposal is the obtaining from official sources, and the distribution of information regarding mining in all parts of the world, it is possible that it may soon claim our good will for achieving an even bigger task than the establishment of the Mining Courts at Earls' Court, heavy as was the work in connection with that very laudable effort to propagate that healthy spirit of Imperialism which has been so characteristic of the closing years of the century. To show you how thoroughly representative of the British Empire was the gathering, I may mention that among those present were the Earl of Warwick; Sir J. Salamons, Agent-General for New South Wales; Sir Horace Tozer, Agent-General for Queensland; Sir David Tennant, Agent-General for Cape Colony; Hon. E. H. Wittenoom, Agent-General for West Australia; Sir Walter Place, Agent-General for Natal; Mr. C. A. Duff Miller, Agent-General for New Brunswick; Mr. J. Howard, Agent-General for Nova Scotia; Mr. J. H. Turner, Ex-Premier of British Columbia; Mr. John Hays Hammond; Mr. R. L. Jack, Government Geologist for Queensland; Sir Robert Herbert; Sir Thomas Sutherland, M.P.; Mr. Henniker Heaton, M.P.; Mr. Albert Sandeman, President London Chamber of Commerce; Mr. J. Lowles, M.P., and many members of the Stock Exchange, financiers and mining men connected with colonial mining

from the Klondike to South Australia. Mr. W. Walker, the energetic and courteous Agent-General for British Columbia, was unavoidably absent, and it therefore devolved on Mr. Turner to represent the Pacific Province.

Although Nova Scotia and New Brunswick were represented officially at the banquet I regret to say that the Dominion as a concrete whole was not. This is a mistake on the part of the High Commissioner—a very regrettable mistake. Canada needs every possible assistance at the present moment, and for her chief representative to stand aloof from a celebration which was attended by all the leading officials of the Australasian colonies domiciled in London, shows I think, on the part of the High Commissioner for Canada, a want of tact at a critical juncture.

Upon the usefulness in general of Chambers of Mines we heard a good deal from the different speeches. As I have myself over and over again in previous letters endeavored to emphasize the importance to the various provinces, of the periodical publication of reliable statistics, collected by government officials in the various mining districts of British Columbia, and as my statements have been emphatically endorsed by your new Agent-General, it affords me great pleasure to be able to send you a few opinions of leading men whose words carry weight wherever they may be offered. Probably the most important speech of the evening (looking at the matter from the point of view of the necessity to any mining country of having reliable machinery for the collection and distribution of statistics regarding the industry), was that of Mr. John Hays Hammond, the American mining engineer, who has been so closely allied with Transvaal gold mining. Although owing to the character of the gathering verbatim reports of speeches were considered unnecessary, I am able to furnish you with all the chief points made by this famous mining expert. Mr. Hammond (in whose hands was placed the task of proposing the toast of the Chamber), said that it might strike his audience as being somewhat incongruous, that an American citizen should be called upon to propose a toast so pregnant with ideas of British Imperialism. This, however, might be explained on the hypothesis that the subjects involved were of a most cosmopolitan nature, and that while they recognised in him a patriotic American citizen, they would also recognize in him a staunch advocate of British Imperialism, especially when that Imperialism was based on the supremacy of the Anglo-Saxon race. He would like to say a few words as to the charter of the Incorporated London Chamber of Mines, which charter he preferred to take as read. He had every confidence in saying that its aspirations were most laudable and its aims most comprehensive. His English friends assured him—and he was bound to believe them—that London was the hub of the universe; all roads led to London. Thither came the miner and the promoter to seek capital for the development of mines; also the mining engineer, who came personally to safeguard the interests of the investor—by no means a sinecure. The capitalist was already there—he was the magnet attracting the others. Thus they had in London a remarkable juxtaposition of miner, mining engineer, promoter and capitalist, and he knew no other spot on the face of the globe where they could find such a combination. Therefore, London was pre-eminently the place for an incorporated chamber of mines. It was undoubtedly to the interests of the mining districts of the world and to the people of this great city who invested their money in mines, that they should be in closer touch with each other. If the interests of all concerned in the mining industry were properly represented in London, many grievances would be redressed. Mr. Hammond referred to the good work done by the Witwatersrand Chamber of Mines. In London, he said, one should be able to obtain all the latest and most reliable information regarding the methods of mining and of cognate industries in vogue in other parts of the world. No one country had the monopoly of the best methods. It was indeed by a sort of eclecticism that the best technical results were obtained. Emulation which was fostered by the interchange of ideas, largely by means of information, disseminated by mining bureaus and other allied institutions, is the main spring of technical advice in mining. Nowhere in the world were the good results of this kind of emulation better exemplified than in the Witwatersrand district. There, by means of the local mining bureau, the greatest publicity was given to the results of independent technical experiments and investigations so extensively carried on in that district. A great benefit accrues to the mining industry in this way. Unfortunately these benefits were local in character, but if one could apply the same principle that governed the Witwatersrand Chamber to London, and to make all other chambers of mines tributary thereunto, the greatest possible boon, he thought, would be conferred on the mining industry and co-relatively, on other

industries. He saw in the London institution a germ that could develop into a most important institution.

Sir David Tennant, the Agent-General for Cape Colony; The Hon. E. H. Wintenson, Agent-General for Western Australia; Sir Horace Tozar, Agent-General for Queensland; Sir Robert Herbert; Mr. E. A. Duff Miller, Agent-General for New Brunswick and others dilated upon the importance of such an institution to mining industries generally, but unfortunately I have not space at my command to report these interesting contributions to the evening's output of suggestions, compliments and expressions of opinion regarding the foundation of the London Chamber of Mines. There were, however, two speakers present whose speeches will doubtless interest your readers. The first was that of Mr. H. Seton Karr, M.P., the Chairman of the Chamber who presided, and who has devoted much time to the development of the mineral resources of Greater Britain, and the second was Mr. J. H. Turner, ex-Premier of British Columbia.

Mr. H. Seton Karr, M.P., said that he would like to take the opportunity of again reminding them that the Incorporated London Chamber of Mines had been established to collect and collate mining statistics and official information from all parts of the world, but more particularly from British dependencies, and to bring these together in the Chamber's rooms at 64 Gresham St., London, for the benefit of English investors or for the public from abroad. The Chamber, said Mr. Seton Karr, also publishes valuable mining statistics, and has assisted in promoting a mining exhibition in connection with the Greater Britain Exhibition now being held at Earls' Court. But the great purposes of the Chamber are:—(1) To systematize the industry, both at home and abroad, upon a basis alike fair to buyer and seller, employer and workman; and (2) to secure a proper appreciation of the rights and risks of mine owners on the part of those legislators who frame the laws which govern these interests and responsibilities. The first mentioned task is one that requires organization, circumspection and concord, but the various stages towards realization must be left largely to opportunity. The accomplishment, however, of other great purposes depends absolutely upon one paramount necessity—combination. Until mining companies and those who constitute them realize that this is an essential feature to success in their appeals for just laws; until they understand the value of co-operation and add their weight and influence to an organized combination such as the London Chamber of Mines promises to effect, they cannot hope to secure that attention which a united body, speaking with one unmistakable voice, can command. He commended these views to those present, and earnestly trusted that they would co-operate with himself and the others concerned in the good work of establishing a London Chamber of Mines which, with the affiliation of the various colonial chambers throughout the world, would be an institution of great usefulness and credit to all concerned.

Mr. J. H. Turner, the ex-Premier of British Columbia, made a very important speech, and although it came so late in the evening that unfortunately it did not receive the attention it deserved, and had to be considerably curtailed owing to the festive character of the meeting, I must compliment him upon steering clear of political questions which are now vexing the Province, and instead, confining himself to statements which could only be regarded as of educational value. After apologising for coming to the banquet unprepared for speech making, he said that he had felt very much disappointed at finding that the Dominion appeared to be officially unrepresented at that gathering. He did not presume to represent Canada as his audience understood the term Canada. He could only presume to represent one of its provinces, and perhaps it was even presumption on his part to say that he represented British Columbia, as he was not at that time Premier of the Province, but thought that gathering should not dissolve without a word having been said on behalf of the great province of British Columbia. He could not help asserting his belief that the province of British Columbia was destined to be the most important part of the great Dominion of Canada, the oldest colony of the Empire. And why he said this was owing to its position, its grand climate and its unlimited resources, which have yet to be developed. He said that it stood or will stand at the head of that galaxy of provinces, that glorious consolidation in the north of America which are subject to the British Crown. Dealing with the subject in connection with which they had assembled that evening he said he had been very much gratified to hear the remarks made by Sir Horace Tozar. It seemed to him that those remarks covered the situation most thoroughly. Exactly what was wanted was a representative Chamber of Mines in the great Metropolis which had also been regarded as the financial centre of the mining world. He was speaking for the Province that so far as mining went was a baby, though it was destined, he believed,

to excel both Africa and Australia. Perhaps it would give some idea of the rapid strides which had been made during the last five years, if he pointed out that during that period the produce exported had risen from a few thousand to several million dollars. He was confident that section of the Dominion of Canada was destined to advance by leaps and bounds. He felt sure that there would be in a very few years a satisfactory return for any expenditure that was made in that province. British Columbia was putting in roads and railroads, and the colony had spent more in proportion to its population than any other colony.

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.

THE SLOCAN STAR AND THE MINERS UNION.

TO THE EDITOR:—In your August issue an article, purporting to have been written from the Slocan and signed D. X. Y., gives some "information" that is as far from correct as anything I have yet seen regarding the present labour trouble. I am aware that the management of most journals do not hold themselves responsible for the views or statements of correspondents, but it is evident that your confidence has been abused in this case or you would not have published the article referred to. Please let me set you right. In the first place allow me to state that the very best of feeling exists between Mr. Oscar V. White and Mr. Bryan N. White of the Slocan Star, and the members and officers of the Sandon Miners Union. Any differences which they may have as to the price of labour are not allowed to mar the friendship and good feeling existing. The Ski mine did not close down on the 5th ult., as your correspondent states. The close-down was on the 12th. There was no demonstration of any kind. The statement that 100 men walked up to the Star is a direct fabrication. No one went up to the mine to influence the men. The timber workers are not non-union men. Their names are on the roll at our headquarters and can be seen by anyone curious enough to call and make the request. I might also mention in this connection that it is considered an honor in the Slocan to be a member of the union and no one is ashamed of his allegiance to the order. The statement that the Star is on the "bad books" of the union is a falsehood perpetrated with malice aforethought. There is no such thing as a "bad book" in our union and the Star, least of any, would be likely to find a place there if there were such a thing.

There are other statements equally incorrect and malicious, but a denial is not necessary as they are too crude and barefaced to be entertained by anyone at all acquainted with the circumstances.

Now, sir, I understand that your journal has no political "axe to grind" and that you could have no motive in injuring the union, but I would ask it as a favor that you use a little more discretion in future in dealing with this question which to us is all important. There are many people in B.C. who are conspiring, from purely political motives, to injure the cause of the workmen in this present controversy, and against these we ask you to guard. We want and demand justice and we mistake the objects of your publication if such is denied us.

Yours respectfully,

W. L. HAGLES,
Sec. Sandon Miners Union.

SANDON, B.C.

TO THE EDITOR:—Replying to D. X. Y. in your August number on the subject under the heading of "The Slocan Star and the Miners' Union," it is only fair to explain for his information, that the incident to which I referred as a pleasing one, did not really take place. If D. X. Y. is correct, and I have no reason to doubt what he says, as he has investigated it, and I was not there. I regret that his version of this matter alters the aspect of the incident altogether and justifies his conclusions and not mine. I took it for granted that a statement such as I published was true, and very many regret to know that instead of a pleasing incident it appears to have been an unpleasant episode. I cannot understand how anyone can furnish for publication a statement that was the opposite of the facts. In my own case I read the article, and believing it to be true, wrote the comments which you were kind enough to publish in the July number of the RECORD. So much for what might have been, but which did not really happen.

On the wage question, I however, do not concur in the

views and inferences of D. X. Y. This is a question which is essentially separate from that of the "legal limitation of hours," be this more or less than eight.

I have recently been reading Sydney Buxton's presentation of this subject, as well as his pros and cons on "Trade Option, and an Eight-hour Law for Miners." Mr. Buxton merely presents a summary of the arguments for and against, in order to arrive at a fair conclusion.

According to my investigations the argument in favor of the legal limitations of hours, restricting it to eight hours per day in the case of miners is overwhelmingly in favor of the contention for the limitation, that is to say the right of the legislature to pass such a law if the people demand it and carry it on a referendum is invaluable. Not so, however, the question of the rate of wages. So far I am unable to see that any legislation can be enacted to give a minimum rate in this matter. I am sustained in this position by eminent writers on political economy, many of whom are exceptionally friendly to the workman. Anyone that makes this contention may be charged with being demagogical, but I can honestly disclaim any tendency of that kind.

Yours respectfully,

Rosslund, Aug. 6, 1899.

H. F. E.

THE MONTH'S MINING.

VERNON.

(From Our Own Correspondent.)

WORK is being done on No. 2 tunnel of the Bon Diablo, and some very good assays have been obtained from the ore. It is the intention of the company to ship small quantities to the Trail smelter, the proceeds being applied to further development.

Some splendid ore is being taken out of Bratt & Stump's claim above the Densy property, and the claims of Captain Vidler, the Western Beauty, are showing equally good results. All these claims are situated on the same ledge as the Iron Cap or Rex, whose owners are now in treaty with some Eastern capitalists.

Bonding of the Silver Star claims to an English syndicate for \$30,000 may meanwhile be regarded as encouraging intelligence from this camp.

Good reports come from Camp Hewitt where work is being steadily prosecuted on the Gladstone claim. Here the showing is improving as depth is gained, and it will not be long before cross-cutting will be commenced at the hundred-foot level.

Work on the Silver King is also progressing favorably, and the Canadian-American Gold Mining Co. are to be congratulated upon the energy displayed in the development of their properties in this district.

I also hear of good work being done by Mr. Chambers and his men on the west side of Okanagan lake.

FAIRVIEW.

The trial of the Park Amalgamator at the Oro Fino mine proved eminently satisfactory. During a 15-days run of the stamp-mill, the amalgamator worked easily and well, and positively without a stop due to itself other than the lacing of a belt, and the daily change of blankets on the table; giving no more trouble, and requiring no attention whatever, other than oiling.

The following certificate testifies to its success:

Vancouver, August 18th, 1899.

Mr. L. C. Park:

Dear Sir,—With regard to the assays made at this office, of the feed and tailings taken by you in your experiments with the Park Amalgamator on the Oro Fino ores, I have much pleasure in saying to you, that, in my opinion your machine extracted all the gold that could be obtained from the ore by amalgamation.

Yours faithfully,
(Signed) J. D. KENDALL.

The assays were 24 in number, taken promiscuously by the assayer from a lot of 50. These weighed 175 pounds, and represented hourly sampling during the run of the machine. In every instance the tailings show only traces of gold. This result, combined with the large capacity of the amalgamator, viz., 40 tons per day, simplicity of operation, security from pilfering, facility of adaptation to concentrators by means of hydraulic classifiers, must be such a recommendation as will ensure its general use.

CAMP M'KINNEY.

(From Our Own Correspondent.)

Since my last letter quite a large quantity of machinery has arrived in camp for the principal incorporated companies and

still more will reach here in a few days, every effort being now made for a vigorous prosecution of development work and a thorough test of the more promising properties.

The Old Cariboo Co. made a record clean up last month from their 20-stamp mill and this month is expected to be still better. An additional 10-drill compressor is being put up and ore enough stoped out for a year's run of the mill. Messrs. Jeffray, Cox, Pelatte and G. B. McAuley, directors of the company, spent a couple of days in camp last week and appeared to be well pleased with the outlook of their property.

Professor Montgomery and Mr. Fox, of Fox & Ross of Toronto, also recently spent some ten days in McKinney examining the "Minne-ha-ha" and the "Sailor" group of mines with which they are connected. A very fine boiler and 10-drill compressor are now being set up on the former claim, while on the "Sailor" a 100-foot shaft is being sunk on the vein. This property looks like becoming another "Cariboo," the ore is almost identical and the vein strong and wide, 5 ft., the shaft being down now nearly 60 ft. A fine specimen from this claim has been forwarded to the Paris Exposition, a collection for which has been made from the "Cariboo," "Minne-ha-ha," "Sailor," "Waterloo," "Fontenoy," "Victim," "Old England," "Gold Standard," and other prominent properties.

A fine stamp mill for the "Waterloo" will be in camp in a few days, preparations being now made for putting it in place and Supt. Murphy expects to have the stamps dropping by the latter part of next month, there is always a steam hoist on this claim, and the showing to make it an early dividend payer being promising.

The "Fontenoy" is also furnished with a steam hoist, two shafts are working, one is down about 125 feet, from which level a cross-cut will be run to tap the intersection with the "Waterloo" vein, where a body of rich ore is expected to be found. The work is being carried on under the superintendence of Mr. P. Eagan, who is well pleased with the promising outlook of the property becoming a paying mine.

A good strike was made a few days ago on the "Leviathan" near the "Waterloo" line, this property lies between the "Okanagan" and "Waterloo" and should leave both veins on it. Prospecting has been carried on for the last few months but without meeting with much success but the strike above mentioned.

A 100-ft. shaft is being sunk by contract on the "Kamloops" which lies west of the "Cariboo" and also adjoins the "Minne-ha-ha" and "Sailor" group. It is somewhat early yet to determine the value of this property; its position is undoubtedly good, it is one of the old 1,500 x 600-ft. location.

On the "Night Rambler" which adjoins the "Fontenoy" on the west, the "Waterloo" ledge has been traced and in consequence negotiations have been entered into with Vancouver parties with a view to purchase.

Further east of the "Night Rambler" the "Excelsior," owned by Toronto parties, is making a good showing some four to five men having been engaged sinking shafts the last three or four months in which good ore has been found. Some 2,000 feet east, again, is the "Gold Standard," owned by the Simms Co., of Omaha. A steam hoist is at work and some very rich ore has been struck, the ore body differing with the "Ophir" claim, which immediately adjoins it. These claims connect with the "Snowdon," "Victoria" and "Old England" group of mines, and with more development are likely to become the richest mines in the camp, as the values of the ore run higher. Some very good specimens from these claims were forwarded to the Paris Exposition.

To the west of Camp McKinney and in the granite belt are situated the "Granite" and "Banner" mines, owned by an incorporated company in Vancouver. Some time since your correspondent visited this property and found that considerable work had been done, two shafts sunk, which were then filled with water, and about 20 feet of a tunnel run in the vein. A 5-stamp mill was then in course of erection (it is now running) and the superintendent, Mr. A. Hayes, informed him that the ore assayed \$27.00 to the ton. Since then two or more small gold bricks have been sent to Vancouver, presumably the result of clean-ups from the mill. Some unpleasant rumors have been floating around camp in connection with this property, though the mill is still running. Should this property not prove the success anticipated by its owners it will possibly, though without reason, somewhat injure properties now undeveloped, but as the "Granite" and "Banner" claims are over two miles west of the "Cariboo" and in an entirely different formation, viz., granite, there is really no connection between these claims and what may be called Camp McKinney proper, where the formations, according to Mr. Carlyle, is of a diabasic character.

Considerable building is in progress on the "Cariboo" and

"Sailor" townsites, though the extraordinary rainy weather we have had during this month has retarded outside work.

BOUNDARY CREEK.

(From Our Own Correspondent.)

Greenwood Camp.—On Old Ironsides, Knob Hill, Victoria and all adjoining claims development is being actively pushed. The machinery house for all three claims is on the Old Ironsides. Two stationery boilers have been in use for some time and now a new 80 horse power boiler is being built in. The additional power this will supply will facilitate work on the properties. The Knob Hill cross-cut tunnel, which started near the northern boundary line of the claim, after having been driven in 625 feet in ore diagonally across the big lead of the claim, has been stopped at the eastern side line, and a cross-cut towards the foot-wall is now being run. At 350 feet in from the mouth of the tunnel a cross-cut was made some time ago, and after encountering the foot-wall a turn north was made and the tunnel was continued along the wall until a distance of 225 feet had been reached. At 225 feet farther in the main tunnel another cross-cut was run at right angles to it, and this is now in 200 feet. When this reaches the foot-wall there will be a block of ore ready for stoping approximately 225 feet each way, at a depth of about 170 feet. Immediately east of the cross-cut tunnel, which leaves the main tunnel at 350 feet in, a station has been cut out for the purpose of sinking a shaft at this point, where a hoist will be put in. The Old Ironsides tunnel eastwards from the shaft at the 200-foot level has crossed into the Victoria, and is now 300 feet past the dividing line between these two claims. Like the Knob Hill tunnel it has opened up an immense body of ore. There is a 330-foot shaft on the line dividing the two claims, and just now a large hoist is being placed at the mouth of this shaft. The three companies—Old Ironsides, Knob Hill and Granby—that are jointly operating the three properties just mentioned, are also doing a lot of work above ground. In addition to the building to house hoist, etc., on the Victoria there are either in course of erection or completed, houses for the mine superintendent and the mine foreman, and about twelve four-roomed cottages for married miners or other employees. The commodious and comfortable boarding house and private hotel the Company erected some time since, is to be enlarged, and mine offices are also to be built. The Hunter Kendrick Company and the Russell Hardware Company, of Greenwood, are both erecting hardware stores near by, and other Greenwood firms are arranging to open branch stores in the new town, named Phoenix, which has come into existence largely as a result of the Old Ironsides and Knob Hill Companies employing so much labor. The Stenwinder and Brooklyn, also in Greenwood Camp, are not now working, but it is understood that they will resume soon after trains are running in, so as to admit of their respective plants being added to at less cost for freight than under existing wagon-hauling conditions. The Gold Drop boarding and bunk houses are completed and other necessary work is well in hand, preliminary to proceeding with development work. The Snowshoe steam hoist is now at work and the inclined shaft has been deepened to 180 feet and still going down.

Deadwood Camp.—With so much space in this issue of the RECORD taken up by a description of the Mother Lode, it appears somewhat superfluous to write much of this mine this month. The north drift at the 200-foot level of the Mother Lode is now in 400 feet, leaving about 100 feet more to be driven to get under the winze in the old workings. A station is being cut out to accommodate the "special" hoist mentioned last month, and when this is completed the water will be taken out and the winze be sunk through some 200 feet incline depth to the new holdings. There are some thirty men on the pay-roll of the Mother Lode, and Mr. R. Hutchins, formerly employed as one of the shift bosses at the Le Roi, Rossland, is now foreman under the manager, Mr. F. Keffer, E.M. The late foreman, Mr. Henry Johns, who was recently engaged to take charge of the Montreal-Boundary Creek Co.'s claims—Sunset, Crown Silver and C.O.D., which are in the immediate neighbourhood of the Mother Lode—is now away on a holiday trip. Meanwhile a sight for the big plant that has been ordered for the Sunset is being graded, so that when the plant comes in everything may be in readiness for its prompt installation. Work on the Morrison is progressing favourably. The tunnel put in from the lowest level conveniently available has reached some nice looking ore, believed to be ledge. A drift is being run both ways in the foot-wall to determine the strike of the ledge. From where this latest strike of ore was made to the surface it is estimated to be about 200 feet. The Morrison now looks more promising than at any previous time, so its stock is growing in favour. On the Buckhorn, also in Deadwood Camp, road making and building is

about completed. Water is being brought in from Copper Creek to the machinery site, which is being levelled off, pending receipt of the compressor and hoisting plant already ordered. The incline shaft now being sunk is down about 25 feet, so that a start has been made to get under the big surface outcrop of copper ore to be seen on the Buckhorn. There is a fine showing of ore on the Gold Bug in North Deadwood. This claim, which is owned by Mr. D. A. Holbrook, is under bond to the London & Canada Syndicate for the Boundary Creek Mining & Milling Company, in which company the Syndicate holds a controlling interest. A vein containing some rich looking ore, with native silver showing freely in it, was first followed into the hill and then a shaft was sunk on the ore which dipped out of it before the 50-foot level was reached. It is not intended to cross-cut until the shaft is down to the 100-foot level. A very fine specimen of Gold Bug ore is being boxed up for shipment to Rossland. It weighs about 400 lbs. and shows a native silver scattered through it. Some of the best ore is being sacked for a smelter test, for which purpose about 10 tons will be sent probably to Trail. There is a lot of good class ore on the dump and apparently more where that came from. As there are two other claims of a similar name within a few miles, some confusion arises occasionally as to which Gold Bug is referred to in connection with the recent strike of rich ore, but the foregoing will serve to identify the particular claim upon which it was made.

Time and space limits forbid mention in much detail of other Boundary Creek properties that on their merits deserve notice. The Jewel, in Long Lake camp; the B.C., Oro Denevo, Emma and R. Bell, in Summit camp; the Golden Crown and Winnipeg, in Wellington camp; the City of Paris, in Central camp; the Last Chance and Silver King, in Skylark camp; the Lygia, in Graham's camp, are all at work. Other claims in which Boundary Creek mining men are interested are the Oro Fino group, near Rock Creek; the Crown Point group, on James Creek, some seven miles above Rock Creek; the Lottie group (upon which a big strike of copper-gold ore is stated to have been made lately), some 45 miles above Rock Creek on the main Kettle River. All these are well worthy of extended notice, but they must perforce be passed by this month.

Ores for the Paris Exhibition.—Specimens of ore from the following camps and claims have been forwarded to the Provincial Mineralogist to be sent to the Paris Exhibition:—White's camp: Lexington, Lincoln and City of Paris; Deadwood camp: Mother Lode, Morrison, Buckhorn and Gold Bug; Greenwood camp: Knob Hill, Ironsides, Brooklyn, Stenwinder and War Eagle; Wellington camp: Winnipeg and Golden Crown; Long Lake camp: Jewel, Enterprise and Lakeside; Copper camp: King Solomon and Big Copper; Summit camp: B. C.; Camp McKinney: Cariboo, Amelia, Minnehaha, Waterloo, Fontenoy and Sailor.

Railway and Smelter.—The track-layers on the Columbia & Western Railway are now at work between Cascade City and Grand Forks. It is stated that early in October they will reach Boundary Creek. The opening of the railway is eagerly awaited, for with improved communication and transportation facilities the development of the mines will be hastened. Mr. Paul Johnson well known from his previous successful connection with the Nelson smelter, is at present at Boundary Creek looking into the position in the interests of the British Columbia Copper Company, Ltd., of New York. Much newspaper exaggeration has been indulged in as to the object of his visit, which most probably is rather to select a site and to arrange necessary preliminaries, than to commence actual construction of a smelter. In any case it is gratifying to have the smelter question, as it affects this particular district, taken up by men of ample means employing one of the best smelter men on the continent to fully look into matters for them.

Midway, B.C.

PERCY VERENS.

ROSSLAND.

(From Our Own Correspondent).

Certain substantial improvements must be noted in this city, and these are not wholly of a public character. A number of new residences are in course of erection in the suburbs, for really it is a city of veritable distance and there is an urban as well as a suburban population. This "boom" in the matter of private residences has no doubt been stimulated by the street improvements which are now being completed on an extensive scale. As the city has a bonded debt of \$132,000 on which it is paying about 5 per cent., and a maximum percentage of 16 mills on the dollar on a total assessed value of \$1,831,660, it will be seen that its promoters are determined that Rossland will not lack any of those improvements which are considered absolutely necessary to local traffic and comfort. In the management of a city like this great chances

must be taken. Nature has done very little for the townsite and improvements, especially road grading, is expensive and necessary. One sees here on all sides the right of "eminent domain" exercised by the live authorities in carrying on the improvements which of course underwent the referendum and was endorsed by the ratepayers. In some respects Rossland is a very close corporation. Although the franchise for the election of mayor and aldermen is very liberal, yet on questions effecting the expenditure of public money, the typical Rosslander is jealous and no matter what your interests may be elsewhere if you are not a real estate owner in Rossland you are not much account. This is one of the advantages of having nothing to lose. The improvements going on and those contemplated show that in spite of the prevailing quietness there is an undercurrent of confidence in the future of the city, which keeps pace with a rapidly increasing ore production which now amounts at least to 5,570 above the corresponding period of last year. The ore shipments of Rossland mines from January 1 to August 20, amount at least to 92,000 tons. For the year 1898 the out-turn of the mines amounted to 111,000 at least. The present output is, therefore, about 19,000 tons less than the whole of last year and there are still 4½ months' shipment to the good.

The weekly shipments are now averaging at least 4,700 tons, and I am credibly informed that they will hereafter average at least 5,000 tons, which for a period of 17 weeks more would give a total of 92,000 + 4,700 + 85,000 = 181,700 tons, or 64 per cent. over the output of Rossland mines for 1898, but if 60 per cent. of an increase or a total of 177,000 ton be realized it will be a good record. Now of these 92,000 tons the Le Roi heads the list with 53,000, the War Eagle is next with 30,000, the Centre Star with 6,000, the Iron Mask 2,000 and the Evening Star with 500, odd figures being thrown out, and enough of these to make up the additional 500, giving the 92,000 tons. With the exception of the Centre Star, the shipping mines are the same old producers as there were in 1896. Notwithstanding many promises made that there would be from 17 to 20 "mines" around Rossland shipping ore. Red Mountain is doing all the work. Monte Cristo Mountain is in it to the extent of 500 tons. Columbia and Kootenay, and Deer Park mountains are not "in it" at all, and I fear the local statistician is given to romancing. "Brag, Sir, is a good dog, but Hold Fast is a better one." Inflation and exaggeration go hand in hand. That great progress is being made in the underground working of Red Mountain must be taken for granted. She is getting pretty well honey-combed on the southeast face said one of the underground men to me the other day, and this system is being scientifically managed.

The diamond drill as a prospecting machine has done good work for the two large companies, and it is about to do more. It is strange that it is not more generally used. If, for instance, it had been more extensively used in the Sunset, the Homestake, the Lily May, the Virginian, Iron Horse and on other properties much time and money could have been saved. There has certainly been some wild work here, but I shall leave the obsequies for the historian *Hunc capidem soch Morientes*.

Le Roi.—The main shaft of this mine has reached the 900 foot level. The shaft on the Black Bear has reached the 600 foot, and it is to be sunk to the 700 foot level. The ore which is being shipped to the Northport smelter chiefly comes from the 700 and 800 foot levels and intermediate points. I am credibly informed that the grade of this ore has lately improved. The management, I understand, has a very extensive plan of work which is to be carried out in the future. The shipments of ore have also increased. From 10 to 11 cars are now shipped daily.

War Eagle.—The new hoist is now working very satisfactorily under the direction of Mr. E. J. Balfour, the engineer in charge. The shaft is down to the 750 foot level. Mr. Balfour's jurisdiction extending to the 625 foot level, I learn that two new compressor plants are to be installed in the old War Eagle plant in Centre Star Gulch. These plants are to be used as a reserve. The system of electric bells and signals in connection with this mine is most admirably arranged. There is also a good fire service, which is the work of Mr. Balfour. There is a tank of 75,000 gallons of water, and a sufficient quantity of hose for any emergency. This renders the Company's property comparatively safe from fire and independent of the city fire department. The management is now shipping to the Trail smelter about nine cars of ore daily.

Recently, Mr. E. B. Kerby, a mining engineer from Colorado, was appointed assistant to Mr. Hastings. Both these gentlemen are mining engineers of the modern school, with considerable American experience of a practical character. As one might suppose the work around and about the War Eagle

has been increasing at a great rate, and Mr. Hastings has always been a busy man. His company fully realize the increasing character of his duties in giving him another assistant. A good man should not be over worked.

The Centre Star.—The management, which is in charge of Mr. Hastings, is well conducted. The shipments now are about two cars daily. The ore is taken out of the new shaft and is sent to the new Trail smelter. Before the snow begins more extensive shipping facilities will be installed.

Iron Mask.—Mr. Herrick, the general manager, said the other day that the management was shipping from 30 to 40 tons per day. Mr. Samuel Hall is superintendent. The Iron Mask is well and ably managed.

Virginia.—The drift south from the main shaft continues to be worked at the 500 foot level without cutting any ore. In the two pits recently excavated in the ledge a short distance south of the main shaft and in which there is said to have been a discovery, two or three men are at work with picks and have removed a small quantity of mineralised rock which is chiefly iron carrying a small value in gold. There is nothing in this find to justify the extravagant anticipations entertained. No ore body of any appreciable width has been found cutting the formation to the surface and possessing the dimensions which entitle it to be considered such.

Iron Horse.—Work has not been resumed on this property.

Evening Star.—The management has shipped so far about 500 tons of ore. This property so far is the only encouraging feature of Monte Cristo Mountain. These shipments virtually saves the reputation of this mountain for this season at least.

White Bear.—The 300 foot level has been reached without cutting any new ore shoots.

Deer Park.—Work has been resumed on this property in the south drift at the 300 foot level. No pay ore is in sight, especially at that depth. It has not been explained why the management has resumed operations.

British American Corporation.—(Great Western)—The work of pumping the water out of the shaft has commenced.

British American Corporation.—(Nickel Plate)—Sinking to the 400 foot level is in progress.

Gertrude.—The management is still cross-cutting at the 200 foot level, and carefully prospecting the surface.

Mascot.—Tunnels Nos. 2 and 3 have been connected by a winze 300 feet deep. About 27 men are employed by Supt. Williams, who reports development work progressing very satisfactorily.

British American Corporation.—(Columbia and Kootenay)—Development work is making good progress under Supt. Harkins.

Wallingford.—(Sophie Mountain)—Manager W. C. Archer reports that the drift is 96 feet from the cross-cut and 70 feet from the shaft, where there is pay ore.

Referendum.—The management is now offering for subscription the second issue of stock, amounting to 100,000 at 10 cents a share, payable in five monthly instalments at 2 cents each. These shares are offered to the public free from assessment or further liability.

The management has nine men at work on the property since June 5 of the present year. The location is on Forty-nine Creek, about eight miles from Nelson, B.C. Recently the company purchased a five stamp mill, engine and boiler, with cyanide and chlorination plant. This plant will be in operation about November 1. Five additional stamps will be put in operation by the spring of 1900.

The company recently issued a circular stating that the first issue of the treasury stock had all been subscribed. The condition of the company is reported to be good.

Velvet. The main tunnel is in 338 feet and drifting on the 250 foot level is in progress, it is said, along the vein.

Sunset No. 2.—The new shaft is down 100 feet. The management is again drifting at this level. A new tunnel is being run into the Gold Hunter, which is an adjoining claim.

British America Corporation.—(Josie)—The shaft is down 480 feet. It will be deepened to the 500 foot level. The management is now using the Josie's compressor. A new electric hoist is being erected.

Waneta and Trail Creek.—The shaft is being deepened on the Copper Bell, one of the properties of this company.

Portland.—This claim is on Sophie Cut. It adjoins the Velvet and belongs to the New Gold Fields, the same company that owns the Velvet. The tunnel is in 60 feet.

The Homestake.—The annual meeting of this company was recently held in Portland. The company have under various managements expended about \$33,000. According to the report of Mr. Howe, an expert, the property contains an ore body principally of silver, assaying as high as \$83. Much of the report is inferential. Development work is being vigorously prosecuted.

Coxey.—No. 2 tunnel is being extended.

Shakespeare.—It is reported that some Philadelphia parties are negotiating for the purchase of this group, which is located on Monte Cristo Mountain. Recently a surface examination was made on a quartz vein which was discovered on the south-west face of the claim. Some shots were put in and fired disclosing the existence of a quartz vein running up the mountain and carrying gold values.

In referring to the many improvements which are noticeable in and around Rossland, not the least are hotel improvements. A recent comer is the Russell House, situated on Washington Street, with A. E. Towers as manager. The Russell House is a first-class hostelry in all respects. It has accommodation for 100 guests. Having investigated the interior economy of this house, I can safely recommend it to the public, especially mining men from Victoria. Miss Towers is a very competent and attentive hostess.

NELSON.

(From Our Own Correspondent).

Nelson does not seem to possess the same advertising genius possessed by other towns, notably by Rossland. Consequently with equal claims to prominence she is not so well known. It is possible also owing to this that Nelson's growth has been steadier and built upon a most secure foundation. For the last two years Nelson has been quietly building up, until to-day the public and private buildings are second only to those of Victoria and Vancouver. To-day there are five large brick blocks in course of erection on our main street. One of these is for the Bank of Montreal, and will cost between twenty and thirty thousand dollars. Another, 60 x 90 is for the Hudson's Bay Co., while a still larger one is being put up by "Pat" Burns who supplies this country with meat. These buildings are not just common red brick houses with staring windows. Their fronts are built with ornamental bricks brought from far away, and graced with slabs of a beautiful white marble that abound on the shores of Kootenay Lake. So gradual has been her growth that residents scarcely notice it. It remains for visitors, returning after an absence of a couple of years, to mark the change.

A distinct period, however, was inaugurated on Monday, 31st of July, when the first spike of the new electric tramway was driven amid much ceremony and rejoicing. The momentous blows were struck by Mr. C. S. Drummond, the representative in England of the British Electric Traction Co., by which the line is being built. No slur is extended to the local venture to repeat Mr. Drummond's main remarks that the parent company would at present keep all the stock in the Nelson enterprise. If the company can hardly be expected to pay for a year or two, somebody will probably reap a harvest out of the land purchases being made in the extremities of the towns reached by the tramway. In any case the inhabitants of Nelson will be the chief gainers in many ways. The power for the tramway is being brought over the hills from Bonnington Falls, about ten miles away. The construction work is in the hands of Mr. C. Halifax Hall, a gentleman well known in various parts of Canada in connection with engineering matters.

Another enterprise which actually commenced construction in the previous week is the Gas & Coke Company. They are busily engaged in laying their mains along the principal streets.

In spite of statements made in various interested papers, there are practically no miners in Kootenay working for \$3.50 for an eight-hour day. At the Le Roi and War Eagle there are a few skilled machine hands drawing that amount, and at the Noonday, in the Slocan, the ruling rate has been the high figure of \$3.50 for the eight-hour shift; but the Noonday is in the hands of a man named Benedum, who is president of the Slocan Miners' Union, and it is reported that holding the mine under a bond, it is very much to his interest to get out as much ore as possible in a short time. The limit of that time appears to have arrived, as fifty men have been laid off and the owners are wondering in what shape their mine will be if the second payment is not paid when due.

In the immediate vicinity of Nelson, the Silver King, the Dandy, the Athabasca, the Granite, the Royal Canadian, the Ymir and others are all at work under the reduced rate. The Hall Mines are opening up the outcrop on the summit of the Kootenay Bonanza claim in quarry fashion. This being open work, the men can work there for ten hours. It is a strange commentary on the supposed disinclination of the men to work for the longer period, to see the rush the officials had for this work at \$3.50.

The Slocan, however, is shut up tight; not a mine is working. If they all opened up to-morrow there are not men left

in the country to work them. A day or two after the law came in force, the C.P.R. alone sold 400 tickets to outgoing men. Slocan naturally feels the shut down badly. Slocan City, Silverton, New Denver and even Kaslo are grumbling, while the wholesale merchants of Nelson find their orders fewer. The Government will feel it when the assessment returns come in.

A great deal of practical prospecting is being done in the watershed of Give Out Creek by the people who have taken a bond over the Dandy and other claims. The Dandy itself joins on to the Silver King. It is by no means a new find, having had a good deal of work done years ago. But the new people with Mr. E. Nelson Fell as manager, have put a large force of men to work, and will probably prove before long whether the Dandy is a mine or not. Mr. Fell is also at work on the Starlight, North Star and adjoining claims. The Starlight has been twice under bond before. It was taken hold of in 1894 by Mr. Geo. Humphreys, who at that time was bonding claims right and left, and was cutting a big swath all the way from Trail Creek to the Lardeau. Afterwards a Mr. Francis had it. He broke his leg riding home from the claim one day, and that was the last of him. Old-timers who know everything, have always averred that the work on this claim was misdirected. It is to be hoped that the new people will be more fortunate.

Nelson has suffered a great loss in the person of Mr. Henry B. Thomson, who came here some four years ago and built up Messrs. Turner Beeton & Co.'s business for them. Mr. Thomson is one of those men who combine an excellent business ability and a never failing good humor in the frame of a giant. No one was better known or better liked in the Kootenay. Of late he had lent his undoubted talents to the city by becoming a member of the city council, and at that Board his loss will be keenly felt. Mr. Thomson has gone to take charge of the 150-Mile property on the Cariboo Road.

SLOCAN.

(From Our Own Correspondent.)

The strike drags along its weary length with apparently no end in view; in fact one would be almost justified in asserting that a settlement is even more remote than it was at the very commencement. So many complications have set in that we are beginning to despair of seeing the mines in operation before next year, despite the many rumors to the contrary which are persistently circulated.

Notwithstanding the lamentable state of affairs which prevails, the Slocan is credited with an output of over a thousand tons for the five weeks ending August 19th, showing that it is utterly impossible to repress a district of such latent possibilities, no matter what efforts may be put forth with that object.

The unfailing signs of coming prosperity which were foreshadowed in the earlier part of the year, are even now amongst us, and would need very little to resuscitate them into active being, but encouragement of any description is apparently as far off as ever. Representatives of capital have refused to be driven away, and instead evidently consider this an opportune time to "get in on the ground floor," to make use of a western expression.

The Slocan Star has been thoroughly inspected by several well-known mining engineers, and it is common talk that a deal is under way for its purchase by a Toronto firm.

The threatened slump in Payne stock has not materialized, investors having doubtless become cognizant of the fact that the mine is at present in the best of condition and possesses intrinsic value outside the pale of speculation.

To quiet rumors it was stated recently on excellent authority that the management have not the faintest intention of acceding to the wishes of the "Union" by employing men at \$3.50 a day. On the contrary there have been surprisingly valuable discoveries recently in both the No. 4 and No. 5 tunnels, and the company is quite content to proceed with development on contract lines.

The Queen Bess has been making a general clean up, having sent 250 tons to the smelter already this month, but there is little likelihood of shipments being permanently resumed.

Owing to the action of the Silverton Miners Union which demanded that all contract men employed underground should be guaranteed a minimum of \$3.50 for eight hours' work, the Bosun camp has become completely deserted, and silence reigns supreme where formerly was a busy centre of industry. Fortunately the reverse can be said of other portions of Silver Mountain and it is to be hoped that the plucky operators who continue to work philosophically as if no labour trouble existed will meet with more substantial recognition than the bare appreciation of the people of the district. It is reported that the California is being stocked, and may soon be re-opened; but better still, the Marion, situated right alongside, has re-

cently been bonded by Toronto parties and is now finding employment for a small force of men. That other properties in this vicinity will also be in operation before long is quite manifest, as increasing interest has been awakened since the Bosun demonstrated its capabilities.

Work is proceeding in a desultory manner at some of the mines on Four Mile, but with the solitary exception of the Noonday which is responsible altogether for 360 tons, shipments at Silverton have been at a standstill. Little progress is being made on the tramway to the Wakefield, and in view of the labor difficulties the management seem uncertain whether to proceed; it is definitely stated, however, that the contract has been let to B. C. Riblet and construction will commence in a month at latest.

There appears to be little doubt that a deal has been consummated for the property owned lately by the Galena Mines Ltd., it being generally conceded that the ruling spirits in the Payne company have acquired control. In addition to the large quantity of concentrating ore already blocked out, there is known to be a great deal of zinc blende which it is thought may be turned to account at the prevailing high price of the metal. The concentrator which it is proposed to erect will be capable of dealing with both products.

A further clean up at the Enterprise has resulted in another seventy tons finding its way to the smelter, but as this mine is owned largely by the London and B. C. Gold Fields it is unlikely that anything more will be done until the labour atmosphere is somewhat clearer.

Around Slocan City the Arlington still continues to operate, but the Evening Star has been closed pending instructions from the East.

As an exception to other parts of the district, a slight increase of activity is noticeable up Wilson Creek. Men have been at work repairing and extending the trails for some time past, and on one property at least operations have already begun.

Mine disasters are comparatively rare in the Slocan, but one man was killed outright and another seriously injured at the Royal Sovereign a short time since through a premature blast caused probably by a miscalculation of the time required to burn a given length of fuse. The wonder is rather more accidents do not occur, as really necessary precautionary measures are seldom adopted even by experienced miners.

KAMLOOPS NOTES.

(From Our Own Correspondent.)

During the past month development work has progressed steadily on a large number of claims in this camp. Although the Pothook management have paid off several men, they are still pegging away at the 250 level and increasing the depth of the main shaft. A full force of men will not be again put on until after the new and more competent machinery is installed.

The method of driving the tunnel on the Copper King has resulted in a "corkscrew" affair. These people would have done better and been money in pocket had they continued their shaft instead of tunneling. The ore followed in sinking was high grade, and it seems an error to have left it on the odd chance of picking up the lead by driving a long tunnel that would give a depth not commensurate with the dead work done. The same error has been made on other properties in this camp, and much energy wasted to very little purpose.

In addition to putting the finishing touches to the ore bins and tramway, sinking has been resumed on the Python. A fair amount of stock in this company has been taken up locally.

The mineral exhibit for the Paris Exposition from this district will be a representative one, and will include samples from Savona and other points on Kamloops Lake, Grande Prairie, Stump Lake and the North Thompson, as well as a large exhibit from the Coal Hill camp.

McDonald's claim near Harper's camp is looking well for the amount of development work done so far. The vein matter averages 10 feet in width, assaying from \$15 to \$76 per ton. McDonald and Batchelor will continue their operations on the Noonday, a free milling proposition about five miles from Kamloops and lying just without the copper belt. The shaft is now down over 100 feet and the owners express themselves as satisfied with what they have. Assessment work has been done on a large number of claims during the past month, and although there is no big movement in the camp, a great deal of work is being quietly but persistently carried on. The outlook is most encouraging.

FISH CREEK CAMP, LARDEAU DISTRICT.

(From a Correspondent.)

The Lexington Mountain is attracting much notice this

season, a great deal of work having been done in this locality with encouraging results. The Kitsap claim on which assessment work has been performed at the bottom of the old shaft, shows five feet of ore, about 30 inches of which is practically solid. The Lone Star on the same lead has been opened up about 150 feet from the work on the Kitsap, and the same ore body has been exposed. The Silver Bow group from which a high assay was obtained two seasons back, shows a far greater ore body, containing grey copper, galena and a very fine ledge of quartz. There is also an excellent showing on the Black Diamond mine. The work at present being done on the Daffodil for the Wildflower Group, disclosed a truly remarkable surface showing. The lead has been uncovered for a distance of 250 feet. There are four separate ore streaks, the widest being 24 inches, and the mineral is a bright fine grained galena with grey copper and copper pyrites, and some iron pyrites.

The great excitement of the moment is being caused by the discovery of a big quartz lead containing copper and free gold to the value of \$439. This lead is quite a unique discovery so far as this district is concerned, and prospectors are as thick as bees around the location. Quartz showing visible gold has just recently been found on Beatrice Mountain.

REVELSTOKE.

(From Our Own Correspondent.)

As was printed last month, public interest in this place has been very strongly aroused over certain copper claims in the Standard Basin (Boston & B.C. Copper Co., Big Bend) and many have been the highly uncomplimentary remarks made about this much talked of concern. Having been at some pains to find out by repeated inquiry from those who know the ground in question, what the facts really are, it is fair to say that there is a very good surface showing of ore, and some very fine specimens have been exhibited, carrying native copper in addition to the more plentiful chalcopryite. But enough development work has not been done yet to prove the value or continuity of the vein, and undoubtedly it was a most improper thing to issue such a prospectus as was submitted to the public. It is unnecessary to refer much to the very elaborate and highly imaginative picture that was also issued, but the artist's idea of a smelter was very peculiar. It looks like a model village, or possibly machine works, with a couple of gasholders and a lime kiln thrown in by way of variety. No absolutely definite information is to hand at the time of writing as to what opinion the expert who went up to examine the property has given it, but as all the interested parties have left the town, it is surmised that the opinion was unfavorable. It is quite possible, however, that the claims may prove all right when more development work has been done, and the sooner this is attended to the better.

Placer work is being carried on still in a few places in the Big Bend, and at Smith Creek very good results are said to be obtained, though one or two others that have been worked pretty steadily for some years are now closed down, the French Creek Co. especially. It is to be hoped that the cessation is only temporary, and that with the improved communication up the river, now seriously considered, the camp will resume its former active habits.

Nothing of consequence is reported from the Illecillewaet and Albert Canyon district, except that in the opinion of some, the old Lanark mine may possibly be started up again before long.

A very great deal of work is being done in the Lardeau, and fresh reports come in daily of valuable strikes being made. That some, at least, of these reports are perfectly true is within the knowledge of your correspondent, and in this (Lardeau) district it seems above all necessary to assay everything about the vein before it is rejected—two instances may suffice: One, wherein the search for grey copper the massive pyrites was rejected as worthless, when it carried 20 to 50 oz. silver and \$5 to \$20 in gold; and another case where auriferous quartz assaying \$500 per ton was thrown on the dump while the owners were searching for galena.

The advent of the C.P.R. through the district is assured, probably also of the Great Northern; and once convenient transportation is an accomplished fact nothing can hold the Lardeau, Fish Creek and Trout Lake districts back, for the wealth as well as the quantity produced in those districts will cause astonishment in mining circles. Rather vague reports are just in regarding a new and rich strike just made in the Nettie L., near Ferguson, but at present they are not verified and it is better in consequence to say nothing, except that it is a most likely circumstance to occur in that mine, which will shortly be a shipper. Many others are shipping more or less, notably, perhaps, the Silver Cup, the Beatrice, the Tower, and others too numerous to mention. All are anxiously

awaiting the promised railroad, and that is expected to be in running order this year, so that next season we may reasonably expect a great increase in the amount of ore mined and smelted. In connection with the last remark, there would seem to be a very good opening for a smelter somewhere in the neighbourhood, as there is a vast amount of second-class ore, which will hardly bear the cost of a long journey, but could be profitably smelted at a point nearer the mines. Wood, water and fluxes are all abundant; fuel could be laid down at a very moderate cost, and with these conditions, as well as an ample supply of ores, a smelter should pay very well.

GOLDEN.

(From Our Own Correspondent.)

Negotiations are proceeding with a view to the purchase of the smelter at Golden with a view to its operation as a copper stack.

Mr. J. Henderson and his Rossland associates have been carrying on development work on a copper property at Spruce Mountain, on the middle fork of the Spillimachene River, and have encountered some very fine ore.

Work is also being prosecuted at the Burns Basin, where a Portland syndicate are driving a tunnel to test a big gold-bearing ledge. This syndicate proposed to acquire the Burns mill which is on a neighbouring claim, and to operate the properties actively, as it was supposed the gold could be profitably extracted by cyanide, since the mill had failed to save it. Expert reports, however, indicate that the ore is likely to prove refractory, requiring smelter treatment. Without means of transportation the establishment of roasters can hardly be seriously considered for the present.

The Bald Mountain Company have been doing further development on their properties near Donald, and the ground is reported to be looking well. Mr. J. H. Inkster, M. E., recently examined this property on behalf of an English syndicate.

A good strike is reported from Donald, where Messrs. Cooper and Baines are developing a lead in contact between lime and slate ten miles north of the railway. The ore is a tetrahedrite and assays from \$45 to \$150. Mr. C. Baines has written to Mr. E. A. Hagen, of Golden, as follows:—"We have done a good deal of work at the spot you suggested, with very satisfactory results, having got out some pieces of ore which I should judge will weigh 200 lbs."

Some excitement has been caused locally by big gold assay returns on quartz from Canyon Creek, within ten miles of Golden. Placer gold has long been known to exist in this creek, but this is the first quartz find and several prospectors have since proceeded to the spot and located claims on ore which assays very well indeed.

The only other properties being systematically developed at the present time in this district are those being operated by The Certainty Gold and Mining Co., at the Certainty mine on Fifteen-Mile Creek. Here the lead has been cross-cut at 75 feet in from No. 1 tunnel and is showing 20 inches of ore, assaying from \$6 to \$11 in gold and from 3 to 17.5 per cent. copper. No. 2 tunnel is now being run at an elevation of 450 feet above No. 1 tunnel with a view to cross-cutting the lead which shows 20 feet wide on the surface. The other property being operated by the company is the Porphyry and Iron Hill group on Canyon Creek, where cuts are now being run to define the ledge. There is a large showing of copper ore here. Both these properties are especially handy to transportation, the Certainty group being within seven-and-a-half miles of the Columbia River and within 11 miles of Golden, while the Porphyry and Iron Hill is located within ten miles of Golden, at an elevation of only 5,700 feet, and the country is such that a waggon road can be built at small cost to connect the railway station with the mine. The bond on the Porphyry and Iron Hill expires on Sept. 1st, but there is little doubt that it will be taken up by the Company.

PUBLICATIONS.

MECHANICS' Pocket Memoranda; the International Correspondence Schools; the Colliery Engineer Co., Scranton, Pa., 1898.

This exceedingly useful little handbook is now in its fifth edition, (77,000 copies). In the present edition several important changes have been made, table of five-place logarithms, of four-place natural trigonometric functions and time-saving formulæ having been substituted for the chapters contained in former editions relating to architecture, building, plumbing, heating and ventilation. A new and wonderfully simple method of extracting any root of a number is also given. To sum up briefly, this work now stands in every way a model production of its kind. There is a pleasing absence of that

superfluous matter which is so often the distinguishing mark of so-called technical pocket-books. In the work before us, all the information is concisely yet tersely presented, and is of such a character as is constantly required in mechanical, electrical, hydraulic and other branches of engineering.

PRODUCING MINES.

COAST MINES.

We are indebted to the general manager of the Fairfield Exploration Syndicate Mine for the following report from the Dorothy Morton mine for June and July:

During June—Mill ran 16 days, 10 hours and 6 minutes.

Tons ore crushed.....	1,410
Tons treated by cyanide.....	1,256.8
Bullion recovered, (oz.).....	1,937

Made up as follows:

	Ounces.
Fine gold.....	435
Silver.....	862
Total value.....	\$9,632
Calculated extraction (per cent. gold).....	88.93
Calculated extraction (per cent. silver).....	79.4
Consumption cyanide per ton (pounds).....	1.8
Consumption zinc per ton.....	.33

In July—Mill ran 17 days, 16 hours and 17 minutes.

Tons ore crushed.....	1,041
Tons treated by cyanide.....	976.6
Bullion recovered (oz).....	2,004

Made up as follows:

	Ounces.
Fine gold.....	450
Silver.....	1,073
Total value.....	\$9,950
Calculated extraction (per cent. gold).....	88.5
Calculated extraction (per cent. silver).....	79.9

YMIR.

The output of the Ymir Camp for the present year, to the end of last month, is as follows: Ymir mine, 7,400 tons crushed and 46 tons shipped; Porto Rico, 2,000 tons crushed; Dundee, 700 tons crushed; Blackcock, 188 tons shipped; New Victor, 6 tons shipped; Tamarac, 7 tons shipped. Total, 10,347 tons. The output from the Ymir mine for July was approximately 2,000 tons.

SLOCAN.

The Custom returns from the port of Kaslo for the month of July are as follows:

Gross lbs. Ore.....	967,556
Pounds Lead.....	347,042
Ounces Silver.....	43,699
Value.....	\$41,977

SLOCAN.

The Slocan output for the month of August makes a very insignificant showing, and at present the outlook in this district, having regard to the speedy adjustment of the labour difficulty, is far from encouraging. The production for the four weeks ending August 25th is subjoined:

Sandon—	Tons.
Coin.....	2½
Queen Bess.....	191
American Boy.....	20
Enterprise.....	110
Black Prince.....	17
Lucky Jim.....	140

Whitewater—

Whitewater.....	117
Jackson.....	88

McGuigan—

Rambler.....	48½
Antoine.....	20

Ainsworth—

Little Donald.....	55
Tariff.....	25

Slocan Lake—

Noonday.....	60
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ROSSLAND.

Our Rossland correspondent telegraphs: The total ore shipments to date (Aug. 25th) approximate ninety-five thousand

tons. Calculating on the present basis of production the output from this camp from January 1st to August 31st, will be one hundred thousand tons.

The following exports of mine products are reported by the Rossland Custom House for the month of July:

	Tons.	Value.
Ore.....	6,030	\$170,486
	Pounds.	
Matte.....	556,110	174,732

NELSON.

The value of the mine exports from Nelson for July are as follows:

Coke.....	\$ 60
Ore.....	3,495
Gold Bullion.....	26,322

The smelting operations at the Hall Mines' smelter for the four weeks ending August 4th, 1899, were as follows:—Twenty-two days' twenty hours' smelting. 5,083 tons of ore were smelted: containing (approximately) 81 tons copper, 55,800 ozs. silver.

For the two weeks ending Aug. 19th:

	Tons.
Hall Mines.....	2,450
Athabasca.....	300
Porto Rico (Ymir).....	175

It is estimated by the Nelson *Tribune* that the value of the output from West Kootenay for the present year to Aug. 19th, is approximately \$3,693,420.

COAL EXPORTATIONS.

The shipments of coal from the Island collieries during July were as follows:

	Tons.
The New Vancouver Coal Co.....	37,748
Wellington.....	14,954
Union.....	6,420
Total.....	58,222

FOREIGN SHIPMENTS TO AUGUST 15TH.

The New Vancouver Coal Mining & Land Co., Limited, shipments are:

Date.	Vessel.	Destination.	Tons.
6—SS.	Titania.....	Port Los Angeles.....	5,104
7—SS.	San Mateo.....	San Francisco.....	4,450
9—SS.	Mineola.....	San Francisco.....	3,425
10—SS.	Robt. Adamson.....	San Francisco.....	4,557
15—SS.	Washtenaw.....	San Francisco.....	4,294
Total.....			21,830

THE METAL MARKET—AUGUST.

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

During the month business has been very active in every direction and manufacturers generally report in the most encouraging strain.

SILVER.

The silver market has been remarkably steady, though a slight decline is reported for the last few days of the month, our quotations from New York for the 28th and 29th of August being 60 1-8 and 59 11-16, respectively. The highest point reached in August was 60 3-8. The average price of silver for July 60 26c.

COPPER.

The upward tendency continues and a very large business is reported. Lake copper is still obtainable at 18½c. although some producers decline to sell even at this quite unprecedented price. In electrolytic copper in cakes, bars and ingots, prices have remained unchanged at \$17 3-8 to \$17.45. The English market has been somewhat affected by the political situation and the uncertainty prevailing with regard to the adjustment

of the Transvaal difficulty. The average price of cake copper last month was \$18.33, this month the average price is \$18.50.

LEAD.

The strike among the smelter and mine workers has now terminated, the men having been obliged to come to terms. This market is likely to speedily return to the normal condition. Prices so far, however, have not changed, our latest quotation being \$4.57½, New York and \$4.50 to \$4.52½, St. Louis.

SPELTER.

Owing to the apathy displayed of late by consumers, who seem rather reluctant to lay in supplies for future use, the market has shown a tendency to decline. Last month the demand was a great deal more lively, but prices have fallen steadily though slowly since May. Our latest quotations for August are \$5.62½ New York, and \$5.50 St. Louis.

THE STOCK MARKET.

The local mining stock market is yet in a very demoralised condition, though there appears to be a more hopeful feeling regarding the immediate future. This may be accounted for by the fact that many hold to the same view that some settlement may speedily be reached of the labour difficulty in the Slocan and Nelson districts. But the only foundation on which this expectation is based is the belief that now the prospecting season is drawing to a close, the majority of the miners who during the summer months have been employed in developing claims of their own in the hills, will be returning, and will be obliged to seek work to support themselves. It is, meanwhile, certain that the present Government will insist on enforcing the eight hour law and that at the next election this will become a party issue—in our opinion a matter for regret. One of the features of the present month has been the rapid rise in Rambler-Cariboo—but this stock is always playing unlooked-for antics. The present demand, which has resulted in advancing the price from 29 to 43, is occasioned by a report of a recent rich "strike" and of forthcoming dividends. Dardanelles have advanced a point or two in consequence of the resumption of operations, while Wonderful are selling at 8 and as high as 9 as the result of an effort of Eastern buyers to obtain a controlling interest. St. Keverne have been in some demand at 4c.; Payne is held very firm at from 1.37 to 1.40; and Noble Five has been selling at 20 to 21.

In the Rossland market, Homestake has been the most active, advancing at one time to 14, but afterwards declining to 8c. I.X.L. has been active at from 8 to 10c. in consequence of a reported find of free gold quartz. The Evening Star has now entered the producing list and shares have been in great demand, but many orders cannot be filled by brokers at present prices. Big Three has declined to 14½ and Deer Park is quoted as low as 2½. Georgia is on the market at 1¾ with

no buyers. Gopher has been selling at 3 to 3½, Monte Cristo at 6 to 7, Virginia from 20 to 25, White Bear is offering at 4¼, St. Elmo at 6, and War Eagle 3.53 asked and 3.46 bid.

In sympathy with the market Nelson and Ainsworth shares have declined considerably in the last few months. Athabasca has been selling at from 37 to 38, Excelsior at 11, Tamarac at 12½, Nelson-Poorman at from 19 to 20, while Dundee is offered at 18, and Leviathan, of which at present little is known, at 3½.

Since last month Crow's Nest has advanced from \$38 to \$50, and even at this high price few shares are on the market. Recently the North Star mine, owned by Messrs. Mackenzie & Mann, the railway contractors, has been transferred to an incorporated company and shares are being offered at par in Eastern Canada. Of other East Kootenay shares, Sullivan is quoted at from 18 to 19.

In Camp McKinney, a five stamp mill is about to be erected at the Waterloo and this has advanced the shares from 8½ to 11; Minnehaha has declined to 19; Fontenoy is held very firm and very few shares are on the market at 17; Cariboo has advanced from 1.20 to 1.30. This company is now paying dividends of one cent per share per month, and is moreover steadily increasing its reserves. Operations have commenced on Sailor. Fairview shares are quiet, Smuggler is down to 2½, and Fairview Corporation is quoted at 8½ to 9. Boundary Creek shares are fast coming into favour with investors, particularly in the large cities of the East. Morrison has advanced to 18 and a large number of sales at this figure are reported. Winnipeg is selling at from 29 to 31; King at 20 to 22; Boundary Creek Mining and Milling at 5½ to 8; Brandon and Golden Crown at 20; Knob Hill at 98; Old Ironsides at 1.13; and Rathmullen at 7½ to 7¾.

Van Anda has been most active among Coast shares and is held very firm at 11½, large orders at this price coming from Eastern Canada.

THE BROWN FURNACE.

Messrs. Fraser & Chalmers, sole and exclusive manufacturers of the Brown furnaces, have requested us to call attention to a recent decision of the United States Circuit Court, District of Colorado, touching the validity of the U.S. Letters Patent forwarded to Horace F. Brown for improvements in the construction of ore roasting furnaces. This decision fully covers the points at issue and confirms the rights of the patentee. The public are, therefore, cautioned against purchase or use of the Ropp furnaces, as having been pronounced by the courts to be rank infringements on the Brown furnace patents. The law, moreover, recognizes, no distinction between maker, seller, purchaser or user, in recovering damages by reason of infringements of patents; all being equally liable.

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Sackville, N. B.
Shubenacadie, N. S.

Summerside, P. E. I.
Sydney, N. S.
Truro, N. S.
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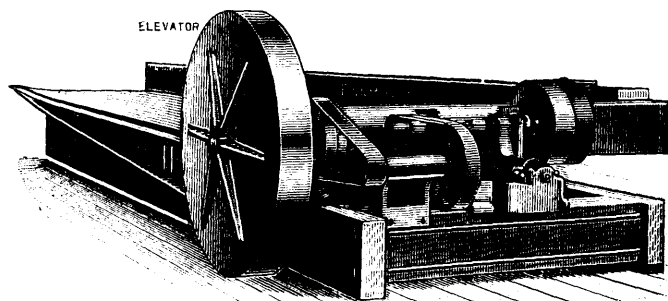
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Mining Stocks.

Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C., Aug. 28, '99.

Company.	Capital.	Par Value.	Price.
TRAIL CREEK.			
Alberta.....	\$1,000,000	\$1	\$ 4½
Big Three.....	3,500,000	1	14½
Bruce.....	1,000,000	1	10
Butte.....	1,000,000	1	02
Caledonia Con.....	1,000,000	1	5½
Centre Star.....	3,300,000	1	
Commander.....	500,000	1	10
Deer Park.....	1,000,000	1	2½
Enterprise.....	1,000,000	1	20
Evening Star.....	1,000,000	1	12
Georgia.....	1,000,000	1	14
Gertrude.....	500,000	1	11
Golden Drip.....	500,000	1	15
Gopher.....	1,000,000	1	03½
Hattie Brown.....	1,000,000	1	03
High Ore.....	500,000	1	05
Homestake.....	1,000,000	1	8
Iron Horse.....	1,000,000	1	10½
Iron Mask.....	500,000	1	70
I.X.L.....	1,000,000	5	11
Iron Colt.....	1,000,000	1	10½
Jumbo.....	500,000	1	25
Le Roi.....	£1,000,000	£5	£6
Lilly May.....	\$1,000,000	1	\$0 20
Mabel.....	1,000,000	1	15
Mayflower.....	1,000,000	1	10
Monita.....	750,000	1	19
Monte Cristo.....	2,500,000	1	7
Nest Egg-Firefly.....	1,000,000	1	05
Northern Belle.....	1,000,000	1	4
Novelty.....	1,000,000	1	4
Palo Alto.....	1,000,000	1	03
Poorman.....	500,000	1	14
R. E. Lee.....	2,000,000	1	3
Red Mountain View.....	1,000,000	1	3
Rossland, Red Mountain.....	1,000,000	1	10
St. Elmo.....	1,000,000	1	6½
Silverline.....	500,000	1	6
Silver Bell Con.....	500,000	25	8½
Victory Triumph.....	1,000,000	1	08
Virginia.....	1,000,000	1	25
War Eagle Consolidated.....	2,000,000	1	3 53
White Bear.....	2,000,000	1	4½

AINSWORTH, NELSON AND SLOCAN.

American Boy.....	1,000,000	1	11
Arlington.....	1,000,000	1	6½
Argo.....	100,000	0 10	10
Athabasca.....	1,000,000	1	40
Black Hills.....	100,000	0 10	10
Buffalo of Slocan.....	150,000	0 25	—
Channe.....	250,000	0 25	03
Dundee.....	1,000,000	1	18
Dardanelles.....	1,000,000	1	15
Dellie.....	750,000	1	12
Exchequer.....	1,000,000	1	12
Fern Gold.....	200,000	0 25	31
Goodenough.....	800,000	1	11
Gibson.....	650,000	1	17½
Hall Mines.....	£300,000	£1	
Lerwick.....	\$1,500,000	\$1	10
Leviathan.....	2,000,000	1	2½
London.....	150,000	25	25
Miller Creek.....	1,000,000	1	08
Minnesota.....	1,000,000	1	66
Nelson-Poorman.....	250,000	0 25	20
Noble Five Con.....	1,200,000	1	23
Ottawa and Ivanhoe.....	1,000,000	1	12½
Payne.....	3,500,000	1 00	1 40
Rambler Con.....	1,000,000	1	43
Reco.....	1,000,000	1	100
Slocan-Reciprocity.....	1,000,000	1	—
Slocan Star.....	500,000	50	1 25
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	5
Sunshine.....	500,000	10	
Tamarac.....	1,000,000	1	12½
Two Friends.....	240,000	30	06
Washington.....	1,000,000	1	25
Wonderful.....	1,000,000	1	8

LARDEAU.

Lardeau Goldsmith.....	200,000	1	04
Consolidated Sable Creek Mining Co.....	1,500,000	1	10
Lardo-Duncan.....	1,500,000	1	05

TEXADA ISLAND.

Gold Bar.....	100,000	10	10
Raven.....	1,000,000	1	6
Texada Proprietary.....	250,000	0 25	25
Texada Kirk Lake.....	600,000	1	1 00
Treasury Mines.....	250,000	25	3
Van Anda.....	5,000,000	1	11½
Victoria-Texada.....	150,000	0 25	04

VANCOUVER ISLAND.

Alberni Mountain Rose.....	250,000	1	05½
Consolidated Alberni.....	500,000	1	5
Mineral Creek.....	500,000	1	05½
Mineral Hill.....	750,000	1	05
Quadra.....	500,000	1	05

CARIBOO.

Cariboo Gold Fields Ltd.....	\$100,000		
Cariboo Hydraulic Consolidated.....	\$5,000,000	\$5	1 55
Cariboo M. & D. Co.....	300,000	1	25
Golden River Quesnelle.....	\$350,000	£1	1 40
Horseshy Hydraulic.....	\$200,000		
Horseshy Gold Mining Co.....	1,000,000	\$10	1 70
Victoria Hydraulic.....	300,000	1	85

LILLOOET DISTRICT.

Alpha Bell.....	500,000	1	
Cayoosh Creek Mines.....	500,000	1	
Excelsior.....	500,000	1	
Golden Cache.....	500,000	1	
Lillooet Gold Refs.....	200,000	25	

FAIRVIEW CAMP.

Smuggler.....	1,000,000	1	02½
Fairview Corporation.....	1,000,000	25	09

BOUNDARY CREEK.

Boundary Creek M. M. Co.....	1,500,000	1	09
Brandon and Golden Crown.....	1,500,000	1	29
King.....	1,500,000	1	25
Knob Hill.....	1,500,000	1	98
Morrison.....	1,000,000	1	18
Old Ironsides.....	1,000,000	1	1 13
Pathfinder.....	1,000,000	1	16
Pay Ore.....	1,000,000	1	07½
Rathmullen.....	2,500,000	1	08
Winnipeg.....	1,000,000	1	31

CAMP MCKINNEY.

Camp McKinney Development Co.....	600,000	1	23
Cariboo.....	1,250,000	1	1 30
Minnehaha.....	1,000,000	1	19
Waterloo.....	100,000	10	11
Fontenoy.....	1,000,000	1	17
O'Shea.....	10,000	10	02
Waterloo No. 2.....	50,000	10	02
Mammoth.....	50,000	10	02
Little Cariboo.....	100,000	10	02
Shannon.....	50,000	5	03
Sailor.....	1,250,000	1	15
Silver Bell, Consolidated.....	500,000	25	8½

REVELSTOCK.

Carnes Creek Consolidated.....	1,000,000	1	—
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VERNON DIVISION.

Hidden Treasure.....	100,000	10	10 00
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EAST KOOTENAY.

Crow's Nest Pass Coal Co.....	2,000,000	25	\$50 00
North Star.....	1,500,000	1	1 00
Sullivan.....	1,000,000	1	18

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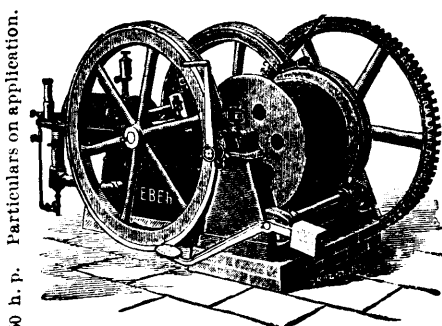
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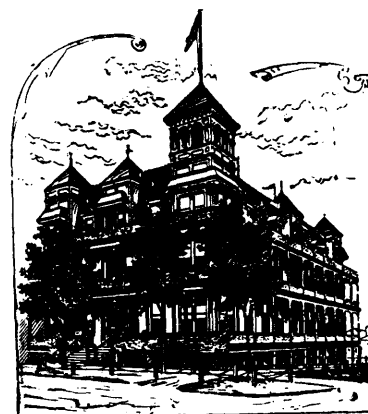
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We submit to the public as a safe and profitable investment the first issue of 100,000 shares in the Referendum Free Gold Mining and Milling Company, Limited, non-personal liability, just organized and to be registered during the first week of July. The capital stock of the Company will be \$500,000 in shares of 25 cents per value. Of these 800,000 shares are set aside to be sold to develop further the property and operate the mine.

The Company's property is situated on Forty-Nine Creek, about 8 miles from the City of Nelson, B.C., and in the well-known free-gold belt, in which are also the Athabasca and Poorman mines, which have yielded excellent profits to their owners. Two shafts 35 feet deep have been sunk on one vein, and numerous cuttings have been made, showing the continuity of the ore body for one thousand feet. Assays from ore from these works are as follows: \$80, \$87, \$246, \$360, \$412. Dr. P. Langhammer, mining engineer, estimates this vein to average \$43 in value and 20 inches in width. This showing has enabled the Company to conclude arrangements for a plant to treat the ore, to be installed before snowfall. The gold being free and capable of extraction on the ground the expensive charges of transportation and smelting are obviated, and the profits will be correspondingly larger than from a base ore of equal assay value. The Company has thus its property proven and arrangements made to mine profitably from its inception and to pay dividends at an early date.

A second quartz vein 6 feet in width, surface ore from which gave assays of \$5, crosses the property. Exploratory work on this vein will be commenced about June 1st. This vein promises to be a valuable one upon development, and arrangements are already made for the enlargement of the reduction plant to keep pace with the output of ore.

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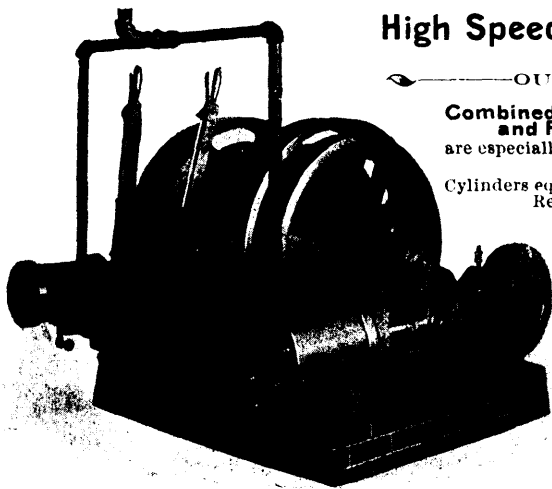
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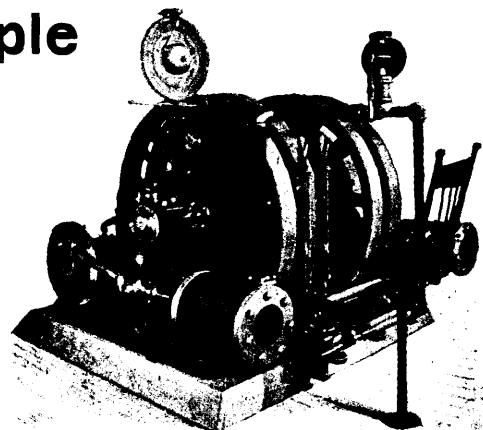
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Tenders for Placer Mining Claims on Dominion Creek, in the Yukon Territory.

Sealed Tenders, addressed to the undersigned, and marked on the envelope "Tender for a Placer Mining Claim," will be RECEIVED at this Department up till noon on

FRIDAY, THE FIRST DAY OF SEPTEMBER, 1899,

for placer claims and fractions of claims on Dominion Creek reserved for the Crown.

The following is a list of the numbers of the claims and fractions and the approximate frontage thereof as surveyed by Messrs. James Gibbons and R. W. Cautley, Dominion Land Surveyors:—

BELOW UPPER DISCOVERY.

No.	Length in ft.	No.	Length in ft.
1A	5	10A	33.3
2A	19	15A	42.25
3A	30.5	31A	43.
8A	87.4		

ABOVE LOWER DISCOVERY.

No.	Length in ft.	No.	Length in ft.
1A	12.	6A	35.00
2A	59.1	10A	143.25
4A	1.25		

BELOW LOWER DISCOVERY.

No.	Length in ft.	No.	Length in ft.
1A	56.3	75A	24.7
2A	7.2	76	500.
2C	20.3	77	449.8
8A	34.00	16C	23.8
9A	39.25	18A	164.7
11A	98.4	78A	3.6
13A	68.5	80	431.3
16A	40.25	81A	15.3
20	202.1	83	500.
21A	71.9	84	500.
22	500.	85	500.
22A	60.7	85	500.
23	446.2	87	500.
25	500.	87A	500.
26	120.66	87B	387.9
31	350.5	89A	35.1
33	500.	91	500.
34	500.	92	500.
36	500.	93	500.
37	500.	94	500.
38	352.	95	500.
68A	94.7	96	500.
69A	40.5	97	500.
70A	72.6	98	500.
71	414.4	99	500.
73A	12.2	100	478.7
74A	21.3	101	119.

Each tender shall specify the numbers of the claims and fractions tendered for and also the amount of bonus offered for each and fraction. The tender may be for the whole lot or any one or more of the claims and fractions, and must be accompanied by an accepted cheque in favour of the Minister of the Interior for 10 per cent. of the amount offered, one-half of the remainder to be paid into the Department of the Interior at Ottawa, or to the Commissioner of the Yukon Territory at Dawson within 30 days from notice of acceptance of tender, and the balance within six months thereafter with interest at the rate of 4 per cent. per annum.

Entries for the claims and fractions will be granted in accordance with the Placer Mining Regulations on acceptance of tender.

The entries will be subject to the usual royalty and the provisions of the said regulations from time to time in force, except as to representation provided for by Clause 39, which will not be required.

The claims and fractional claims for which entries may be granted shall not include any portion of the bench and hill claims for which entry may have been previously granted.

The highest or any tender not necessarily accepted.

JOHN R. HALL,
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Department of the Interior, Ottawa, 27th May, 1899.

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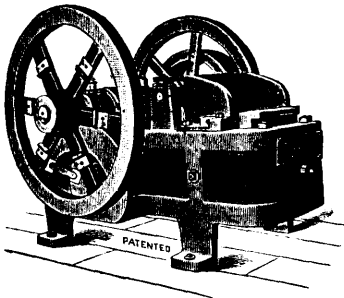
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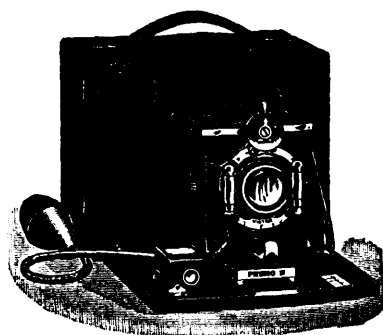
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NEW WESTMINSTER ROUTE.

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—Friday at 7 o'clock.
Leave New Westminster—For Victoria Monday at 13.15 o'clock.
Thursday and Saturday at 7 o'clock.
For Plumper at 7 o'clock.
For Plumper and Moresby Islands—Thursday at 7 o'clock.

FRASER RIVER ROUTE.

Steamer leaves New Westminster for Chilliwack and way landings every Tuesday, Thursday and Saturday at 8 o'clock during river navigation.

NORTHERN ROUTE.

Steamship of this Company leave Victoria for Fort Simpson via Vancouver and intermediate ports on the 10th, 20th and 30th of each month, and for Queen Charlotte Islands on the 10th of each month.

KLONDIKE ROUTE.

Steamers of this Company leave weekly for Wrangel, Juneau, Skagway and Dyea.

BARCLAY SOUND ROUTE.

Steamer "Willapa" leaves Victoria for Alberni and Sound ports the 1st, 7th, 14th and 20th. Extending latter trip to Quatsino and Cape Scott.

The Company reserve the right of changing this Time Table at any time without notification.

G. A. CARLETON,
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