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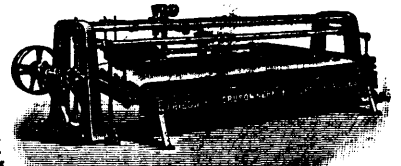
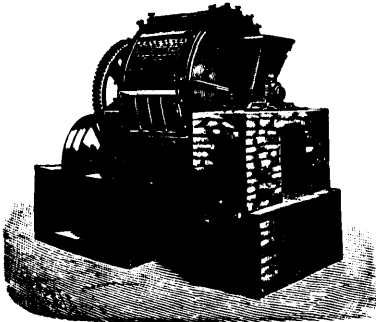
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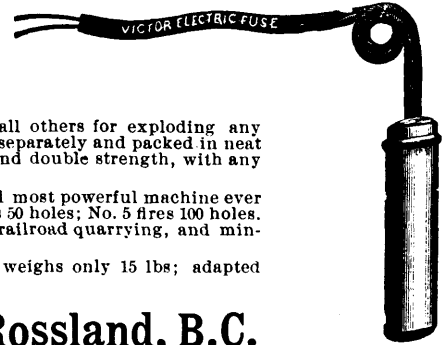
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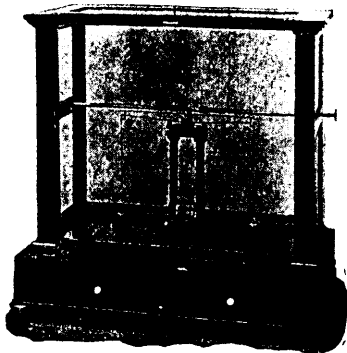


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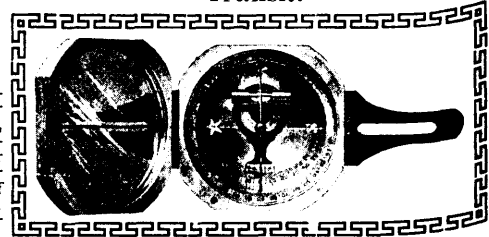
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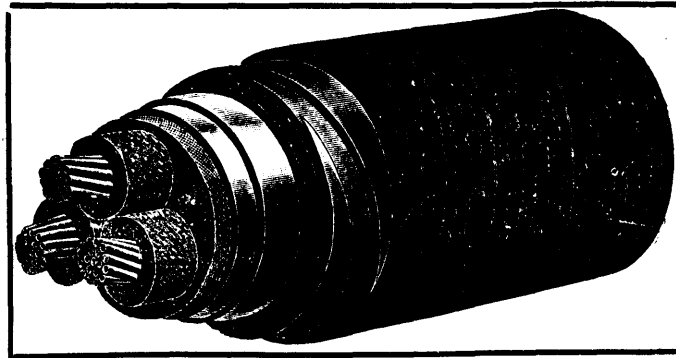
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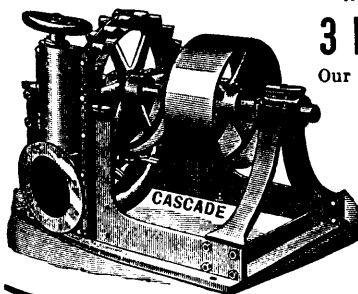
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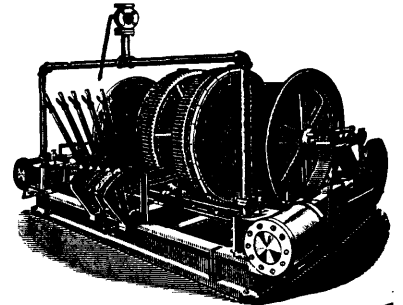
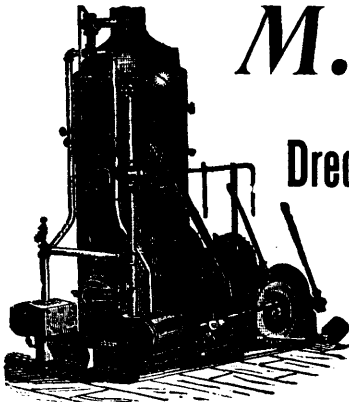
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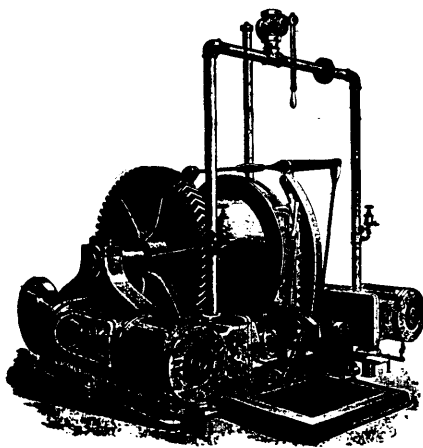
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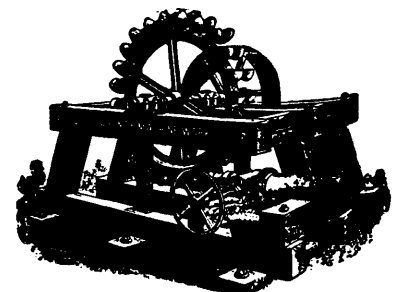
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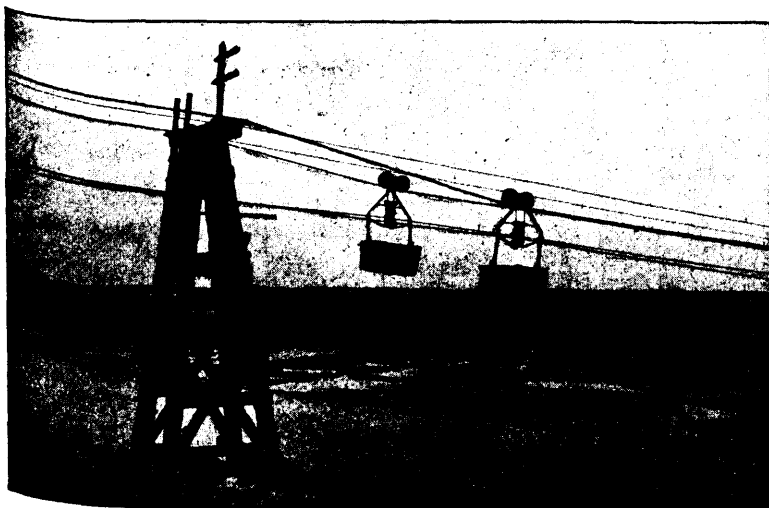
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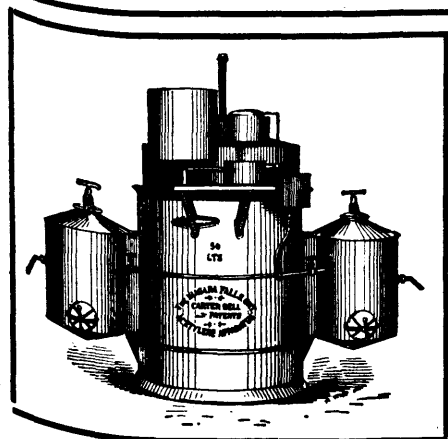
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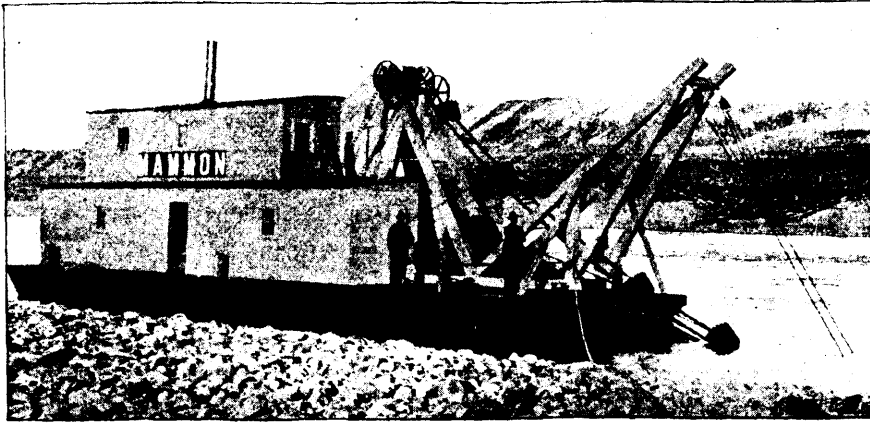
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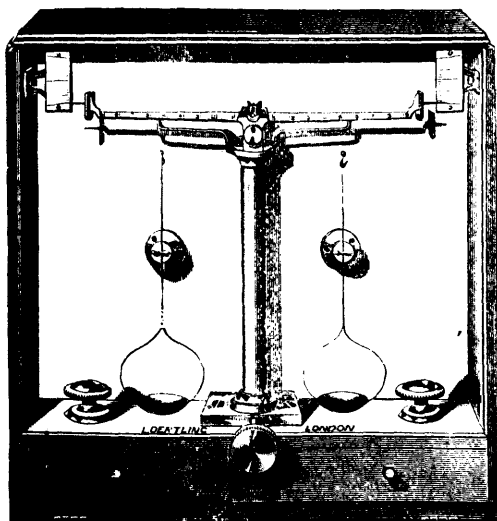
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NOTICE -Sixty days after date I intend to make application to the Honourable the Chief Commissioner of Lands and Works for permission to purchase one hundred and sixty (160) acres of land, more or less situated in Coast District, east side of Kitamaat Arm described as follows:--Commencing at the south-west corner post of the Kitamaat Indian Reserve (on which the village is situated); thence 40 chains east; thence 40 chains south; thence 40 chains west; thence 40 chains north along the shore to point of commencement.

F. M. H. RALEY.

Dated at Kitamaat, 24th March, 1898.

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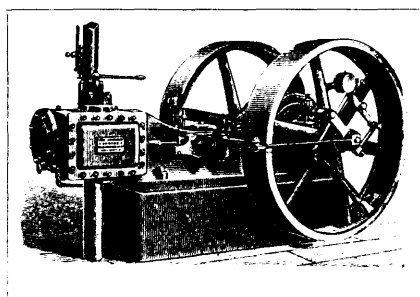
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HIS HONOUR the Lieutenant-Governor has been pleased to make the following appointments:

17th May, 1898.

LEONARD NORRIS, of Vernon, Esquire, J.P., to be Gold Commissioner within and for the Vernon Mining Division of the Yale Electoral District.

CHARLES A. R. LAMBLY, of Osoyoos, Esquire, S.M., to be Gold Commissioner within and for the Kettle River, Osoyoos and Grand Forks Mining Divisions of the Yale Electoral District.

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AMOUNT AND VALUE OF MATERIALS PRODUCED 1896 AND 1897.

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

Production for 1890, \$2,608,608; for 1896, \$7,146,425; for 1897, \$10,455,268.

GOLD.

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

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

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

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

SILVER-LEAD.

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

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

COPPER.

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

COAL AND COKE.

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

SMELTERS AND RAILROADS.

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

CAPITAL.

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

MINERAL LANDS.

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

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

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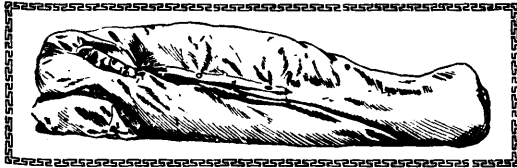
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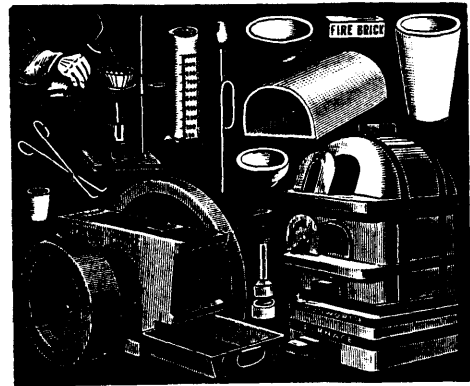
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The Mining Record.

Vol. IV.

JUNE, 1898.

No. 6

BRITISH COLUMBIA MINING RECORD.

Devoted to the Mining Interests of British Columbia.

PUBLISHED BY
The Mining Record Limited Liability.
ADVERTISING RATES ON APPLICATION.

H. MORTIMER LAMB, *Managing Editor*,
London Office: Leadenhall Buildings, London, E.C.

SUBSCRIPTION TERMS:

Canada and the United States, one year - - \$1.00

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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 57, Victoria, B.C.

THE MONTH.

TIMES in West Kootenay, but particularly in the Slovan districts, have been somewhat depressed for the past few months, but recently the indications have been very marked that a gratifying change in the condition of affairs may be shortly looked for. At

the more important mines in the vicinity of Sandon and Nelson, the forces of workmen are being increased, and many properties are being equipped with large machinery plants. The ore shipments, too, which have fallen off considerably, since March,

WEST KOOTENAY, owing chiefly to snow-slides and blockades, and the impassable condition of the roads, will, we are led to believe, make a decidedly respectable showing hereafter, especially as one of the principal producing mines, the Slovan Star, is again making regular shipments. It cannot, however, be expected that the Slovan—despite the extraordinary richness of the lead ores of the district—will enjoy complete prosperity as long as the costs of freight and treatment are as excessive as they are at present. An eminently sensible move was made when delegates were sent from Kaslo and Nelson to submit this important matter to the attention of the Federal Government, and notwithstanding the lateness of the session, as a result of the strong representations made by the members of the delegation, there is a decided probability that a commission will be appointed to enquire into the question with a view to its future and early adjustment. But even if the remedy, as suggested, of the imposition of a prohibitive import duty on lead and



VIEW ON THE SKEENA.

lead products is recommended by a commission, we are inclined to think that if an alternative whereby a reciprocal arrangement would be effected with the United States for the removal of the existing duty on exported lead-ore and bullion presented itself, such a method of bettering the lot of the lead miner in the Slocan would appeal more nearly to the principles of the Administration at present in power at Ottawa—particularly, too, as by the latter plan fewer complications from conflicting industrial interests would arise. Besides the difference in freight charges on the carriage of crude ore and bullion exported—perhaps, however, not a very considerable amount—the local smelting could be further protected or encouraged along the lines projected some three years ago by the late Government, whereby a bonus on ore locally treated would be paid. That the bonus offered then of fifty cents per ton was inadequate, accounts for the fact that advantage was not taken of it. But there would seem to be no reason why the lead interests in the West should not be as liberally fostered as the iron mining industry of the East. Meanwhile the agitation cannot but be productive of some beneficial results, and it is not far off the mark to say that any change in the conditions would be for the better. But if a satisfactory solution of the problem in respect to cheap smelting in the Slocan has yet to be worked out, apparently, in the Rossland Camp, the treatment of ores is steadily being reduced to the minimum cost. Where, a short time since, it was announced that the charges, per ton at the Trail smelter would not exceed \$7.50, which included the price of railway haulage from the mines, this was rightly looked upon as a remarkable reduction; but before the close of the year the new railway will be completed from Lethbridge through the Crow's Nest Pass, and East Kootenay coke of an excellent quality, will be supplied to the West Kootenay smelters at considerable less than half—probably at one third—the price heretofore asked for the Welsh or Pennsylvania products, or even for the inferior coke made from Wellington, Washington cretaceous coal. Consequently in the treatment of a ton of ore a saving will be effected in the cost of fuel of at least \$1.50, and a corresponding reduction in the charges asked to mine-owners, may be expected. In anticipation of the inauguration of cheap smelting, the accumulations of ore from many of the larger mines, including the War Eagle and Centre Star, have been held in reserve for some time past, and these, now, together with the product from mines of lower grade ores, will be shipped to the smelter directly the improvements being carried on at the works are completed in July. The cost of mining in the Rossland camp is also very much less than it was a year ago, owing chiefly to the facilities furnished for operating machinery by water instead of steam power, and as a result, development work will be in the future more extensively prosecuted. Capital, principally British, is meanwhile being invested freely in this district; in short, never in Rossland's history have the prospects appeared brighter or more promising.

Estimates widely varying as to figures continue to be made regarding the Yukon's probable production of gold resulting from the present season's operations in the far north. Men, however, upon whose opinion some reliance may be placed, generally agree in computing the value of the yield for the year at between six and ten million dollars, but even if these more moderate expectations are realized the richness

of the gold fields will be indisputably established. It is true that such an output would appear very insignificant if compared with the production of California during the first year of the gold rush to that country in 1850, or with the yield from New South Wales and Victoria in 1851, but it would be manifestly both absurd and unfair to draw parallels on such lines. Peculiar climatic and topographical drawbacks present great difficulties to mining and prospecting in the Yukon; and while perhaps as many as ten thousand persons are now in the country or on their way thither, it may be safely said that not more and very likely less than one-tenth of that number own claims or are yet engaged in actual gold mining. Owing, therefore, to the shortness of the season those claims only discovered previous to this year and developed during the past winter will contribute in any appreciable amount to the Yukon production for 1898, and the output from these must be necessarily limited by the obstacles in the way of rapid operation. But in one sense these very disadvantages may prove beneficial. In California the rich placer diggings were practically exhausted in the short time of two years, for the reason that the recovery of gold was attended with so little difficulty, and in 1851 placer mining in that State was followed by hydraulic mining. But in the Yukon it is questionable whether hydraulic or even lode mining will ever be successfully undertaken, and when the placer mines are worked out the country will be, to all intents and purposes, valueless. At the slow rate of progress, however, which is alone possible in the working of placer ground in the Klondike regions, it must be many years before all the gold is recovered from the rich creeks already discovered, and other valuable finds are likely, of course, to be made as time goes on. Thus it can be reasonably expected that the output of gold from the new El Dorado, without being in any way phenomenal for at any rate some years to come, will every season show a decided increase, and mining will continue over an extended period. The effect meanwhile on the public, if as we anticipate the gold production from the far North falls far short of the general expectations, will be in many ways salutary. Obviously much of the wild excitement of last autumn and this spring was mere froth; comparatively few have joined in the so-called "rush," which, after all, has developed into a tame enough affair; and a goodly proportion of the Klondike company promotions in London have been still-born. Yet the Klondike boom is doubtless responsible for many ills and miseries—a sufficient number, in fact, to have done a more portentous financial fluster credit—and if we have seen the last of it, perhaps, so much the better. But though matters may thus quiet down, the last has certainly not yet been heard of our northern gold fields. Mining will continue to be carried on, and the output year by year will materially add to the general prosperity of the Dominion. The fact that conditions in the far North are not favorable to company enterprise will shortly become recognized by the failures in this direction that inevitably must ensue in most instances; but we do not believe that this will be detrimental to the interests of British Columbia in London, or check investment in the province's mines. On the contrary, the Klondike discoveries have aroused an interest of a very useful kind in the resources of Western Canada, and it will be our own fault if we cannot turn that interest to advantage.

THE
YUKON'S
GOLD
PRODUCTION

Several of the leading London financial papers have of late predicted a boom this year in British Columbia mining stocks on the English market.

A
"B.C."
BOOM.

If by this it is meant there will be a repetition of the epidemic of virulent speculative mania which first in connection with the Rand, and later with Westralia, broke out in England, it is to be hoped that these rumours are entirely unfounded. Both the South African and the West Australian booms, while benefiting, of course, the stock manipulator and the shrewd company promoter, proved damaging to a degree to the industry of legitimate mining in these countries, and it may be confidently added that at any rate in the case of the latter, the Colony has not yet recovered from the ill effects of the wild-cat promoting and mischievous stock-juggling incidental to the Westralian boom in London of two years or so ago. But there is little to be gained by "borrowing trouble," to use a homely phrase, and we are much more inclined to

believe that if British Columbia is to suffer the evils of a boom of the character described, the time is yet sufficiently far distant to render present anxiety on this score quite unnecessary, for, while a boom in mining shares of a country may subsequently assume absurdly unwarrantable proportions, in the first instance there is generally a just cause and a substantial reason when the flattering but not altogether desirable compliment of a boom is thus paid to a distant gold

fields. Before South Africa came into prominence, the annual production of gold therefrom was already very considerable, and the country included amongst its mines a large number that were regularly paying handsome dividends to shareholders. West Australia was also in a much more advanced stage of development at the time of the boom in London than are the principal mining camps of British Columbia to-day. The lode-mining industry of the Province, it must be remembered, is hardly yet ten years old, and although an astonishing progress has been made in this short space of time, the value of the output from West Kootenay mines being now not far short of one million dollars a month, still very few of our mines, comparatively speaking, can be said to have been placed upon a dividend paying basis in the true sense, and before there can be a London boom in B.C. stocks a larger proportion at least than at present of these stocks must be of realizable value as investments,

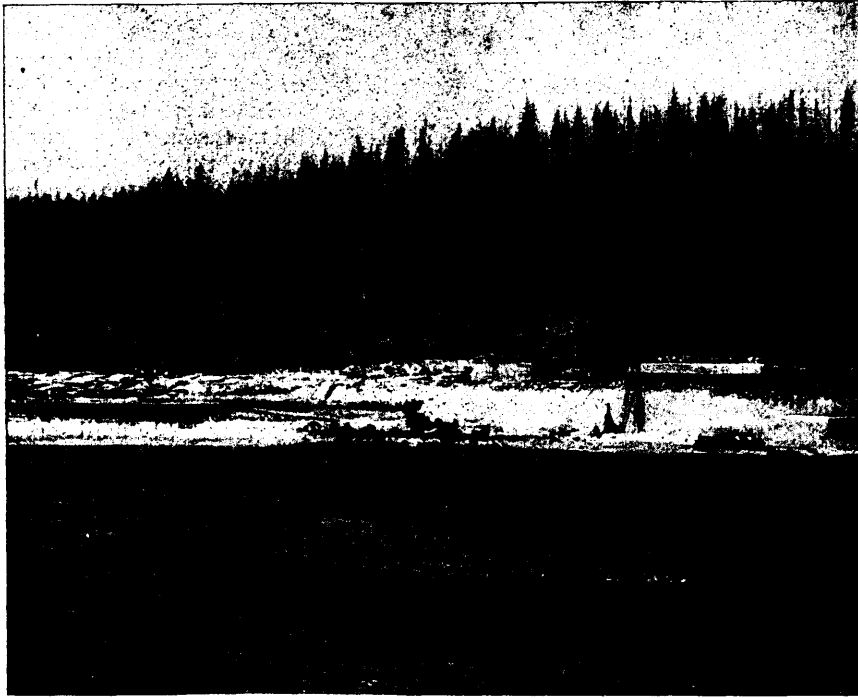
apart from their speculative qualities.

On the other hand it is gratifying to be able to say that London capitalists are beginning to evince a much more decided interest in the mining of this country, and we may, therefore, hope to see English capital invested more freely this summer in provincial mining ventures than in the past. If then this is the likelihood to which reference is made as the possible "British Columbia boom," it will be most heartily welcome. As the pioneers of enterprise in the Kootenays, the Americans are deserving of our warmest gratitude, and the present flourishing condition of the provincial mining industry is very largely due to them, but the time has now arrived when for means to operate our mines upon a larger and more pretentious scale we must look to Great Britain.

From one point of view the sale—to be formally confirmed by the original shareholders in a few days—

of Rossland's great mine, the Le Roi, to the wealthy British Company represented in the province by the Hon. C. H. MacIntosh, is by far the most noteworthy occurrence of the present year. Its importance, of course, does not rest on the point that henceforward dividends will be payable in London instead of in Spokane; nor will the province receive directly any more benefit from the operation of the mine by English than by American owners. As before, the greater

part of the mine's products will probably be shipped for treatment to the Northport, Washington, smelter, which also becomes the property of the British-American Corporation; and except that, perhaps, the mine may be worked later upon a somewhat larger scale, there will be no further advantage to Rossland beyond that already existing, from the fact of the location of the mines in its vicinity. But the profits from the Le Roi will undoubtedly strengthen the financial position of the B.-A. Corporation, and as largely upon the successful operations of this important company the immediate recognition of the province's possibilities in Great Britain depend, too much importance cannot be attached to the moral—we use the word for want of a better one—effect the sale will necessarily have on the London market. There is no reason at all to believe that, as in the past, the Le Roi will not continue to yield large monthly profits; and as very probably the B.-A. Corporation will market



THE GOLDEN RIVER QUESNELLE CO.'S ENTERPRISE—THE SITE OF QVM.
(From a photo taken last year).

the products from at least two other of its Rossland mines, the company should be in a position if not at present to pay dividends, to at least continue its exploratory operations and developments without drawing further from its capital account for this purpose.

Dr. Crookes, F.R.S., whom Dr. Emmens cited as one that could give corroborative evidence in support of his claim of ability to convert silver ore into gold, has written to the English mining journals, accusing the American scientist of discourtesy in publishing private letters of his, Dr. Crookes', and of doing what is worse, namely, garbling such letters by omitting important qualifying points from them when so published. Dr. Crookes has tested Dr. Emmens's alleged discovery, but after many abortive trials of the latter's process, has wholly failed to convert any silver thus tested, into gold. The celebrated English scientist therefore wholly discredits Dr. Emmens' theory, that gold and silver are two variants of a changeable metal, which the American experimenter calls "argentanrum." There is consequently, as yet, no sufficient grounds for belief that Dr. Emmens has, by a wonderful discovery of a new element, capable of assuming the form, either of gold or silver under different circumstances of production, solved the world perplexing silver question. Dr. Crookes evidently thinks that Dr. Emmens has a "bee in his bonnet."

As was to be expected, Mr. Taggart's paper, the *Mining Critic*, takes great exception to the remarks we considered it to be our duty to make last month in reference to the so-called British Columbia Chamber of Mines, and to do the *Critic's* able editor justice, in his reply to what he stigmatizes as the MINING RECORD'S "apparently inspired venomous attack," he makes the most of an undeniably weak case, by some clever special pleading, wherein he warily refuses to come to the point. The fact is that the RECORD'S position is quite unassailable, and no one is better aware of the fact than Mr. Taggart and his editor. However, we do not see that anything is to be gained by entering into a controversy with the *Mining Critic* on the subject of the Chamber of Mines' right to be considered a popular and representative institution, and we do not propose to do so. If proper steps are taken—and we submit that up to the present time this has not been done—to place the Chamber on a useful basis, last month's criticism will have effected what was hoped from it, and we shall be the first to offer our congratulations and support to the promoters, Mr. Taggart included. The appointment of a permanent secretary, skilled in the compilation of mine statistics—one having had experience in the office of some existing and well established Chamber of Mines in preference—would be a move in the right direction. This, and the election of mining men of recognized standing and unimpeachable reputation from each district and section of the province, to undertake executive work, would speedily place the Chamber in the position it is anxious to occupy, and win for it the recognition and respect of the mining community—a consummation, let us say, devoutly to be wished.

Meanwhile, we are glad to learn that Mr. Howard West, A.R.S.M., Secretary of an older established society, the British Columbia Mining Institute, is working assiduously in order to bring about a successful summer meeting of the Association. The Secretary

hopes to be able to arrange as a special feature of the proceedings in connection with the reading of interesting papers contributed by members, excursions to the principal mines for those attending. Nothing yet has been definitely settled with regard to the carrying out of the programme, but we hope to be able to give fuller particulars next month.

The mining community of the province will, we think, join with us in congratulating the Government upon securing the services of so well qualified a man as Mr. W. F. Robertson, of Montreal, as Provincial Mineralogist—the office until recently so ably filled by Mr. W. A. Carlyle, now superintendent of the British America Corporation at Rossland. Mr. Robertson comes highly recommended by Dr. Dawson, the head of the Geological Survey, and other prominent Eastern mining authorities. He is, moreover, like Mr. Carlyle, a graduate of McGill College, and also, like his predecessor, gained an extensive practical experience in the United States. The Minister of Mines, Col. Baker, left Victoria on the 27th of the month, to meet Mr. Robertson, who will at once commence active work in the field.

It is to be hoped that the Postmaster-General will take immediate steps to provide Omineca with a mail service this season. Last summer the miners and prospectors in this district were obliged to depend upon the arrival and departure of occasional pack trains for postal facilities, and it is hardly necessary to point out that this state of affairs proved anything but satisfactory. Already a large number of prospectors have gone into Omineca this spring, and from all accounts the season will be a particularly active one; hence the requirements in the matter of adequate mail facilities will be the more urgent. The Hudson Bay Company have a line of small steamboats on the Skeena, and a monthly mail service to Hazelton could therefore be supplied at no very great expense to the Department.

Some months ago, when Mr. Ogilvie left Canada to lecture in England on the subject of the Yukon gold fields, we ventured to express the opinion that his mission thither would not be productive of the best results; that promoters of wild-cat schemes would take undue advantage of his utterances; that the Klondike had then been sufficiently boomed, and perhaps over-rated in Great Britain. and, finally, that it was questionable whether Mr. Ogilvie could give the British public any fuller information about this new El Dorado than had been already furnished them through the published reports in the English press of his Canadian lectures. Events have since proved that this view was, generally speaking, correct. In the prospectus of more than one recent promotion of shady appearance, unwarrantable use has been made of Mr. Ogilvie's sayings, and a notable instance is afforded in the case of the concern entitled the Klondike Gold Fields Limited. This Company propose to acquire four claims on Bonanza Creek,—“the gold in which is estimated to be worth \$28,000,000”—and ground on Eldorado. The prospectus quotes a statement of Mr. Ogilvie's with regard to the richness of Eldorado claim No. 5 to prove the value of Eldorado Bench claim No 5—a rather different pair of shoes, as Mr. Ogilvie in a letter to the *Times* points out. In fact Mr. Ogilvie has had lately thrust upon him a tremendous amount of work of this nature, and as the

Westminster Gazette, a leading London journal, plaintively notes Mr. Ogilvie's lectures are becoming a little wearisome, adding that "he seems to be doing more harm than good, exciting cupidity with his wonderful stories and yet saying that no importance is to be attached to them." In this, however, the lecturer is scarcely to be blamed. It is quite certain that he merely relates what he knows or believes to be facts, and if his statements had no other significance than attaches to the history of an explorer's experiences in an unknown country there would be no ground at all for criticism. The fact remains, however, that Mr. Ogilvie's visit to England this spring was particularly ill-timed.

The interesting statement is made that as a result of the reduction recently effected in the nominal capitalization of the Channe Mining Company, from one million to two hundred and fifty thousand dollars, the demand since for

the Company's stock has considerably increased—one record of a day's sales amounting to two thousand shares at par being instanced. This story is very likely correct, and there can be little doubt that if other concerns of the same class—or, to describe them more accurately, over-capitalized companies owning however fairly promising prospects in the province—would follow the Channe Company's lead, the public would show a freer disposition to engage in this

kind of speculation. At present it is pretty generally a case between the investor and the over-capitalized company of "heads I win, tails you lose" for the Company or its promoters, and, naturally enough, the public having been taken in once or twice already has come to the conclusion that it is not good enough. But we are not at all in love with the western methods—introduced into British Columbia from San Francisco—of company capitalization, and we hope to see the English system yet become popular in the province. However, this is altogether too weighty a subject to discuss and dismiss in a paragraph, and we hope to deal with it more fully at a future time.

A bill "to relieve owners of mining claims who enlist in the military service of the United States for duty in the war with Spain from performing assessment work during such service" has been passed by the Senate of the United States. Someone facetiously asks if the Provincial Government could not be

induced to follow suit, in order to give the class of prospectors who are tying up large tracts of land by cheating the provisions of the Mineral Act an opportunity to go to the front and be shot.

The Kellie Truck Act has been warmly welcomed by labour circles in Rossland. There has, perhaps, been a little objection from some of the mine proprietors, and of course the smaller leeches dislike the dose of salt which forces them to free their hold. The notion is meanwhile current that if the labour employer simply allows a third party to act as nominal boarding house keeper, that the law will be thus evaded. If he does so in order to force the men to mess at the mine, he will be obliged to make it a condition of their employment. In such case the employer will bring himself under the operation of the law. If he does not, Mr. "Jack Straw boarding-house keeper" will find himself compelled to compete

with the legitimate businesses. Some of the employers aver that in boarding their men there is little or no profit, but if such be the case why object to the Truck Act? The B. A. C., as becomes a British corporation, are reported to be quite in sympathy with the Act, and a well-known American mine manager in Rossland has been heard to say that apart from the profits of the boarding-house, the men do better work if they are allowed a free hand in their domestic arrangements.

That is merely a confirmation of the old saw that "one volunteer is worth two pressed men."

Mr. Morris Catton, the well known London promoter of Klondike companies of a wholly speculative type, has been telling some marvellous stories to an after-dinner gathering of friends and admirers assembled at the Hotel Cecil, London. Amongst other things he said that the Klondike was an ideal land for labourers, as they could there make one thousand pounds a year. He did not, however, tell his hearers that labourer's wages in the Yukon are on the decline, and that he was assuming some 300 working days in the year, whilst an average Klondike mine-worker would probably labour less than 200 days. Nor did Mr. Catton add that, large as seem Klondike wages, the bulk of them are absorbed by the purchase of the necessaries of life, whilst the balance by no means overpays a man for the extreme hardships endured. Meanwhile the high cost of labour and work-



GOLDEN RIVER QUESNELLE CO.'S ENTERPRISE—DAM UNDER CONSTRUCTION.
(From a photo taken last year).

ing eats up the proceeds of some even of the richest claims in the Yukon. Thus Inspector Constantine states that some of the owners of the best claims on Eldorado Creek have found themselves, after paying for labour, no wealthier than if themselves had meanwhile worked on "lay" wages.

The French Government has evidently, after investigation, concluded that the Klondike is not a gold field good enough to justify much Gallic emigration. Monsieur Barthon has, it seems, addressed an official circular to all the Prefects of the French Departments, bidding them warn would-be French emigrants against specious announcements regarding the Klondike gold mines. Monsieur Barthon also asserts that there is an enormous disproportion between the Klondike profits that are promised and those likely to be gotten, and suggests that there is in many cases, an almost entire impossibility of working the mines.

It is stated that a condition of the Le Roi purchase is that the mine shall remain in the hands of the vendors for ninety days. Assuming as would seem to be the case, that this provision carries the retention of *interim* profits, it adds at least \$150,000 to the sum receivable by the sellers, and adds correspondingly to the \$3,000,000 paid for the mine and its appurtenances. The British America Corporation's managing director in B.C., the Hon. Mr. Macintosh, is naturally very jubilant over the deal made, claiming by a policy of masterly inactivity to have reduced the price of the mine by some \$2,000,000, the sum of \$5,000,000 having been first suggested by the vendors as the amount at which they would sell.

Mr. McGregor, of Nanaimo, as a thoroughly capable man, has been appointed to the position of Inspector of Mines in the place of Mr. McDonald, who recently resigned to enter the service of the British America Corporation. It is a rather noteworthy circumstance that so many important and responsible posts in connection with mining and mine management in the Province, are filled by Scotchmen, or Canadians of Scotch ancestry.

On dit, that further litigation threatens the Golden Cache Company, about the future of which few in Vancouver seem to be very sanguine, there being a widely prevalent opinion that the richer deposits of the mine are somewhat small in amount and exceptional in character, the bulk of the ore being of low grade. It is to be hoped that with the extensive further developments now being made at the mine, with the aid of an apparently excellent plant and appliances, these generally prevalent doubts may be dispelled, and the mine found a fair middle grade proposition, as an even partial failure of the Golden Cache to yield fair returns after further and sufficient tests, will give a bad set back to quartz mining in Lillooet, generally, by preventing the incoming of British capital, whereof the Golden Cache has latterly absorbed quite a respectable amount, as a result of the Oldroyd speculation.

The strange news comes from Wales, on apparently fair authority, that very rich free milling gold has been found near Bala Lake, in conjunction with large deposits of manganese. Two assays give, it is stated, in one instance nearly twelve ounces of gold to the English ton of 2,240 pounds, and in the other four ounces of

gold. If these assays should be found to be even moderately representative of ledges in the district in question, North Wales will have quite a gold boom, and not only this, but secure a most valuable addition to the local industries. Bearing in mind, however, the smallness, and, in several cases, actual absence of profit resulting from free milling gold operations in South Wales, few will be very sanguine as to the outcome of these alleged finds of rich gold bearing quartz in another district of "gallant little Wales." The only result may indeed be the formation of a few more or less dubious companies, by some of the many financial tricksters that live and thrive in and to the disgrace of the city of London. We would fain see the Cymric principality become one of the world's gold producing districts, but it appears almost too much to hope, though undoubtedly in the times of the Romans the native Britons got small quantities of gold from some of the rocks and gravels of creeks and riversides of Wales, as also from certain parts of old England. But it has been generally supposed by scientists that nearly all the profitably obtainable natural gold of the United Kingdom, was got out centuries ago.

Says the London, Eng., *Mining Journal*: "The Almaden Quicksilver Mines have come suddenly into international prominence in consequence of the war. The chief factors in the new Spanish Budget are an additional provision for the Navy, which is raised from 18,000,000 pesetas, or, say, £720,000, to 90,000,000 pesetas, or £3,600,000. The new Budget authorizes the Government to raise the needful additional funds by the sale of the Treasury bonds, guaranteed by the Almaden Quicksilver Mines to the nominal amount of 100,000,000 pesetas, or, say, £4,000,000 (four millions of English money). The property of these mines is at present hypothecated to the Rothschilds, and although their claim will, it is understood, run out in another year, it is, we should imagine, rather doubtful whether this mining security is worth as much as 4,000,000 sterling. But the Spanish Government must raise money somehow. It has been calculated that Cuba alone costs Spain an average of £2,000,000 (two millions of English money) a month, and that expenditure is more likely to increase than otherwise now that Spain has two foes to contend with instead of one. The effect of this latest use of the quicksilver mines of Spain upon the quicksilver market remains to be seen. It looks as though the mines were about to revert to the Crown, and as the Imperial owners will, of course, endeavour to render them as good a security as possible, the probability seems to be that quicksilver will go up in price. We should advise speculators, therefore, to keep an eye upon this commodity, and to buy for a rise. At present it is reported steady at about £7 2s., but it will not be steady long." From which it would seem that if the cinnabar deposits in the Savonas district and elsewhere, prove nearly so rich as generally asserted by those concerned, and also become well worked, British Columbia ought soon to be able, with the introduction of sufficient outside capital and skill, to add profitable quicksilver getting to the lengthening list of her mining industries.

We have already had occasion to refer to the manner in which a recent British Columbia promotion yclept the Associated Gold Mines has been over-boomed and its properties over-rated in England. Before it was a gentleman writing the initials "L.L.D." after his name, who took upon himself the

task of misrepresenting—in articles contributed to the leading London illustrated papers—the value of this concern's two-for-a-penny prospects, and now, seemingly, Mr. T. R. Hardiman, a so-called mining engineer from Vancouver, is playing the same game, only with variations. A recent issue of the *Financial News* contains an account of an interview between a representative of that journal and this Mr. Hardiman. The interview makes decidedly interesting reading, and Mr. Hardiman quite succeeds in doing what his interviewer states he appeared "agreeably disposed" to do e.g. he throws "an additional ray or two of light on mining in this province." Indeed, Mr. Hardiman brings apparently an X-ray to bear, for in spite of all his clap-trap talk of Le Roi dividends and his common-place remarks about the richness of the British Columbia mines—some of them true enough, perhaps, but trite for all that, the skeleton of this precious "Associated Gold Mines of B.C., Ltd.," is sufficiently discernable. As we have already pointed out, this company is making a great mistake in allowing its bona-fides to be called into question by the adoption of foolish boom methods, at any rate at the present decidedly critical stage. They have acquired a number of prospects, nearly one hundred, we are informed, in good localities, but the time to boast about the value of these should surely be after they have been proved to be mines. The way Mr. Hardiman talks about \$100,000 assays is really deplorable, but then Mr. Hardiman is by trade a picture dealer, and not a mining expert, and in the two or three years he has spent knocking about mining camps has not learnt that business methods which might possibly be applied to the one calling are not altogether desirable in the other.

The last session of the seventh Parliament of British Columbia, was brought to a close on Friday the 20th of May. This session has, in many respects, been one of the most important in the history of the Province, and notably so far as the mining interests are concerned. The day before prorogation, the Premier, the Hon. J. H. Turner, in an address to the House, was able to announce that work had actually commenced upon the construction of a railway to Boundary Creek from Robson; that a line from the Columbia River to the Coast would be completed within a measurable space of time, and that the Yukon trade would be secured to the Province by the speedy building of a road from a point on the British Columbia sea coast, to Teslin Lake. While still holding to the view we have frequently expressed through the MINING RECORD, that the railway policy of the Provincial Government is open to criticism, and that the system of bonusing is wrong in principle, the bargain made by the Legislature with Messrs MacKenzie & Mann for the construction of the Kitimat-Teslin railway has a great deal to commend it, and the fact that the Province is to receive in return for the aid granted a royalty of four per cent. on the gross receipts of the line, being at least some sort of recognition of the principle which we have striven to uphold.

Again, although some have contended that the matter of granting aid to a Yukon railway enterprise should have been left in the hands of the Federal Government, the construction of the Kitimat railway will directly benefit British Columbia—more especially probably, the Coast cities, but nevertheless the whole Province, for the well-being of the Coast cities will contribute to the well-being of the mining districts.

For the construction of the Coast-Columbia river, the same subsidy is offered this year as last, but the company building the line in consideration of the cash bonus will not receive the land grant, and hence the territory reserved for the Columbian & Western will doubtless revert to the Crown. We should, of course, have preferred to have been able to state that the terms upon which the bonus was given to this Coast line, were similar to those submitted to and accepted by Messrs. MacKenzie & Mann, for the building of the Yukon railway, but it is at least consoling to know that by the rapid mining development which must follow the operation of a railroad through the Boundary Creek district that the general prosperity and wealth of the province will be enormously increased.

The amendments recently introduced to the "Companies Act, 1897," are chiefly of a technical character, very few radical changes having been made in the law. This may, perhaps, be regarded as a satisfactory indication that the Companies Act of last year has filled all requirements, and that the contentions made by many who opposed the passage of the original Act, that it would prove unworkable, were groundless. At the same time we venture to express the opinion that one or more further changes or additions might this session have been advantageously made, particularly in reference to company accounts, and six-monthly balance sheets.

A correspondent writes to the *Mining Record* from London complaining that the criticism which appeared in the April number of this journal, in respect to the Imperial Institute, was not altogether just. "It is proverbially difficult," he meanwhile submits, "to make bricks without straw," and adds, "take for example the B.C. mineral collection in the Institute. This collection was sent over in 1891, and arranged by Mr. Begg for Mr. Beeton, a few additional specimens being, however, subsequently sent over from Chicago by Mr. Law, these representing the ores only of the Fairview and Boundary Creek camps. Despite all efforts from this side, the collection is practically quite unrepresentative of B.C. mining of to-day. Indeed, part of the collection even dates back from the Colonial Exhibition of 1886. Both Mr. Beeton and Mr. Vernon have made representations on the subject, and pending the arrival of the long-promised additions, the utility of the display has been, as you can judge, considerably hampered. That visitors from British Columbia should derive an unfavourable impression is, under the circumstances, hardly surprising. In 1895, Mr. Beeton, in order to obtain sufficient room for the exhibits of fruit, furs, fish, and other products which it was understood were coming, acquired more space. This was in 1895, and the display was temporarily arranged, pending the arrival of these additions. In September it was arranged that a number of exhibits of the above character should be sent on as soon as they could be prepared, together with complete collections of ore specimens from the West Kootenay camps. Since then, I presume, circumstances have necessitated delay, for we are still waiting. The Hon. Forbes Vernon has, I know, given the subject constant attention. To rearrange the old mineral collection when the new specimens might arrive at any moment, was superfluous, and, so far, the new specimens have not arrived. The present arrangement is certainly very unsatisfactory.

"During the past two years a large number of persons, including many from the city, interested in B.C. mining matters, have visited the Institute, but, unfortunately, except for a small collection of Rossland ores which were temporarily borrowed from Mr McMullan, and two or three samples lent by London houses, not a single specimen from any of the mines which have brought such renown to B.C., have been on view. But, despite this, I may say that the Curator, Mr. Harrison Watson, has done much to interest visitors in the mineral resources of the Province; and brokers in the city, knowing that he had personally visited the B.C. mines, have been in the habit of sending up clients to see him, and these have been succeeded by others. That much more could have been done with an adequate collection, there can be no doubt, but it is to be hoped that the long expected collection will now arrive, as Mr. Carmichael is giving the matter attention.

"That the Institute, hampered as it is for funds, has not been able to do all it wishes to, is to a certain extent true. That it is the "stamping ground of the aristocracy," is as ridiculous as it is untrue, and the fabrication of "Truth" and other imitators looking for "copy." If you will read the annual report just published, you will obtain a true index of the situation.

"When circumstances have permitted British Columbia to strengthen her display, I am sure that the Institute can do a good deal. In fact the County Institute's Journal and lectures have dealt so largely with B.C. that more than one publication has accused us of "booming B.C.'s gold!"

"The B.C. Government has, throughout, shown an interest in the Institute, and with the immense activity which the progress of the Province in the last few years has caused, the delay in obtaining collections of products in the face of so many pressing local matters, can be understood.

It is, however, unless the absence of these essential exhibits is explained, unfair to condemn the Institute and its management."

In the foregoing our correspondent certainly succeeds fairly well in shifting the blame for the unsatisfactory and unrepresentative nature of the exhibits at the Imperial Institute from the shoulders of the management to those of the Colonial authorities. In his letter he has referred more particularly to the miserable inadequacy of the exhibition in the Canadian department, but as a matter of fact the other Colonies are not much better represented. This, of course, does not excuse British Columbia's half-heartedness, and we can only express the hope that now the matter has been brought to the notice of the authorities, immediate steps will be taken to remedy matters. It will be noted that our correspondent does not attempt to deny the truth of our contention that had a site been selected for the Institute in the city instead of at South Kensington, the establishment would have filled a more useful purpose, and been decidedly more popular. Notwithstanding, if the Colonies will show, as they should, their interest in a practical manner, by forwarding representative and up-to-date specimen collections of exhibits to the Curator, there can be no doubt that the Institute will do much in return to make known in the mother country the resources and wealth of the Colonial possessions.

At a recent conference of Australian Premiers, the question of the coinage of silver by the Colonial mints arose. Seemingly, however, the importance attaching

to the subject was but little appreciated, for instead of a comprehensive discussion following, the matter was almost summarily disposed of in a few words of perfunctory comment. Unlike Canada, who by a provision of the North America Act has the right to coin her own silver, the Australasian Colonies must first obtain permission from the Imperial authorities before action in this direction could be taken, but that consent would be withheld, is to the last degree unlikely. With this exception, therefore, Australia is in much the same position as Canada. Both countries are great self-governing dependencies; in both a national, in contradistinction to but not apart from an imperialistic spirit is strongly evidenced, both—and this is the most important consideration of all—are silver producing countries. From the patriotic standpoint it is almost derogatory to the dignity of these countries that their coin should be minted away from home; from the practical standpoint it is absurd. Australia, it is true, mints her own gold, but in this operation there is a loss, or if not a loss, at least no profit, for the intrinsic value of the pound or sovereign is twenty shillings in gold, and English and Australian sovereigns are even sold at their face value in San Francisco, and reminted there into American gold pieces. In Canada both the English sovereign and the United States five dollar piece are legal tender, and hence, nothing from the practical point of view merely, of course, is to be gained by the mintage of our own gold coin, but in the case of silver the conditions are entirely different. As an Australian contemporary, the *Mining Standard*, shows, even when the white metal stood at 5s. per ounce the seignorage on it was twenty per cent. At its present rate of 22d. per ounce, the seignorage is therefore over sixty per cent. In other words, an ounce of silver, which costs 22d. per ounce, is minted at a cost of 2d. into coin passing current for 5s. 6d. This is the price which Australia, a silver-producing country, has been paying, and is still paying the Royal Mint for its silver coin. Canada's arrangement with the Royal Mint is more satisfactory, yet the profits made from the profits of Canadian silver and copper by the English Mint and a Birmingham firm, are enormous. When the Province's present Lieutenant-Governor was a member of the Senate, the important question of the establishment of a Canadian mint found in him a persistent and able advocate, but unfortunately since, little attention has been given to the matter. It is, however, to be hoped that the development and growth of the silver mining industry in West Kootenay, will have the effect of bringing more forcibly before the Government the advantages to be derived from the mintage of our own silver coin at home.

PUBLISHER'S ANNOUNCEMENT.

On and after 1st July, 1898, the subscription price to the B.C. MINING RECORD will be advanced from \$1.00 to \$2.00 per annum. Foreign postage additional. This applies to renewed subscriptions from the above mentioned date.

KLONDIKE MOONSHINE.

(By an Australian Critic.)

A GOOD many years ago, when the long lances of the Aurora Australis were quivering in a rosy fire mist, suffusing our southern sky, one midnight some old-fashioned Welsh miners, with whom I was a good comrade, ventured on a discussion as to the cause of that crimson haze, its flashing spears, and waving pennons. One said: "It is a sign of war, look you! That is the blood, see! And the other things, look you!" Another one objected to such an interpretation, probably on account of the superstition it contained, and observed: "Damme! That is nonsense, I do know; look you! See! You are a fool! Look you! That is the reflection of the moon shining on the Red Sea."

If one is asked to-day what has kindled such golden fires in the region of northern lights to dazzle the imagination of so many of our people, well, the explanations of my old comrades, given above, is just as sound as any that the press have to offer us so far. Anything headed "Klondike" serves to feed the popular mind. We get tales of Klondike written in London or New York by men who have just left off writing Deadwood Dick stories for slum audiences to take up this profitable line. London illustrated papers give us Cockney conceptions of roughing it in Arctic snows, that are probably derived from stage versions of the Wandering Jew or Mr. Albert Calvert's "Discovery of West Australia." We even had the Australian press solemnly repeating the veracious tale of one Patrick Galoot, of Ballyvaughan, to a long-eared Kerry editor, telling how Paddy brought £3,000,000 home in his pockets; how he employed 700 men in alluvial mines about 3 feet in depth at Bonanza Creek, Klondike; how 600 tons of gold were got in that creek by merely shovelling it up, etc. But he did not state why his 700 employees did not do a little fossicking on their own account, instead of working for wages. Perhaps they did not like to offend such a great man, for fear that he might buy Ireland from the British and only allow his faithful servitors to dwell there. Turn to the steamboat companies' advertisers of reckless statements as to gold won in the Arctic Eldorado, that differ by a few hundred thousand ounces in the same column. One may search the papers in vain for any information that will bear scrutinizing in daylight.

Of all places that are unlikely to afford a glimpse of truth as to the value of Klondike alluvial, a London company's prospectus is not one that will be suspected of giving away such a valuable fact. Yet in one such document I find that which I have been seeking for about twelve months past. The result is as follows: A Mr. Sola, who is a vendor of some shallow alluvial claims in the heart of the best known creeks, and who is stated to have three and a half years experience of the Yukon, states that the prodigious amount of 120z. of gold was washed out of two tons of gravel in Last Chance Creek. He mentions how, with his mates, he sunk several holes about four feet deep, but omits to say if they raked all of the bottom off. Mr. Ogilvie, a surveyor, whose pen-and-ink calculations of the millions that *are to come* from each creek adorn every prospectus and every gushing article of a truth-seeking press, makes the following cold-blooded statements a base for his £70,000,000 pyramid, which he expects two little creeks to return in gold. "One man told

me yesterday that he had washed out a single pan and found \$14.25 in it. Of course that may be an exceptionally rich pan: \$5 to \$7 is the average on that claim." That is to say, if it were Ballarat gold—it is not so valuable by 26s. per ounce we are told—5 to 7dwt. to the dish is a wonderful average, and 14½ dwt. a stupendous find according to Mr. William Ogilvie. Now, I do not deny that 7dwt. to even a fathom in such shallow ground would be a good average claim to be owned by working men. But if such a screech can be sent across the oceans about such mean little eggs as 5dwt. to the dish, what may we expect if the Klondikers get an ounce to the dish? Supposing Mr. Ogilvie, new chum at gold mining, had been sending notes of the same kind from Ballarat, say, for example, when the Canadian Lead was first opened, 10, 20, 30 and 40lb. weight of gold to a little American bucket—about a dishful in fact—was not an uncommon return from the best claims there. One witness, with whom I am personally acquainted, says even 7½lb. weight or more was brought up in one bucket. A Mr. Ogilvie would have produced his pencil and written, "Saw 900 oz. washed from a single dish to-day. If we give nine or ten pans to the cubic foot" (these are his own words), etc., "we get 9,000 oz. to the cubic foot. But, reducing this to one-fourth, we may expect to get . . . millions of billions in a few years," etc. Yet the total gold product of the Ballarat District in forty-five years is only valued at £72,000,000, but even that amount is about £20,000,000 ahead of all New Zealand. In ten years from the date of the gold discovery in Victoria about 400,000 persons were added to its population. But the Klondike boomers talk of that annual average having booked for one season's shipment.

Old Victorians will well recollect that even 40,000 arrivals per year in the country of the richest gold finds that are known to history, was far more than the diggings could maintain. I well recollect as a boy how eager was the cry for public works to be started. Even soup kitchens were opened in Geelong and Melbourne to relieve the distressed people, when many thousands were flushed with hope, and more with solid gold, than in their brightest dreams they had hoped for. How, in the face of all this experience, can a mad rush of so many thousands of men to the frozen North succeed at all? Even granting that the Klondike fields are ten times richer than the facts now in our possession show them to be, if the boomers are not lying about the number of passages taken already, in the unscrupulous manner that all else is lied about and magnified in order to get people's money, then we are facing one of the greatest disasters known to modern times. Not since the crusading days has such an army of men been filled with mad enthusiasm to reach a goal with no certain reward in view, except distress and death. There was a chance for plunder on the road for the ignorant crusader, and a fair fight in view if he met the Saracen. For many of our people there will be bitter disappointment for the strongest. The weak will be trampled into the filthy snow by the hoofs of a frantic multitude retreating from their Alaskan Moscow. Cannibalism was known to have occurred among the frozen camps in the Rockies during the rush to California, and men died there in no fair fight. We can but hope that our countrymen may be permitted in their extremity to dine off some of the liars who are now shouting "make your fortune at Klondike."

The Summary Report on the operations of the Geological Survey of Canada for the year 1897, just issued, affords further proof of the useful and excellent work that is being performed by this department, and in the report Dr. Dawson, with pardonable satisfaction quotes the high tribute paid to the Geological Survey by Professor Roberts-Austen, Chemist and Assayer to the Mint, who, in his lecture on "Canada's Metals," at the Massey Hall, said: "Then let us set down our admiration for the work of the Canadian Geological Survey. Considering the means at its command, and the positively inconvenient extent of its territory, it is marvellous how much has already been accomplished, and how clearly the general structure of the country

of the par value of £1, were placed on the market, and at once subscribed for, the whole amount being fully paid up, and in the autumn of the same year, (1896), with this abundant available capital, preliminary operations were commenced at Quesnelle. The feasibility of the Company's scheme of damming back the water's of the South Fork of the Quesnelle River from the Lake, in order to recover the gold from the channel bottom, had been frequently discussed by "old-timers" in Cariboo, many years before, but the credit of working out the details, and of perfecting the plans for this bold engineering undertaking, rests with Mr. Joseph Hunter, M.P.P., to whom the satisfactory completion of the work under his personal direction,



NO. 1, A FULL VIEW OF THE DAM.
(Taken from side hill behind blacksmith shop).

has been brought out. It was pleasant to observe, too, how well its work was appreciated among the people for whom it was primarily intended, and how in the mining districts the geological maps we carried were quite familiar to the prospectors and mining people."

A PLUCKY UNDERTAKING.

OPERATIONS OF THE GOLDEN RIVER QUESNELLE LTD.

NOT quite two years have elapsed since the enterprise known as the "Golden River Quesnelle Limited" was successfully launched in London under the auspices of a gentleman who is now acting in the capacity of the Company's managing director, Major C. T. Dupont, of Victoria. Eighty thousand shares,

must afford the greatest possible gratification. Before, however, British capital was enlisted in this enterprise, steps were taken to thoroughly test the value of the gravel in the channel of the river, both by dredging and diving operations, and it was not until the very promising results of the experimental work became known that it was decided to engage in the enterprise of damming the outlet from the lake. Incidentally it may be mentioned, as testifying to the richness of the ground, that one man employed as a diver, obtained a bucket full of gravel from behind a large boulder, at a spot in the river where the current was running very swiftly, and extracted therefrom

gold dust and nuggets to to the value of fourteen dollars. "But (writes a representative of the MINING RECORD) I must proceed: Learning that Major Dupont had just returned from a visit to his Company's property on the South Fork of the Quesnelle River, I called upon him at his office on Fort Street, Victoria, hoping to gain some particularly interesting information from him regarding the progress of the work at the great dam. Nor was I disappointed. Major Dupont was exceedingly kind." "Well," he said, "the public have, it is true, been asking why they hear so little about us and our doings, but you see we do not approve of methods of booming. We have been working away steadily for some time, and the time

the affirmative, and suggested that possibly the readers of the MINING RECORD would also be glad to have such an opportunity. Thus Major Dupont good-naturedly allowed me to borrow from him the photographs which accompany this article.

"Here you see," he continued, "in this first photograph a view of the completed dam. The photograph really only gives you a very limited idea of the magnitude of the work. For instance the dam has a base of forty-six feet of gravel, puddled with clay, between this and the crib-work. The dam consists of five massive benches or stages, dovetailed and bolted together, with three-fourths inch square bolts, each from eighteen to thirty-six inches long. If you



NO. II, A NEARER VIEW.

has at length come when we may shortly look for results. We have spent a very large sum of money—about \$275,000—in building roads, purchasing machinery, and in the construction of the dam, but from the reports I have received from our mining engineer of the prospecting work that has lately been done since the dam was completed, we have every reason to be satisfied with the outlook."

"When do we intend to start active mining? Oh, directly the spring freshets are over, and then we will commence on a large scale. At the present time the gates are open to allow the water to pass away. But perhaps you would like to see some recent photographs of the dam?" To this question I replied eagerly in

put these bolts end to end, they would extend to a distance of nine miles. Then the whole is solidly bolted to piles, driven deep into the ground—from twelve to twenty feet deep, and loaded with stone and gravel carefully packed. The entire length of the dam is 800 feet, and it springs from a solid abutment on the north side of the river, and is built from thence in a curve, (the segment of a curve with a radius of 415 feet) terminating in an abutment on the opposite shore, against solid rock. In the next photo you see a view of the gates, nine in number, each rather more than twelve feet wide, with a lift of twelve to nineteen feet—the last in flood time. We have put over a hundred thousand pounds weight of iron and machinery

into these gates, and each gate is provided with flanged wheels running on heavy iron rails, and the lifting gear is particularly powerful."

"The third photo shows the raceway and a portion of the channel bed of the river, looking up-stream. The raceway is 900 feet long, 130 feet wide, and 22 feet deep. Our engineer tells us that we shall be able to keep the water dammed back in the lake, below the level of the dam, for 190 days in the year, which will give us, you see, plenty of time for mining."

"Do we intend to mine during the winter months? Well, that is a question for future consideration. The principal operations will, however, be conducted before and after the freshet."

"And what of the prospecting work you have done

banks and the melting of the snow, and notwithstanding that the dam-gates were closed, a certain amount of water continued to flow. This, however, will not interfere with mining work in the future, when the arrangements for complete drainage will be completed. In shovelling the gravel from beneath the water, as miners will understand, a good proportion of the gold was left behind. As a matter of fact gold could be plainly seen on the ground under the water when the men ceased shovelling. What the results will be when the bed-rock is cleaned up may be left to the imagination, but over the three miles of channel examined, in no instance were the results obtained less satisfactory than those above quoted. Our engineer states that, making a conservative estimate of the value of our



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NO. III, LOOKING UP-STREAM.

since the dam was finished?" I ventured to ask.

"Well," replied Major Dupont, "I have here our engineer's report, and I will read you an extract if you like. He says: 'The gates were closed at the commencement of April, and the bed of the river was prospected very extensively, not by panning, but by shovelling large quantities of gravel, from one to two hundred yards at a time, into sluice-boxes; and, without having reached bed-rock, or cleaned up any bed-rock, in every instance the most satisfactory results were obtained, returns giving from \$1.73 per cubic yard to \$9.10 per cubic yard.' This gravel was really dug from under water, the result of seepage from the

daily returns when we commence systematic mining, he places the net—well, I don't think that I will give you that piece of information just now. I have said, perhaps, quite enough for the present."

"Well, Major Dupont," I said, as I prepared to take my leave, "if your river is so rich as your engineer imagines it to be, you will be obliged to build a Chinese wall on either bank to keep trespassers off the premises."

"Yes, indeed," he replied, "but meanwhile we have contented ourselves with employing special constables to patrol our seven miles of river when the flood-gates are closed." And I was properly impressed.

IMPRESSIONS OF KOOTENAY.

(Continued.)

MY next stop was made at Nelson, but during the journey from Sandon, I learned that the formation changed very decidedly somewhere in the neighbourhood of Slocan City, where the prevailing country rock was granite, instead of argillites and porphyrites. Around Nelson I found that another change took place and that the eruptive schists occurred. It is in these that the ore body of the Silver King mine was discovered. I was unable to ascertain the extent of area through which these prevailed, from observation, but was informed by Mr. Davis, superintendent of the above-mentioned mine that the same formation was continuous for some distance westerly. Approaching Nelson by the Kootenay river the granites appear to predominate and to form the shoals and rapids which are such prominent features in that stream. In fact from casual observation I should judge that there are excellent opportunities for developing water power, without detriment to the big power I have referred to earlier in this article.

Apparently the smelter owned by the Hall Mines Co., which also owns the Silver King mine, is really the backbone of the town. There are, however, a great many locations of both gold and silver mines in the vicinity, the development of which will of course aid very materially in increasing the population and importance of the place, but at the time of my visit the Silver King and the Fern mines were the only two in active operation.

Preparations were being made though by Mr. Fowler, the consulting engineer for the British Columbia Gold Fields, Limited, to open up some of that company's properties, and engineers had just arrived from England to take charge of another property situated near the Fern mine. The probabilities are, therefore, that during next summer considerably more work will be going on around Nelson than heretofore.

Through the courtesy of Mr. Hedley, superintendent of the smelter, I was enabled to visit the company's works and gain some knowledge of the capacity of the plant which is used to treat 300 tons of crude ore daily. This ore is run into a copper-iron matte containing from 46 to 50 per cent. copper, together with the silver value in the ore, and the balance iron. This matte is refined on the premises, the silver and any gold being separated from the cop-

per and iron previous to shipment. The limestone used for flux is obtained from a locality about twenty miles up Kootenay Lake, above Nelson, and shipped down on scows at a cost in the neighborhood of \$2 per ton. The coke used in the smelter is shipped from Nanaimo, on Vancouver Island, and costs f.o.b. at the furnace \$11 per ton. During the year 1897, 47,560 tons of Silver King ore have been smelted, yielding 954,585 ounces of silver and 3,453,644 pounds of copper and a little gold, hence the average yield of the ore for the year per 2,000 pounds has been 20.7 ounces of silver, .04 ounces of gold, and 3.63 per cent. copper, or \$16.81 per ton.

The ore from the mine is transported to the smelter by means of a Hallidie aerial tramway, the length of which is about 4½ miles, and the difference in altitude between the mine and the smelter is 4,000 feet.

A good waggon road 9 miles in length has been built from Nelson to the Silver King.

Thanks to Mr. Davis, with the permission of Mr. Croasdale, the general manager, I was enabled to go through the underground workings at the time the method of timbering employed here attracted my attention, because Mr. Davis, unlike some other superintendents in British Columbia, has not allowed a false idea of economy to influence his policy, and he does not undertake to hold a bad roof over a wide stope by merely using stulls and lagging. He has instead, adopted the "square set" system in vogue in the gold mines in the Black Hills where wide stopes have been mined. By this means he has been enabled to extract all the ore without endangering the workings of the mine or the lives of the miners, which he could not otherwise have



FERN MILL AND TRAMWAY, NELSON.

done because the main stopes are sometimes as much as 50 feet in width. When the value of the ore is considered, it would have been false economy to have undertaken to have left pillars and used stulls and lagging, although, of course, the cost for timbering would have been reduced; but it is very doubtful, considering the rotten state of the hanging wall, whether the ore from these pillars could have ever been recovered. The loss which failure to win that ore would have entailed would have been very much greater than the additional cost for timbering, more especially when it is considered that he is enabled to use waste to fill in, and afterwards remove the timbers and use them again.

In a narrower parallel ore body, where the stopes average about three feet in width, he has been able

to hold the roof with twelve-inch by twelve-inch stulls.

The workings in this mine consist of four drifts run on different levels, the lowest being about 400 feet vertical depth below the outcrop of the vein. Both the main ore body and the narrower vein are opened up by cross-cutting from the drifts which were run on the main vein to the narrow one. A third ore body fourteen feet in thickness has been exposed on the fourth level only. This occurs parallel to the other two veins, and is enclosed in the same country rock, the ore carrying good values in silver but a lower percentage of copper than that from the other veins. I do not know whether this ore body outcrops at the surface, but it is only reasonable to presume that above the 400-foot level, where it has been cross-cut and stopping commenced, there is a vast quantity of ore to be won. The system adopted for stopping the narrow vein has been that known as "underhand stopping,"

which, under the circumstances, is more economical than "overhead stopping." Up-raises have been made from floor to floor, thereby affording facilities for chuting the ore from the higher levels to the lowest, which is used as the tram tunnel, and lighted by electricity.

The structure of the ore bodies at the Silver King is lenticular. They should not be classed as veins, because, although there is a fissure and a well-defined foot-wall, the mineral occurs as impregnations on the hanging wall side. This accounts for the variations in the thickness, especially in the main body. The gangue is simply the country rock. The richest portion of the ore body is near the foot-wall, and the only method of determining when the hanging wall is reached in cross-cutting is by stopping at that point where mineralization ceases. Apparently there is ample ore in sight to keep the smelter running for several years, and the superintendent informed me that the ore body had been determined by diamond drill test to a depth of 800 feet. He also told me that a fourth body was known to exist, but this had not yet been exploited.

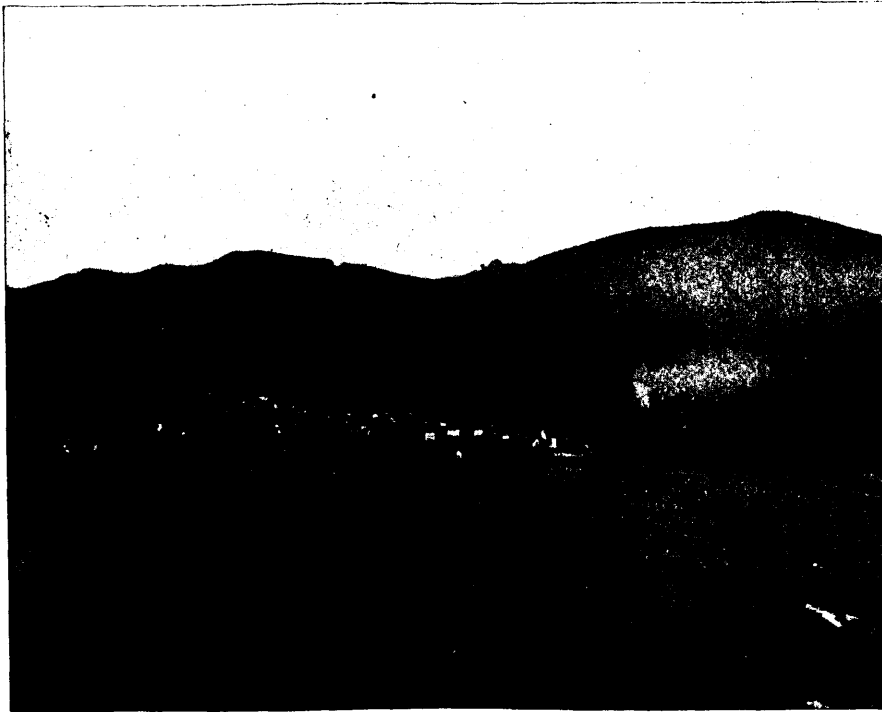
Air drills are used in running drifts and the wide stopes, but hand drills are employed in the narrow stopes. An electric plant furnishes light on the main level and in the adjacent buildings. At the time of my visit about 200 tons of ore per day were being

shipped to the smelter. My next visit was to the Fern mine, where the superintendent, Mr. Veatch, was good enough to offer me a cordial welcome. The mine is located nearly due south from Nelson, and about twelve miles distant, near the head waters of the Salmon River.

Mr. Carlyle, in his report for 1897 to the Minister of Mines, refers to this property as follows: "This company during the past season erected a ten-stamp mill and built a three-rail gravity tramway down from the mine. Since the stamps began to drop there have been two clean-ups, yielding \$28,500 at a cost of \$12,000, in three months; and from the second clean-up, after crushing in forty-four days 1,251 tons, the yield per ton was \$7.70 caught on the plates and \$1.55 in the concentrates, or \$9.25. Besides this mill rock, some ore is sorted out and sent to the smelter at Nelson. Development work is progressing, and it is the intention of the management to enlarge the plant, and,

perhaps to add acyanide plant, as the work is reported to be showing up a fast increasing amount of ore. A dividend of \$10,000 has been declared.

I was very much impressed by the appearance of the ore, which, while a portion is free milling, yet, taken as a whole, is apparently an ideal ore for direct chlorination. It would appear, too, as though treatment by that method would be more economical than by any other. Timber for fuel



NELSON—FROM THE LAKE.

is very plentiful on the property of the company, and only costs, delivered, \$2.50 a cord. The rich ore to which Mr. Carlyle refers costs at present for transportation and treatment alone \$15 per ton. In Colorado and other mining States direct chlorination according to the method practiced by John E. Rothwell, of Denver, costs only an average of about \$3 per ton, with the extraction being from 94 to 96 per cent. of the assay value. The difficulty which would occur in treating the Fern ore would be from the fact that such a large proportion of comparatively coarse free gold is carried by it. This would not be affected by the chlorine gas so far as rendering it soluble, but the particles would be very much brightened, so that by passing the solution over a mercurialized plate, after the chlorine gas had extracted the gold contained in the iron pyrites, the free particles would amalgamate more readily, and the solution could be passed through the precipitating tanks, where the balance of the value would be saved.

The Fern mine is located near the head waters of the Salmon River, and about twelve miles south from Nelson. There are two facts connected with this mine which cause it to be conspicuous in the district. The first is that the ore in the upper levels is so thoroughly oxidized as to place it in the free milling propositions; the second is that the vein has both walls well defined, and the gangue is quartz instead of altered country rock, as is usual in the mines so far discovered in this division of West Kootenay. As depth is attained the ore is becoming more refractory, and in fact the concentrates have carried sufficient value from the surface down to warrant the company putting in five vanners when the 10-stamp mill was built. A portion of the ore body has been already found to be so refractory that smelting has been resorted to because its grade is too high to run chances of loss in either amalgamation or concentration.

The mill plant has been built on a small creek about 1,400 feet vertical depth below the summit of the mountain where the ore body occurs. The method

of transportation for delivering the ore on the rock-crusher floor of the mill from the tunnels is a gravity three-rail tramway about 3,000 feet in length, with a 52 per cent. grade. In order to avoid any difficulty because of the heavy snow-fall, these tracks are laid on trestle work about 12 feet above the mountain side. A s each tram carries about one-and-a-half tons of ore, and the trip is made in two-and-a-half minutes, and it can readily be seen that the capacity of the tramway is sufficient to keep a very extensive milling plant supplied.

The ore body occurs in a porphyrite intrusion or dyke, and the fissure is very persistent, but of variable thickness from three inches to three feet. So far as the development showed when I visited the Fern, there are three parallel pay chutes in the vein, which has been opened by drifts on four levels. About 1,500 feet of working drifts had been run, and ore was being stoped and dropped through chutes to the lowest or main level. From these chutes it was discharged into a tramcar, run to the terminus of the gravity track, dumped automatically into the skip car, and carried to the mill, the loaded car hoisting the empty one.

Mr. Veatch, then superintendent, who kindly showed me around the property, has shown excellent skill in constructing this gravity tramway, as well as the

milling plant, which is so arranged that another ten stamps and four frue vanners, as well as either a chlorination or cyanide plant, can be added without disturbing the present buildings; in fact the foundation for the additional batteries were already in place.

The company has declared one 5 per cent. dividend, and there is sufficient ore in sight to keep the ten stamps pounding for several months at least.

UP THE STICKINE ON THE ICE.

BY ONE WHO HAS BEEN AND DONE IT.

IF you are after "experiences" you should decidedly not fail to make the journey up the Stickine river to Telegraph creek, and if you fail to get your money's worth then it is certainly your own fault. I was ambitious in this particular and so when opportunity offered I volunteered to join a party which left Victoria, on the 15th of January, by the steamer Danube. There were a large number of passengers on board including mules, horses and mounted police, and so we were

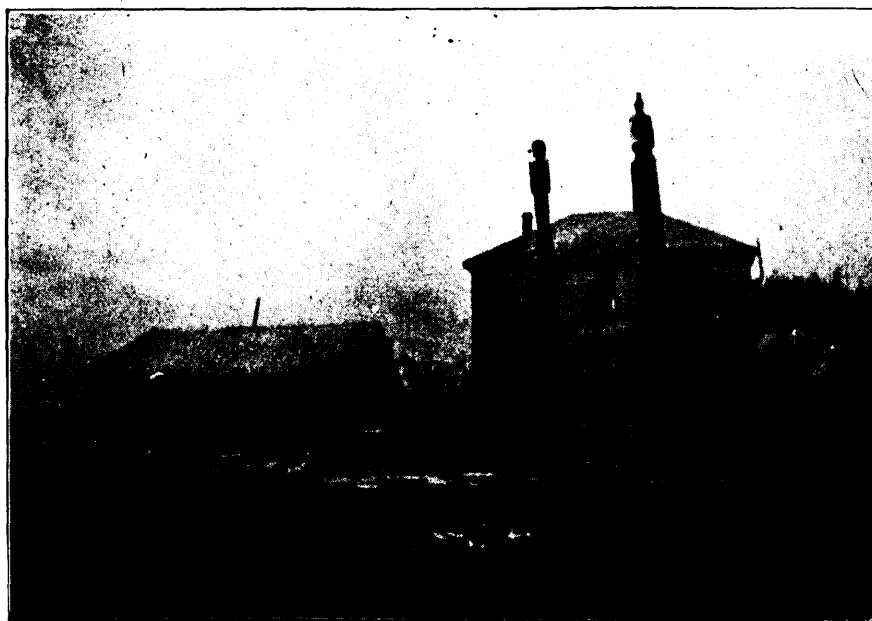
very much crowded for room and it was a difficult matter to move about. But notwithstanding little inconveniences of this sort it was a thoroughly enjoyable trip, with three days of glorious weather—real British Columbia weather—until we reached Fort Wrangel.

Here we landed, bidding adieu to the mules, horses and,

of course, unmounted police, and there was regret at parting on both sides for they were very companionable fellows when not sea sick. But Wrangel! Ugh! Is there such another town on the green earth?

For courtesy's sake I have called the ODORIFEROUS and smells, a town, but it is as little like WRANGEL. what one generally understands the word to mean as is possible to conceive. At

the time of our first brief stay there was no such thing as a street, and, of course, sidewalks had not been dreamt of, but since a decided change for the better has been inaugurated, although the sanitary arrangements are still distinctly primitive. Yet Wrangel is not by any means a new settlement; as a matter of fact it was established nearly a hundred years ago. The population is close on 1,500 and a strange cosmopolitan lot they are. There are now some fairly large hotels, the proprietors of which are doing a good business, but these have been hastily erected and are miserably furnished (except the bars, which are well



A HOUSE AT WRANGEL.
(Tepee Poles in Foreground.)

equipped), and in the sleeping line the accommodation is wretched. My companions and I had the esteemed privilege of reposing in the jail and I myself should have slumbered comfortably enough on the soft side of the plank floor of our cell, but unfortunately the others, who had never had such an experience before, kept me awake by swearing incessantly and rolling and unrolling themselves in their blankets into all sorts of weird and unearthly shapes, which was annoying. But morning at length dawned bright and clear, and our benumbed spirits rose with the thermometer, so after getting our *impedimenta* and supplies out of bond—which was not done without lengthy and appropriate wrangles and explanations with the officious U.S. customs officers—we took passage on the "Alaskan," facetiously, no doubt, described by her owners

as a "palatial, commodious and fast-sailing steamer." The "Alaskan," poor boat, has seen hard service, having been on this river route for fifteen years, but alas, she will sail no more, for she went to the bottom on her return trip after carrying us to Cottonwood Island. Cottonwood Island is your starting-point up

the Stickine, and here we found a number of people camped, waiting for the favourable weather, which they had been informed by outfitters and the newspapers, would meet and welcome them upon their arrival. However, it must have been delayed on the way.

Then we had been told that we

should find a good route up the river, but they must have been describing the streets of Victoria all the time, and we misunderstood. Well, to make a long story short, we loaded our sleighs and set out. The first few miles or so was good enough travelling over the smooth, glare ice, but this did not

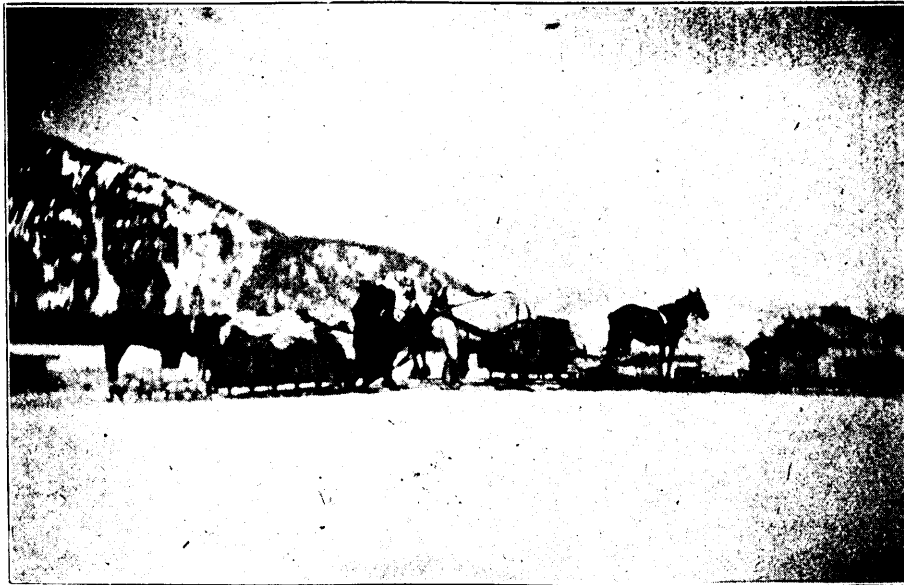
last long: soon we were floundering about in deep snow, and when you are pulling a load of from 180 to 300 pounds weight on a sleigh, in soft snow, believe me, it is not entirely a joke. The only thing to do was to take to snowshoes, and break a trail. Then we had a little amusement. Among the party were two or three who had never attempted this mode of locomotion, one in particular, an Englishman, just out from London, who was very keen to try, and after getting some of us to assist him in putting the things on, he started off in great style, pooh-poohing the advice offered him by the old hands. He had not gone very far, however, when he came to grief, and to speak literally, "took a tumble," landing in about

four feet of soft snow, with his arms outstretched and his mouth wide open. When he could speak he began calling out for assistance, but we were too busy laughing to give it to him in a hurry. Presently the unhappy Englishman was helped to his feet, but he stoutly refused to go a step further, exclaiming, "I can't! Really, you know! Positively, I can't!" We got him going at last, and in a surprisingly short time he learned the trick.

The same night we were caught in a terrific blizzard. The wind cut like a knife, and the thermometer registered below zero. We did not dare to

camp, for fear of getting frozen, and the hardships of facing that awful storm, pulling a heavy load behind one, it is difficult to describe. But this was part of the "experience" I wanted. This sort of weather continued for the better part of a month, and we had only travelled forty miles in that time. The snow was now becoming deeper as we advanced, and by actual measurement was seven and a half feet deep on the level. By the 10th of February the weather set in finer, and we made much better headway. The trail improved considerably and

parties with lighter loads began to overtake us. The travel by night was almost as brisk as by day, and we could see every night hundreds of lanterns glimmering like will-o'-the-wisps, up and down the river in the dark. Just before reaching the canyon, 100 miles from the mouth of the river, one of our party met



MANN, MACKENZIE TEAMS ON THE ICE.

with an extraordinary adventure. He was bending down to drink at one of the air-holes in the ice, when suddenly he disappeared. The next minute we saw his head bob up at another air hole, twenty feet or so below. It was a cold bath and a lucky escape, but we fished him out none the worse.

Above the canyon the travelling was excellent, and I have known men make the distance of fifty miles to Telegraph Creek in three days, with a load of 500 pounds on a sleigh. Glenora, H.M. Customs' post, is merely a collection of a few log houses, and has at present a population of five men and a dog, but one day, not far distant, it will, I think, be an important town. Here we found Mr. Warburton Pike, the noted explorer, busily engaged superintending matters for the Cassiar Central Ry. Co., who, I understand, are making great preparations for extensive railway operations to be commenced from here directly spring opens. About eleven miles higher up is Telegraph Creek, which is the winter quarters of

the miners. Including the Indians, it had, at the time of my stay, a population of two hundred people, and in the way of buildings, two stores, saloons, restaurants, and numerous huts. Flour was then selling at \$8.00 per sack, and the prices of other staples were in proportion. But those going to Teslin Lake this summer, should note that Telegraph Creek and not Glenora, is the place where the trail starts. By-the-way, Messrs. Mackenzie

THE MANN-MACK- & Mann had an easy enough contract in ENZIE their agreeing with the Dominion Government to open a sleigh road from SLEIGH ROAD to Telegraph to Teslin before the end of

March. Indeed, this road was made last winter, by a party of miners, and it has been kept open ever since. On my return journey this month, (April) the travel up the Stickine was very considerable, quite 2,000 people being on their way to Telegraph Creek with outfits. In May the river will be open for navigation, and then this route to the gold fields is certainly to be preferred to all others. It is decidedly better, however, as a summer than as a winter route, although in the winter one avoids in the Stickine the dangerous

snow-slides which have proved so disastrous over the passes. The country from Telegraph Creek to Teslin Lake is flat and easily travelled, and pack trains can be hired at the former place at relatively reasonable rates. The scenery on the Stickine is magnificent; coming back I got a better view of it than when on the

journey up we were facing a blizzard. There is in particular, a wonderful glacier called "Ice Mountain," on the way in. Its face along the river measures three miles, and it rises sheer from the water line to the height, in many places, of 800 feet. At the second canyon, known as "Klootchmar Canyon, you also get some very fine scenic effects. The canyon is a little more than 250 feet wide, and a quarter of a mile long; the mountains on either side rise abruptly upwards to a great height. Oh, yes, it is a very delightful trip when you have forgotten all the miseries of it.

SILVER OCCURRENCE IN KOOTENAY.

(Concluded.)

By Howard West, A.R.S.M., New Denver, B.C.

IN my previous article on this subject you will remember that I dealt somewhat exhaustively with the question of silver as it occurs associated with lead in the form of galena. While recognizing to the full the predominant role which this mineral plays, and

is doubtless destined to play in the annals of our mining industry, still it is altogether probable that the proportion of the precious metal furnished from this source will decrease rather than increase as time progresses. Such is the history and experience of many other districts of a like nature and present indications go to confirm the opinion that Kootenay will prove no exception. In the light of the steady and persistent increase of production from the lead mines, this may seem a somewhat extraordinary statement to make, especially in view of the rather disappointing returns from other districts to date, with one notable exception. The duty on lead into the States removed or profitable markets established elsewhere, an enormous impetus would be given to production by enabling properties at present too low grade to work to ship at a profit. Notwithstanding all this, I reiterate my former opinion that from the development of new and comparatively unknown argentiferous belts, and assuredly not on account of the decline in lead mining which under fostering conditions will continue to grow even more rapidly than heretofore, the percentage of silver obtained from other sources

is bound in the very nature of things to show an upward tendency. Entering more fully into detail we are immediately struck with the fact that copper plays a part second only to that of lead itself as a natural solvent or concentrating medium for the precious metals. Thus in a locality where gold and copper



OVER THE ICE WITH DOG TEAMS.

are both known to exist, we should almost expect to find them associated, as at Rossland and elsewhere, although it is well known that at the former place the gold values are not by any means proportionate to the percentage of copper present. Similarly, in an argentiferous country we look for the natural affinity to assert itself in a like manner. This is agreeably the case around Nelson, which consequently has the honour of standing second among the silver producing districts. The form in which it here occurs has been so often described that I will do no more than mention the fact that lead is conspicuous by its absence, the formation and type of deposit differing essentially from those characterized by the presence of that metal. Until the present time almost the entire production of silver has been obtained from cupriferous and plumbiferous ores, but on account of their importance to the country, reference must now be made to the so-called dry ores of the Kootenay, the demand for which will far exceed the output with the upbuilding of the local smelting

industry unless in the meantime more attention is bestowed upon this branch of mining than has been the case in the past. These comprise several kinds, all of which consist in the main of quartz or a quartzose matrix containing a small percentage of some highly argentiferous mineral, together with a greater or lesser amount of the baser metals. The associated mineral, which constitutes the valuable part of the ore, may be any of the known chemical silver combinations, but

the two principal forms here found, are first, uncombined sulphide (in contradistinction to the manner in which it occurs in galena) mineralogically known as argentite, and second, as native, or what we may reasonably term free silver, seeing the analogy it bears to gold in this respect. The former is that most generally met with, and it is worthy of note, though of mentioned, that gold is also appreciably in evidence in the majority of these ores, and appears to be at least partially amalgamable. In many claims native silver which is looked upon with a considerable degree of uncertainty as to its ultimate continuity, and it must be admitted

from experience not without some show of reason, is met with very freely, being found in four characteristic conditions: (a) Laminated or in scales and plates, sometimes two and three inches across. (b) In fine particles, disseminated homogeneously throughout the rock. (c) Filiform or in metallic stringers, commonly known as wire silver, and (d) Massive or in nuggets. The latter is far less

common than the others, but I have occasionally seen specimens weighing up to two ounces, taken direct from the vein.

The above ores, found principally within the confines of the Slocan City Mining Division, are so well known that further description would be deemed superfluous. Among other argentiferous minerals we must not forget to mention zinc blende, which in its pure state must undoubtedly be classed as a dry ore.

Those who have seen the Parke's process of desilverization in operation need not be told that metallic zinc has an even greater affinity for silver than lead; yet, strange to say, in a majority of the mines where blende and galena are found associated, the latter appears to monopolize the valuable contents. That this is not always so, however, is proved by exceptions such as we meet with in the case of the Enterprise on Mile, where the blende constitutes the most valuable product. To summarize the matter in brief, it is remarked locally that the light varieties of blende are comparatively worthless, and the darker they get the more likely they are to prove of



A STEEP DESCENT.
Laying Down Brush for a Foothold.



THE BIG CANYON ON THE STICKINE.

value. As in the case of galena, however, this is by no means a fixed rule, and it is advisable to get all and sundry samples carefully assayed before expressing an opinion. We observe, too, that most of the Rossland ores contain at least a few ounces of silver, and, with a heavy tonnage, must be reckoned with. Last year over one hundred thousand ounces were thus accounted for,

according to the annual report of the Minister of Mines for the Province. The forms of silver occurrence previously mentioned are responsible for practically the entire output of B.C., and, so far as we can see at present, will continue to be in the future, although the proportion furnished by each will doubtless vary considerably from year to year. The chloride, or horn silver, which is one of the principal factors in many regions, is not found to any extent here; indeed, I know

of no authoritative record of its occurrence in Kootenay to date. The same may be said of the bromide, about which we hear so much from self-constituted experts on seeing a bluish copper stain. The rarer and more interesting varieties are not, however, entirely wanting; the Boundary Creek District has been proved to contain samples of the telluride Hessite, though hardly, I believe, in remunerative quantities as yet, while on Eight-Mile Creek, tributary to Slocan Lake, native arsenic, 80 per cent. pure, containing upwards of one thousand ounces in silver, has been found in small cavities or pockets.

The ore may be completely volatilized in a frying pan over a camp fire, leaving only a button of metallic silver behind. The Reco Mine also furnishes an uncommon example in the shape of a combustible ore assaying one hundred and fifty ounces in silver. It is referred to in the company's report as stibnite, but as the specimen which I examined contained no more than a trace of antimony, which is the principal constituent, and bore no outward analogy whatever to that mineral, it is in all probability misnamed. On analysis I found it to consist almost entirely of angle-

site or sulphate of lead together with a large percentage of free sulphur, which would readily account for its inflammable properties. It has doubtless resulted from the decomposition and subsequent alteration of galena, being none the less interesting on that account as it is, I believe, unique in the Slocan.

If the ultimate value of a mineral field depended only on the variety of ores which it contained a brilliant future for the Kootenay might even then be predicted with

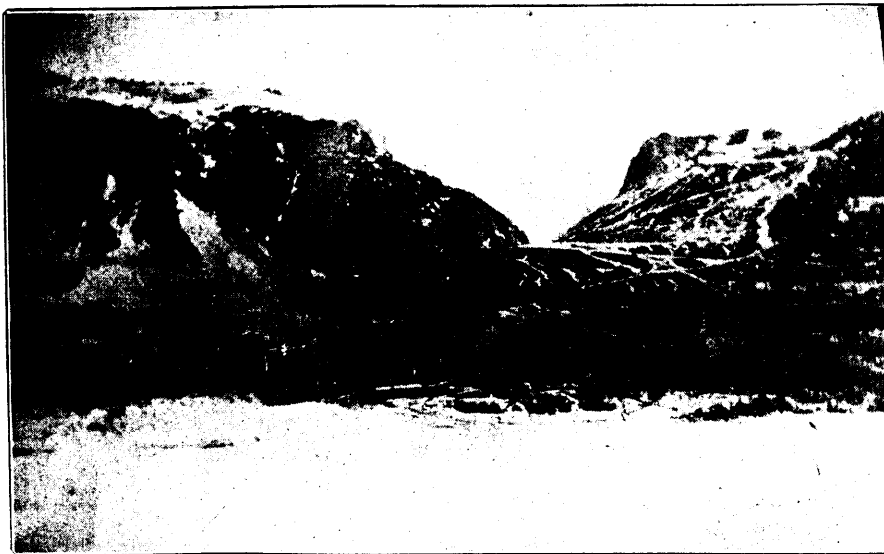
confidence, but though of overwhelming interest to the mineralogist, it is of quite secondary importance compared with the desideratum of the miner, viz.; quantity. Fortunately this primary requisite for the advancement of any mining country can also be truthfully accorded here, and this, more than all else, has assisted in placing the Slocan in the proud position which it now occupies as the premier silver producing district in the Dominion.

The discovery of the mineral Hessite, the telluride of silver in Boundary Creek was made by Messrs. Guess Bros., assayers of

Greenwood City, in the spring of 1896. So far as known tellurides ores of silver and gold are confined to one locality, only in the Boundary Creek district, petzite, a telluride of gold has been found to occur not far from Fairview, on Kruger Mountain. The ore from which the Messrs. Guess made their discovery was taken from a claim in Long Lake Camp, called the North Star, and the analysis was as follows: Ag. 60.68 per cent.; Au. 2.29 per cent.; te. 37.33 per cent. Promising claims are now being developed in the Long Lake Camp of the Boundary Creek district.



THE VILLAGE OF GLENORA.



TELEGRAPH CREEK.

THE ELECTRIC PLANT AT THE TRAIL SMELTER.

THE Trail Smelter is equipped with one of the finest electric plants in use in Canada, but, perhaps, not the most uninteresting feature is the water supply by which it is operated. The water comes from Trail Rock and Stony Creeks, and is emptied into a reservoir about one mile from Trail. The reservoir is tapped by two steel pipes, one 22 ins., and the other 16 ins. in diameter, which carry the water to the edge of smelter Hill, directly



FIG. 1.—SHOWING WATER WHEELS, GOVERNOR AND SHAFTING.

above the electric station. Here the 16-in. pipe divides its flow, part going to the smelter for use in disintegrating the slag, and the remainder down the hill to the power-house below through a riveted steel pipe.

The pipe is 22 ins. in diameter, and runs at an average incline of 42 degs., with a head of about 200 ft., which gives in all a 260-ft. head at the water-wheels. Just before entering the power-house the pipe divides and feeds two 36-in. Pelton water-wheels, which generate about 400 h.p. From the Pelton wheels the power is transmitted by belts to the electric generators, which are three in number, supplied by the Canadian General Electric Company. Chief among these is the 200-kw. power generator, which is the largest machine of its class in the Province. This is to replace the steam engine in the smelter, which will result in an enormous saving in fuel. The current from the generator will be transformed into power by two motors of 125 hp. each.

The other dynamos in a power-house are a 60 kw. alternator T.H. system, a 3 kw. Edison type exciter, and a 15-light Wood arc machine. The switchboards are of fine Tennessee marble, with the latest improved instruments and finished with nickel plated trimmings. As we mentioned last month,

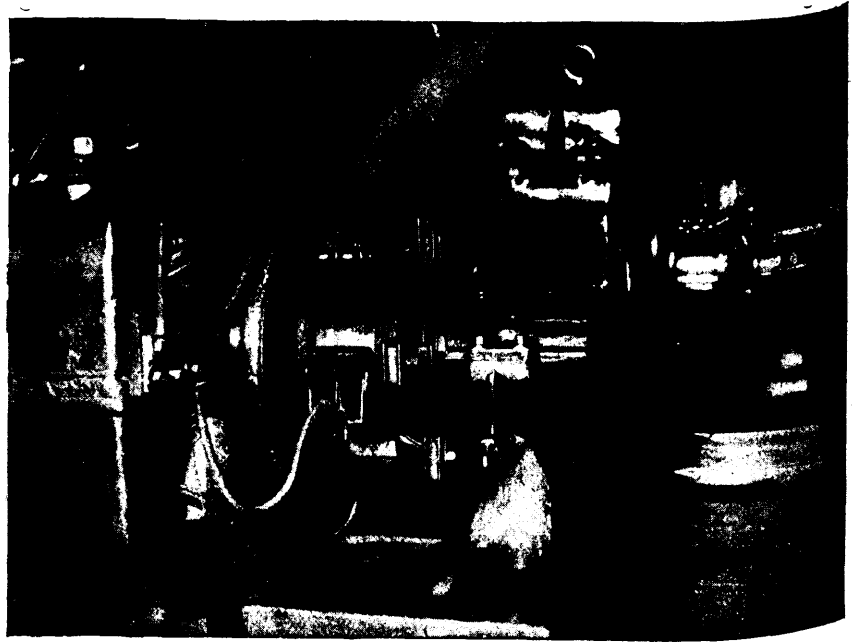


FIG. 2.—TWO 125-HP. MOTORS.

several important improvements are to be carried out at the Trail smelter. The furnaces will be blown in probably in July. A large supply of ore from the War Fagle and other mines is being accumulated at the works. Many Rossland ore bodies carrying from average to low grade values are at present being opened up as a result of reduced treatment charges, and it will not be long ere it will be found necessary to still further increase ore capacity of the smelter at Trail. We are indebted to the



FIG. 3.—POWER GENERATOR AND ALTERNATOR.

courtesy of the *American Electrician*, one of the best of the scientific journals published in New York, for the use of the photographs accompanying this article.

MINING AT CAMP MCKINNEY.

Our principal property in Camp McKinney, "The Cariboo," the best free gold mine of the province, has been running steadily, employing some thirty men, and is looking better to-day than when the mine was started, now four years ago. Since the advent of the steam drills, development work has been pushed ahead, and the ore from the lower levels has proved richer than that from nearer the surface.

"THE Some very handsome free gold speci- CARIBOO." mens have been taken from the 300 ft. level, and last month's mill run was a record one. The mine was examined recently by a well known New York expert, Dr. Kimball, who formed a most favourable opinion of the value of the property, and as this examination was in the interest of intending purchasers, there is a probability that the property may shortly change hands. Should the deal

take place, it will undoubtedly have a very beneficial effect on the future of the Camp, as the consideration will be of such magnitude as to open the eyes of the mining world to the possibilities of some of the undeveloped claims in the vicinity of the big mine. It seems most unaccountable that a camp which has had a steady dividend-paying mine for the last four years should attract so little notice

from mining capitalists. That this neglect is unmerited I feel sure, and I may mention, in this connection, that during the past year, a claim (the "Waterloo") was located about 200 feet east of the "Cariboo," a 50-foot shaft was sunk in a well-defined vein, from the bottom of which drifts were run and ore similar to the "Cariboo" encountered, carrying free gold. The melting snow filling the shaft and drifts with water has temporarily caused work to be suspended in this very promising property. The "Minne-ha-ha," to the south of the "Cariboo," is another instance of success attending development, after sinking a working shaft to the depth of 100 feet, drifts were run east and west, some 200 feet in all, with the most satisfactory results, rich ore being obtained, in some instances carrying free gold. This property being worked by a company, the necessary

steam hoisting and pumping machinery has facilitated the work of development, this machinery will be supplemented with a compressor drill, the management having determined in sinking another 100 feet before putting up a stamp mill. Some of the adjacent locations to the "Minne-ha-ha" are very promising prospects, but with the exception of the "Sailor," "Kamloops," and "Big Bug," so little work has been done, it would be premature to speak of their values. On the "Sailor" is a strong and well-defined vein showing up for some 700 feet, and the ore obtained from a small shaft sunk on the vein assayed from \$8.00 to \$58.00 in gold. The "Big Bug" has a 40-foot shaft showing good ore, and the "Kamloops," one of the old locations, has also had sufficient work done to be Crown granted. To the east of the "Waterloo" claim, above alluded to, is another of the old locations, the "Fontenoy," with an 80-foot shaft, the vein at the bottom of the shaft being 5 feet wide. In the

"Le Roi" and "War Eagle" claims, some four miles south-east of the "Fontenoy," considerable work has been done this winter, with the result that a dump of several hundred tons of sulphides has accumulated. No work has been done on the "Victoria" claim this winter, but on the adjoining claim, the "Old England" a tunnel has been run, now in 50 feet, to catch the ore



STAMP MILL, "CARIBOO MINE, CAMP M'KINNEY.

chute from which some 25 tons of sorted ore was shipped to the Tacoma smelter last fall, by the Victoria management. On the "Anarchist" claim, lying one mile west of the "Cariboo," a 50-foot shaft was sunk south of the ANARCHIST main shaft during the winter and good MOUNTAIN. results obtained. There is a probability that this property will be stocked, when development work will be pushed ahead. Considerable work has also been done on the "Dolphin" claim, which lies between the "Anarchist" and the "Cariboo," the tunnel being driven ahead and is now within a few feet of the vein, towards which it is being run.

This short summary of work done, will at least show that the good people of Camp McKinney keep pegging away, having confidence in their properties, and that exhaustless supply of hope, without which

mining would lose its fascination and be reduced to the monotony of potatoe digging.

It is needless to say that the much talked of, and apparently never-to-be realized railway, would act like the magician's wand in our claim owners, but whether it will be for them or their descendants to reap the benefit, only time and the C.P.R. can tell.

Meanwhile I might mention that there is some probability of a company being formed to work a portion of the placer ground of Rock Creek in a practical manner. Thousands of dollars have been taken out of Rock Creek, but for the last decade, mining has been carried on in a desultory manner, and that principally by Chinese. It is now proposed to bring in proper machinery and sink to bed-rock in different parts of the Creek, a lease of the ground being first acquired. Should this scheme be intelligently carried out, it has all the elements of success. At present it would be unwise to write further until the whole matter has taken more definite shape.

H. N.

THE GEOLOGICAL FEATURES OF THE KAMLOOPS DISTRICT.

By. Dr. M. S. Wade.

THE student of geology and mineralogy who may visit Kamloops will find abundant material for research among the hills and pleasant valleys of this district. There are no insurmountable difficulties to contend with in traversing the country, and the delightful summer climate is an advantage greatly appreciated by those whose labours entail much outdoor life.

Within a short radius of the town many different geological periods are manifested, varying from the Plutonic rocks of Coal Hill to the upper volcanic group of the Miocene.

From a practical standpoint it may be of interest to briefly consider a few of the main geological features of the district, and the relationship they bear to the existence of metaliferous deposits.

South and west of Kamloops there is an extensive outcrop of Plutonic rocks—gabbros, diorites and grey granites, and it is in this area that the copper deposits which have given Kamloops a place among the mining camps of the province are found. Large areas of similar formation exist still further south, while in the opposite direction smaller outcrops appear at several points along the valley of the North Thompson River. Wherever these areas occur the presence of copper is coincident.

East of the town, and extending both north and south, there is a very large area occupied by Palaeo-

zoic rocks. These are divided into two groups, the Cache Creek formation (carboniferous), and the Adams' Lake series (Cambrian). The rocks found in the first group embrace argillites, shaly in character, granwacke sandstones, conglomerates and limestones, the latter containing a few fossils, such as foraminifera and brachiopods. In this formation quartz ledges are of frequent occurrence, many of them more or less mineralized by iron pyrites carrying gold, copper sulphides and galena. South-east of Kamloops several quartz ledges bearing visible free gold are being opened at the present time, and it is worth noting in this connection that the geological formation at Cayoosh Creek, where the Golden Cache and other free gold mining properties are situated, is this same Cache Creek formation.

Comparatively little prospecting has been done in that section along the North Thompson occupied by the Cache Creek Rocks, and it assuredly offers what may be deemed a promising field for the prospector.

The second group, to which the term Adams' Lake series is applied, consists of argillites, quartzose schists, greenish feldspathic rocks, etc. The Homestead and other silver-lead deposits occur in this

area. This section, too, has been but cursorily examined, and will no doubt repay closer scrutiny.

Tertiary rocks are represented by several groups, one of which, under the name of the Coldwater Group, appears in the form of conglomerates and sandstones in several places, at no great distance, opposite Deadman's Creek, near Copper Creek, and on the waggon road at Cherry Creek near Hughes'. These conglomerates contain a small amount of gold.

Near the Indian village fifty miles up the North Thompson River there is another area of Tertiary rocks, with which is associated a deposit of coal. Another group, named the Tranquille beds, composed of volcanic matters which have been laid down in water, is also associated with coal. One of these deposits, two miles south of Kamloops, has been worked to a slight extent, and thin seams of good coal have been obtained.

The upper volcanic group of the Miocene period, in which porphyrites and basalts are most conspicuous, covers an enormous area, while the lower volcanic rocks attributable to the same period, namely, species of porphyrites, though considerably less in visible extent, are of greater importance, on account of their association with cinnabar and copper ores.

The Triassic period is represented by a series of agglomerates, limestones, argillites and porphyrites, to which the name Nicola formation has been given.

These rocks occupy a large tract of country south of Kamloops and Kamloops Lake.



FAULTED END OF THE "CARIBOO" VEIN.

Ores containing gold, copper, and silver are found in this formation, and numerous claims have been located, and on many of these a certain amount of work has been done.

Outcrops of all these rocks mentioned are close at hand, some being but a few minutes' walk from one's residence or hotel, while others are within the compass of a day's ride or drive, and what is more to the point from a miner's view, not only are these chapters in the life history of the world within easy reach, but the evidences of varied mineral wealth are demonstrable at the same time and as easily.

THE MINING MEN OF THE PROVINCE.

MR. W. PELLEW-HARVEY, the well-known metallurgist, of Vancouver, has been literally, from his earliest boyhood, associated with mines and mining, both his father and grandfather being prominent South of England mining and metallurgical experts. He was born at Truro, one of the chief centres of the Cornwall mining industry. After passing through the local Grammar School he secured, at the early age of fourteen, a first-class certificate in mineralogy and practical chemistry at South Kensington, afterwards entering upon a course of practical training in Cornwall under the tuition of an eminent mining engineer and chemist, Mr. J. H. Collins, F. G. S. This was followed by work in practice with Mr. A. K. Barrett, late technical manager of the Rio Tinto Mining Co., and subsequently with Mr. J. J. Beringer, F. I. C., at the Cornish School of Mines. In 1881

Mr. Harvey received the offer, which he accepted, of an appointment at Messrs. Vivian & Sons' Smelting Works, Swansea, and remained with this firm for four years, when in 1885, having been recommended to the more responsible position of manager for the well-known industrialists John F. Penrose & Sons, assayers, etc., to the Rio Tinto and many other great mining companies, he reluctantly severed his connection with the Vivians. Between 1885 and 1890 Mr. Harvey continued in charge of the Messrs. Penrose metallurgical department, purchasing ore from all parts of the world. As a result of his success here many opportunities of engaging in foreign work occurred. Hence, being ambitiously disposed, Mr.

Harvey concluded to seek fortune in a wider field, and, coming to Canada in 1890, established an office at Golden. In 1893 he was asked by the Provincial Government to make assays of the ore specimens sent from British Columbia to the World's Fair at Chicago, and later was appointed, with Mr. H. Carmichael, an examiner of candidates desirous of obtaining the Government certificate of competency for assaying. In 1894 Mr. Harvey was obliged to leave Golden owing to the growth of his business connections, and, settling in Vancouver, has succeeded in building up a very large and important provincial practice, besides which private work he represents the Cassel Gold Extracting Co., Ltd. (cyanide process), Glasgow; Messrs. Vivian & Son, Swansea; The Elliotts Metal Co., Ltd., Burry Port, S. Wales, and many other foreign and local mining companies of good standing. Mr. Pellew-Harvey is a Fellow of the Chemical

Society, a member of the Canadian Mining Institute, an executive member of Vancouver Board of Trade, a member of Federated Institute of Mining Engineers, England, and a member of the executive of the B.C. Chamber of Mines.



MR. W. PELLEW-HARVEY, OF VANCOUVER.

OUR LONDON LETTER.

MR. RHODES is in London, and has declared himself in his usual emphatic manner. He has spoken, and in the following strain:—"In my opinion," he says, "nothing is so vital to the future of the British and American peoples as a cordial understanding now and a deep-rooted conviction of mutual good-will. From this, if future events should render it necessary, a formal alliance may be born." Then he continues, "It is not for

us to run after America with offers of alliance. Such a result must, of course, be a meeting half way. But it seems to me perfectly obvious that in any division of world interests those of the British Empire and America will be found united. You can't get over the fact that the two peoples are of the same race, and the trite saying that 'blood is thicker than water,' is a true saying. England and America need each other, and this need will grow rapidly in the future." What a revelation of revelations is centred around these few phrases! We are all thinking about the same subject; speculating wildly, but not about companies and dividends, but on the great subject of the hour—the war, what nations will interfere, how it will end,

and what economical results will follow. Our papers have explained that the humbler Englishmen are of the same way of thinking as Mr. Rhodes. Is it all true? We are supposed to understand that proclamations of friendship have gone forth to the Republicans from the Dominion, and that it was even proposed to fit out a regiment of Canadians to support the States in their fight for commerce and grab, (I beg pardon, for the cause of liberty.) Well, perhaps, but I note this information comes through New York channels. Nevertheless it would be a grand thing if a firm friendship between the Empire and the great Republic could be cemented, but they will be required to settle their various accounts with Canada; get a little of their bumptiousness knocked out of them, and what is of greater consequence, require to show some evidence of siding with us should—as seems possible—England be dragged into difficulties with other European powers. With the establishment of such relations Canada would secure as many advantages as the States. But this matter must be enquired into after the war is at an end, for a large number of Britishers would be strong partisans of Spain were it not for the fact that her rule in Cuba was so markedly corrupt and cruel.

Before hostilities commenced the money market was in a very uncertain state, now rallying, now sinking, uncertain what development would take place. But the first shot seemed to revive the market in a strange manner, and if the war were speedily ended little effect would have been made in regard to the equilibrium. But if it continues for any length of time it is difficult to foretell what may happen. The difficulty is the greater as the price of wheat has risen quite unwarrantably. Moreover, the C. P. R. is still carrying its freight at prices that would hardly please a pawnbroker. Here is a Canadian company, well established, and a month or two ago a favourite of the English investor, playing the very mischief with its financial standing to spite rival companies. No settlement, no

THE WAR AND THE MONEY MARKET. decent dividends. Can not the authorities recognize the folly of this idiotic competition, can they not see how it must scare the more timid or more cautious investor? And then we are invited to a dinner by the Directors of the Klondyke & Columbia Gold Fields to welcome Mr. Morris Catton on his return from British Columbia, and to learn from him that miners could make \$5,000 a year in the Yukon district, whilst money was made by trading, and especially shipping, railways and tram-

MR. MORRIS CATTON ON THE YUKON. ways, he continued, were well worth constructing. One railway which had been projected at a cost of £450,000 had almost doubled the outlay by its freightage in the first season. We are also asked to believe that a nugget had been found weighing thirty-one ounces; that two miners in one day found \$5,000 worth of gold; that twenty millions of gold were now in sight; that Dawson City would exceed Johannesburg in size before long. We are asked further to believe the report of two miners who had returned from the country, that there awaits at Dawson, twenty tons of Klondike gold as a result of the season's clean-up; that a man had pocketed a nugget of the value of \$1,800, but that he would not betray himself in the hopes of successfully eluding the vigilance of the Canadian Mounted Police, men who

like reporters are ubiquitous, and are to be found even at the ends of Canada. Easier is it for the imagination to accept the report that Dawson City is not to be compared with Skagway for its law and order, and is a place in which revolvers are not carried in the hip pocket as in the American district.

Klondike loses more and more of its romantic attractiveness the better it becomes known. Mr. A. E. Watts, a well-known citizen of Liverpool, and a member of the Waterloo District Council, has just returned from British Columbia, and gives an account of gold miners' experiences in the Yukon district which is not stimulating to intending emigrants. Several of the returning miners whom he met in British Columbia were, as they termed it, "dead broke," and bitterly disgusted. A few only were successful. One of these, who with his party sold out a claim for \$50,000, started from Vancouver in March, 1896, and reached Klondike after a terribly severe journey by way of the Chilkoot Pass. For thirteen months they prospected without success, existing for the greater part of the time on flour and beans. At the moment when they were about to leave the country they were persuaded to try their luck at Eldorado Creek, and were there moderately successful. He states that shallow claims can only be worked during the warm season. They require an outlay of a thousand dollars and upwards before they can be got ready, and the work of preparation takes a year and sometimes even longer. Summing up, Mr. Watt says, "the richness of the country has been most grossly exaggerated. I met old prospectors who had been in the country for many years, some as long as twelve years, and had found only just enough to exist upon—you cannot call it living. My opinion is that every dollar obtained from that country will involve the outlay of ten to get it, and my advice to people intending to make the trial is simply—don't!"

Still there are some who have started for the northern gold fields; some who are taking it leisurely, and though they sailed out in the Caronne at the beginning of April are not likely to reach Vancouver before June. The *Morning Leader* thus describes the passengers:—They comprised men of all ages from 19 to 50, of all sizes and build, some of whom had never left their native shores before, while the bronzed travel-stained faces showed very plainly that they had knocked about the world. "Previous occupations" were quite as diversified. In the "Research" party alone there are two solicitors, two doctors, (one of whom received his appointment as ship's surgeon for the voyage out), a retired army captain, an ex-man-o'-war's man, a butcher, a tinsmith, a sheep farmer, who disposed of his Welsh hills' flocks to join the goldseekers, an engineer, and an adventurous young fellow favoured by fortune to the tune of ten thousand, who is anxious to give part of it a "run," although he says he goes to Klondike more for the fun of it than for anything else.

Mr. J. F. Waddington, the organizer of the party, is a naval architect, formerly with Harland & Wolff, of Belfast, and he spent his last night in the old country designing a second Yukon river barge, which is to be constructed in England and sent cross country to Vancouver to help the *Research* to carry the miners and their baggage to Dawson City. Mrs. Waddington accompanies her husband as far as Victoria, B.C., and thanks to her the prospectors will find towels, pillow-slips, saucepans, kettles, and the hundred things that men usually forget.

This is scarcely the route as recommended by Mr. Ernest Williams, who has such firm belief in the Hudson's Bay route. Enter America through the Strait, and you can cross to Port Churchill on the western side of Hudson Bay and yet be within 2,926 miles of Liverpool. By this track a journey to Vancouver would be less than that by Montreal by 1,328 miles. That it was a safe route was evident from the fact that during nearly four centuries only two small sailing vessels had been lost. The one disadvantage was that it was not practicable throughout the year, although Admiral Markham has recently asserted that it would be open for at least four months. A prominent engineer, name not given, states that leaving the

A NEW ROUTE. there is a new route which promises comparatively easy transport for the gold fields. The country is so favourable that

a man could bicycle over it, (heigh-ho for the White Pass). This route will enable travellers to get down to Telegraph Creek, where they will take the present route for Dawson City.

A little stir was made when the new goldfields of British Columbia announced the offer to the public of the Klondike Goldfields Limited, with a capital of three hundred and fifty thousand pounds, of which four-sevenths was offered for subscription. From the parent company Sir C. M. Kennedy and Mr. Lowles, M.P., came forward as directors, with Messrs. Harman and Billing from the Klondike Mining, Trading & Transport Corporation.

The Company will acquire eleven full claims; one-half interest, and two one-sixths interests in others, the ground aggregating over a mile in length. This little account will certainly help to swell the fifteen millions already sunk in Klondike investments. This does not, however, prevent the *Globe* and the *Pall Mall Gazette* from commenting in a somewhat caustic strain. The former journal remarks that the one unsatisfactory feature in the prospectus is "50,000 shares are available for providing working capital." We would rather have it read as follows:—"£50,000 will be set aside for working capital." Doubtless the pink edition is the more technically correct, but if the other evening paper spoke as mildly as this the Company would not be dissatisfied. However, the "P.M.G." is scarcely so pleasant when it adds, "We are not particularly fond of water in capital, and we think the traces of it are to be discovered in the prospectuses of two mining concerns that are now appealing to the public. British Columbia, the Klondike district, and Rhodesia are likely to receive considerable attention

THE KLONDIKE GOLDFIELDS LIMITED. from promoters, and a boom is not improbable, so that it is possible that the shares of both may be advanced to a

level considerably above the par value. The Klondike Goldfields Company comes to the public with a capitalization of £350,000. As the New Goldfields of British Columbia are part promoters we should have thought that they would have eliminated the mere "catch-penny" side from the prospectus. Products of the district, general reports as to the Klondike, etc., are all very well, but are best suited to a different type of promotion." What seems to us rather strange is that whilst the total capital arranged for is to be £350,000, only £200,000 are now called for albeit the purchase price is put down at £300,000. How is it all to be managed, except on the hiring by instalments system?

Another company which has issued some very curious notices is the Yukon Trading, Mining and Exploration Company, which heads some of its advertisements under the following lineage, "Pessimists and Cynics." Well, of course everybody reads what follows:—"Doubtters do not draw profits. The man of decision and judgment does and there never was so great an opportunity for him as in the Alaskan goldfields to-day. The Company was among the first in the fields, its prospectus presents an opportunity for investment with the chance all in favour of its being highly profitable. So say all of us who know not how to bait the British public. There are men on the ground with brains to explore—this is the first time I have heard of brains doing service for the pick and hammer, they have also money to buy with—then what need of further investment. We forgot these are charitable Samaritans! There is further the yarn about a man who bought a hundred dollars worth of shares and promptly sold them at the rate of 899 per cent. Who was the buyer, and what is his profession?"

With that, and with the announcement that Mr. Rhodes has been re-appointed director of the Chartered Company, wherewith there is likely to be a row in the Houses of Parliament on the part of the little Englanders, and with the information that the West-ralian market has been so unsound that several brokers have been brought under the relentless hammer, I must conclude.

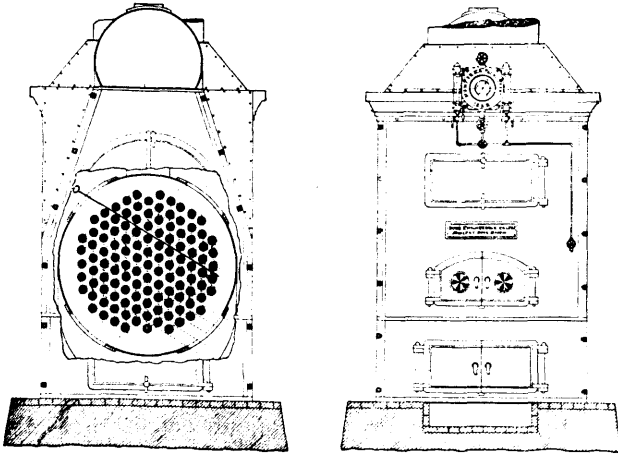
NUMMUS.

A TEST CASE.

THE local agents of a well-known powder manufacturing firm had an experience lately which will deter them in future from too hastily exhibiting samples of their wares to strangers. A well dressed man called at the office and asked to see some samples of a rather powerful blasting powder, stating that he was a mining engineer and was opening up certain properties near the city. He was duly shown a sample of what he had asked for and proceeded to examine it critically, "Of course," he remarked, "you know that this stuff, when pure, cannot be exploded by the mere application of heat?" "Certainly, certainly," said the manager. "Well I know your company to be reliable men, but I will just try a bit of this with a match." Suiting the action to the word, he struck a match and taking a generous proportion of the powder was about to apply the flame to it; but practical illustrations of this kind are not suitable for a business office. The manager reached the door, fourteen feet away, in one stride; and although his two clerks are smaller than he, they were not many inches behind him. The shortest way of getting down a flight of stairs known to science, is to fall down. This was done by the three agitated gentlemen, who picked themselves up on the sidewalk outside, and waited for the awful catastrophe. It did not come however. A quarter of an hour passed, and then the manager cautiously ascended the staircase and looked into the office. On the counter lay the powder, but the experienced mining engineer was gone; so was the manager's gold watch, which had been lying on his desk. Gone also was the petty cash box. Gone also the contents of the stamp drawer. The bereaved manager summoned his staff. There was language. There was also a pledge of secrecy. "I do not," said the manager "want those—papers to get hold of this. Why they might poke fun at me." Somebody must have talked however. In the meantime the experienced mining engineer has vanished.

MUNFORD'S IMPROVED BOILER.

ON this page we illustrate a new boiler intended to meet the demand for greater economy and efficiency than are obtained from the ordinary brick-set



boiler. The water circulation is similar to that of a water tube boiler and for very high pressure it is built with a corrugated furnace. It was designed by Mr. J. A. Mumford and is manufactured in Canada by the Robb Engineering Co., of Amherst, N. S., and in the United States by a large concern in Erie, Pa.

The furnace has ample room for mixing the gases and is surrounded by water so that the radiant heat of the fire is readily absorbed. The heated gases pass directly through well proportioned tubes and return around the shell of the boiler and underneath the drum, making every square foot of the boiler effective as heating surface, and enter the smoke stack with sufficient temperature remaining to produce a good natural draft. By covering the case and drum with a non-conducting material the loss of heat usually found in the setting of boilers may be reduced to a minimum.

The water circulates continuously from the front to the back of the boiler, up the back connection to the drum, where the steam freely separates from the water, and down the front connection to a point below the fire. This positive circulation admits of using forced draft increasing the horse-power of the boiler without foaming or priming, the increased temperature increasing the speed of the water circulation without any evil effects.

Special arrangements are made to avoid trouble with bad water. The feed pipe enters the drum near the back end, and part of the sediment is deposited in a

settling chamber at the front end of drum and may be blown out. Additional impurities that are carried down the front connection are deposited in another settling chamber below the furnace. This leaves very little if any impurity to form scale on the furnace and tubes and it may be removed by a scraper inserted through hand holes in the shell, the tubes being spaced so that all can be cleaned. Doors are placed in the casing opposite these hand holes which also give facilities for cleaning the outside of the shell.

The Robb Engineering Co. inform us that they have already installed two of these boilers in Montreal and others in Lethbridge, N. W. T.; Fort William, Ont.; and Parrsboro, N. S., while a number more are ordered.

A CURIOUS STORY.

"OUT-KEMPING" MR. KEMP.

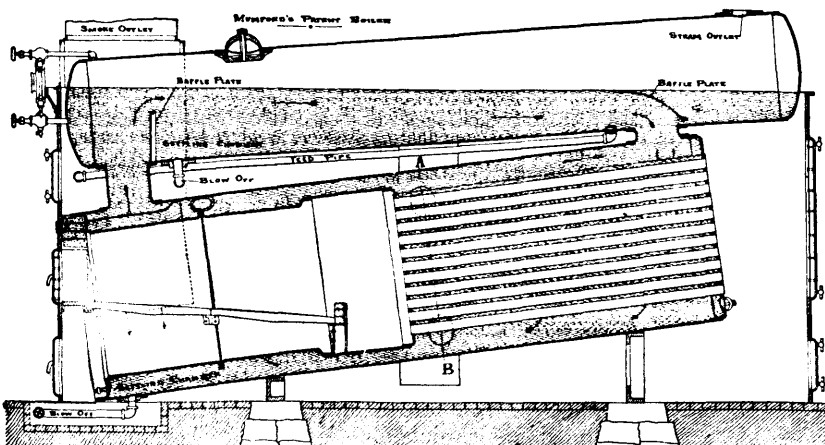
A SHORT time ago Mr. Randall H. Kemp, of Kaslo, related in the MINING RECORD a highly imaginative but a gruesome enough story of a man who, having been employed in some capacity in a stamp mill, absorbed a quantity of gold and mercury into his system, this ultimately causing his death. How or when Mr. Kemp obtained the idea from which he evolved his weird plot we are not, of course, able to say; but a very similar yarn has been published recently by the superintendent of an American State Lunatic Asylum, who offers to afford proof, if necessary, of his statements. The story is as follows:

Abe Boyle went to Alaska in the summer of 1896, and was one of the first to set out for the Klondike diggings. His claim was one of the few from which the nuggets and coarse gold had to a considerable extent been carried lower down the creek, while the washing from above left the heavy gravel impregnated with what is known as "flour gold." This is the finest form taken on by the yellow metal, which in that shape manifests its presence in the Rocky Mountain plateaux and even in the waters of the Pacific Ocean, into which it is carried by the streams heading westward from the great continental divide. There is no known method of saving flour gold, which will escape over the quicksilver plates of a stamp mill in spite of all efforts to capture it.

Boyle, during the summer of 1897, was much of the time immersed to the waist in the waters of the Yukon. Being in the water constantly, his body seems to have accomplished what no invention of man has yet done, for through the pores of the skin there was absorbed an incredible quantity of flour gold.

He was seized with what he thought was rheumatism, but kept on with his work until his limbs became unmanageable. It was as if ossification, if not petrification, had set in. This condition gradually spread upward, and he lost his appetite and eventually became insane. There being no physician in the camp capable of handling the case, he was sent back to the States in charge of a friend, who kept him for several months at his home in Lander, Wyo. His condition did not improve, and he was finally taken to Laramie, Wyo., where Dr. William H. Harris, one of the most noted practitioners in the West, thought he had located the source of his trouble, and resolved upon an experiment to test the correctness of his theory.

In a Turkish bath house Boyle was submitted for a week to a treatment in which the medicine administered consisted largely of mercury. Then he was given a thorough Turkish bath. His chair in the sweating room was placed in a shallow basin of zinc, so that the perspiration which poured down from his body would all be retained. He was afterwards rushed through the remaining features of the bath and put to bed. When he awoke he was found to have entirely recovered from the hitherto unaccountable stiffness of his limbs, his flesh being soft and pliable as an infant's,



though his mind was still affected. The next thing done was to examine the contents of the zinc basin in the sweating-room. An assay of its contents showed that the mercury, administered in the form of pills, had passed off through the open pores of the skin, carrying with it the flour gold with which Boyle's body had been saturated. An assay by Superintendent M. A. Grant, of the Keystone mine, showed that the value of the flour gold drawn from Boyle's body by means of mercury approximated \$270.

The effects of the treatment upon the mind were something the physician did not care to experiment with, so Boyle was sent to Asylum No. 2 in this city. He is now apparently in the best of health physically, and Superintendent Woodson believes he will soon regain his reason.

TERMINAL CITY TOPICS.

THERE is reason to believe that the Klondyke boom is over so far as this season is concerned and in so far as it concerns the outfitting and general Northern trade of Vancouver. It is now time for the advance guard of the expected rush of summer travel Yukonwards to be reaching Vancouver, but of its coming in any large troop there are now few indications. Several things are contributory causes of this state of affairs, the outbreak of war between the United States and Spain, having as one of these causes, produced a generally deterrent effect on new enterprises, which whilst commercial have about them a large admixture of adventure and risk, that is wholly unconnected with speculation born of war incidents.

THE YUKON TRADE.

There is also no doubt that absurdly exaggerated and promptly refuted assertions as to the exceptional possibilities of the Northern gold fields, followed as these have been by many disasters to gold-seekers making north by difficult and dangerous winter routes, have together tended to reduce enormously the number of Britons intending to make for the Yukon in quest of gold. A steady trade will continue to be done in Vancouver, but those who have in anticipation of a continuance of the Klondyke boom through the summer, stocked largely, are but too likely to lose somewhat heavily. The wise among the Vancouver traders dealing with Yukon emigrants are consequently drawing in their horns and making no further large purchases whilst quietly seeking to dispose gradually of their accumulated stocks and Northern wares.

It now seems very doubtful, although the proposal has passed the City Council, if the money by-law voters of Vancouver will ratify the smelter subsidy by-law under which it is proposed to grant a bonus of forty cents a ton on an aggregate of 125,000 tons treated in aid of a smelter to be set up hard by the city, at Hastings on the Inlet water front. The smelter is to cost about \$50,000 exclusive of the site and

A SMELTER BY-LAW.

the concern will employ some 70 men, but the expenditure on buildings and plant proposed first in return for a subsidy of equal amount, spread it is true over three years, does not seem large enough to fire the popular imagination. The Van Anda Company will therefore need to work right hard to rouse an at present very cold and apathetic municipal public to sufficient enthusiasm in favor of the smelter bonus to offset the adverse votes of a large number of electors, who on principle oppose any expenditure of public money when such proposal has to be submitted to their direct vote under a money by-law. Then too, it is said that another somewhat powerful smelting organization may shortly submit larger proposals to Vancouver and by

pushing these, make an endeavour to block the Van Anda scheme. The vote on the subsidy proposed in aid of the latter is to be taken on the 8th inst.

Since the above was written, it has become known, that the Van Anda Gold & Copper Company will not, as an organization, endorse the application nominally made in its behalf, for a municipal bonus in aid of the proposed smelter at Hastings. Those holding controlling interests in the Van Anda Company, consider that the smelter should, in preference, be erected near the Company's mines on Texada Island, or else in the neighbourhood of Victoria. Undaunted by this, Mr. H. W. Treat, who has carried on the negotiations with the Vancouver City Council, states that he will form another and equally strong organization, in order to carry out the conditional agreement made with the rulers of the Terminal City—in the event, of course, of ratification by a poll of the money by-law voters.

It is difficult to ascertain the general trend of Vancouver public opinion as regards the proposed subsidy to the Mann-Mackenzie railroad project. Public opinion is, in the Terminal City, just now, strangely apathetic. On the whole it would appear that the local mercantile community endorses the proposal, though some of its members think *quid pro quo* in the form of a four per cent. royalty on gross railroad receipts, might have been larger. The masses in Vancouver make little sign, but there are indications that on the whole a majority of them

THE think that the price agreed to be paid or **NORTHERN** lent by the Province, in return for the **RAILWAY.** railroad, comes too high. The subsidy promised to the Vancouver, Victoria and Eastern Railroad will be more popular, provided it can be shewn clearly—some doubt being at present cast upon this—that the railroad subsidy will include the portion of the line that will need to be constructed between Vancouver and the Fraser River. It seems, however, obvious that the Canadian Pacific Railroad, which is as lessee to control the undertaking, will assuredly connect the line with its own Terminal City of Vancouver. Many opine that unless big municipal as well as Provincial help be given—of course in this instance by the City of New Westminster—the Vancouver, Victoria & Eastern Railroad will not, if and when built, cross the Fraser by a wide and costly bridge at New Westminster, but make for Vancouver instead, by a less expensive route, over short bridges crossing the river at some point opposite Lulu Island. By this means the C.P.R. would secure for the connected new railroad valuable cannery business, and open up en route to Vancouver, a very large amount of well situated residential land and farm land, which the great transcontinental Company owns in the suburb of South Vancouver. All is, however, conjecture as to these things. But people in Vancouver with fair memories recollect now that Sir Wm. Van Horn said less than two years ago, with a meaning smile on his face, that if ever the Vancouver, Victoria & Eastern Railroad scheme matured, it would be his Company that would take up the project.

Another thing is certain, that direct connection of Vancouver with the Kootenays and other rich mining districts en route, by means of the Vancouver, Victoria & Eastern proposal, will, if accomplished, prove of great and lasting benefit to Vancouver, as also to Victoria, if the Queen City is connected, as proposed, with the railroad, by means of a gulf railroad ferry or rapid steamship service.

The Vancouver directors of the B.C. Chamber of Mines, feel much aggrieved by the MINING RECORD'S criticism of their organization and methods. They are, meanwhile, by no means finding easy the task of establishing their Chamber upon a sound and lasting basis.

The leading men of the Channe Mining Company are just now very busy. They declare, somewhat mysteriously, that they have a "big thing" on hand, and meanwhile state that the ore of their Hansen Island mine is, under test, more than satisfying their expectations. They are certainly able to shew many samples of richly shewing rock. There is also no doubt that some generally well informed men have lately been buying stock in the Company. Hence, something further, of more or less importance, will evidently be heard shortly, regarding the concern.

ROSSLAND NOTES.

ANY pretence of writing notes on this camp now-a-days, without making reference to the B.A.C., is futile. Work is progressing, but results cannot be expected at so early a date. Next month I will endeavour to let your readers know in what manner this powerful corporation is making good its prospectus. The deal with the Le Roi is practically consummated, and this famous mine is henceforth to be reckoned among the mines under the control of the great London company. What action will be taken in regard to the Northport smelter, yet remains to be seen. It is not probable that it will be run in connection with the Le Roi, but on the other hand there should be no reason for the shareholders to regard that incidental purchase as that of a white elephant, for there should be no trouble in parting with it to some

THE B.A.C. American firm over the line, to smelt AND THE some of the Washington ore, if no better NORTHPORT course should present itself. Mr. Whitaker SMELTER. Wright is expected out towards the close of the month, and we shall probably hear some definite policy enunciated.

The War Eagle is shipping daily ore to the Trail smelter, which, however, will hardly be ready to blow in until July.

Turning again more directly to the mines themselves, while noting that the Monte Christo, under the management of Superintendent Pfunder, is about to become a shipper, it would be well to note the approaching completion of the Homestake deal, which, as it concerns the most prominent group of mines in the South belt, on the edge of the gobbro, will be an important feature in the mining history of the camp. The Homestake group

THE HOMESTAKE were among the first locations in ROSSLAND DEAL. land, being only second to the Lilly May itself, which property lies south and west of this string of claims. The feature of the Homestake group which, taken in their order from west to east—respectively the Homestake, Gopher, Maid of Erin and R. E. Lee—is that they present the best shewing of low-grade ore in camp. Near the middle of the Homestake claim a shaft has been sunk some 200 feet. Sixty feet down a drift has been run in on the ledge, to meet a short shaft sunk on the slope, running down towards the Gopher. On the Gopher itself a parallel ledge to Homestake vein, which averages ten to twelve feet in width, having been discov-

ered, a shaft has been sunk upon it and an adit run in 200 feet, meeting the shaft and proceeding some three hundred feet further towards the foot of the Homestake. The intention is, according to the plan of the late Superintendent, "Billy" Haskins, to connect the two and thus ventilate and drain the workings. After this it is intended to work from fifty foot levels, stopping out the ore. The R. E. Lee shaft-house is erected over a shaft down about sixty feet, sunk near the junction of the Maid of Erin and R. E. Lee. This shaft is again in the Homestake vein, which, by means of open cuts has been traced across the properties for a distance of nearly 6,000 feet, or over a mile. The Columbia Western track curves around this string, cutting across the R. E. Lee and the Homestake.

D. M. Linnard, the controller of the majority of the stock, is expected to sail from London on the 4th insti, and to bring with him the final settlement of the transfer proceedings to an English Company, which is to proceed to reorganize the four "million" dollar companies which at present own the various claims, and get down to a solid working basis.

By way of valediction I don't mind saying, without the fear of booming, that the town is rapidly filling, despite the exodus of the army of prospectors, and that its population was never so great as it is to-day.

D.

THE MONTH'S MINING.

ALBERNI AND WEST COAST.

THE arrangement made between the Alberni Consolidated Company and Mr. Cowell, of the Victoria Metallurgical Works, representing English capital, appears to be an excellent one in the interests of both parties. Mr. Cowell agrees to erect and operate continuously at the mine for six months, the 4-stamp mill which for the past year has been used in connection with the ore testing department of the Victoria Works. For this period the mine will be worked by the Alberni Consolidated Company, but under Mr. Cowell's direction, and the profits from the ore milled will be equally divided between the mine and mill owners. Meanwhile Mr. Cowell takes a six months' bond on the property for \$150,000 cash, or \$50,000 and a division of shares in a new company subsequently to be organized. If the mine is properly developed during this period—and not merely that the mill may be supplied with the best class of ore obtained from wherever it is to be found—and there can be no doubt that both Mr. Cowell and the owners of the Alberni will discountenance any policy so short-sighted—the permanency and value of the property should be sufficiently well demonstrated. Tests in ton lots, of Alberni Consolidated ore have given the most satisfactory results, the values averaging about \$40, and we learn that there is a large tonnage of this class of ore in sight. By the erection of the mill on the spot, the high cost of wagon transport of the ore will be saved. The profits, considering the capacity of the mill is fifteen tons per day, should be considerable for the six month's work. Milling operations will be commenced about the 15th of June.

Both Alberni and the West Coast districts are now beginning to receive the attention of capitalists, and the present year should see much mining activity here. At Clayquot, on Tranquille Creek, a prominent capitalist of Tacoma, Wash., General J. M. Ashton, has acquired a valuable group of properties, and has already taken steps in the direction of erecting buildings and cutting trails. A contract for opening a trail in the form of a loop, for the distance of five miles, and passing through all of the properties, has lately been awarded. The showings here are large bodies of gold-copper ores, occurring chiefly as sulphides. The copper values run from three to twenty per cent., and the gold about half an ounce. The proximity of the mines to the ocean is a favourable factor in the consideration of their development, and unlike isolated up-country districts, the West Coast will not be obliged to wait for railroad facilities before its mines can be profitably operated.

VERNON.

Referring to the affairs of the Morning Glory Company, our Vernon correspondent writes: A notice, of which I enclose a copy, has been issued to subscribers, and, at a meeting held last Saturday, a party of four Vernonites agreed to put up dollar for dollar with the Portage la Prairie people, three in number, represented by Mr. Body, a large holder in the old company. Efforts will now be made to prove the true value of the claims, and this may result in putting things on a sound basis. The new people are in correspondence with practical men with a view to securing their services for the mine, as the former mine officials are to have no hand in the management. The time specified in the notice is to be extended for a month to enable distant holders to take advantage of the offer therein made. I have much faith in the value of the property and of others in the same vicinity; but, of course, without an adequate working capital nothing can be done. None of the claims have been developed to the depth of 100 feet.

The Pacific Gold Property Company have thrown up their claim on the Grand Times and Hidden Treasure, owing to some disagreement with the contracting parties. No news has as yet reached us as to the intention of the owners of the Blue Jay and the Densy; but steady work is going on in the vicinity of these properties, and a short time may show that we are getting nearer the goal. On one of the claims seven stringers, all carrying free gold, all running in the same direction, have been uncovered within a space of twelve feet.

KAMLOOPS.

(From Our Own Correspondent).

A group of four claims—the Jessie, Raider, Bluebell and Regina—situated on Jacko Lake, have been bonded to London parties. An option to another London syndicate has also been given on the Red Rand and Red Rock claims, at Jamieson Creek. Both these groups are copper-gold ores. Work is being prosecuted vigorously on the Erin and Pothook claims and the Kimberley group. The latter people have lately been following a stringer of clean ore, and expect to strike the main ledge within a few feet. A power whim has been installed on the Erin, and the shaft is down 100 feet. Copper is coming into the ore with no loss of gold, which runs \$20 to the ton. The Pothook looks better than ever. Mr. Tyrell, connected with the Geological Survey, visited the camp in the middle of May.

FAIRVIEW,

(From our own Correspondent.)

The past month has brought to Fairview the assurance of a prosperous summer, and bids fair to realize the hope to which we have clung so tenaciously through a long season of comparative quietness. Many of the claims which were staked during the excitement of last spring are now being prospected, as the assessments are nearly due. This assessment work, if properly done, ought to shew up many of the ledges already known, and may be the means of discovering new and richer veins than anything we have yet discovered. Among the noticeable discoveries recently made are the "Tinhorn," "Blackhawk," and "Mountain Eagle" claims. The strike on the Tinhorn, which I mentioned last month, seems to be far ahead of anything previously known of that mine, and may improve with depth, as I believe it has done up to the present. The Mountain Eagle, which is a claim almost adjoining the Smuggler, has discovered a ledge of light blue quartz, very similar to the Smuggler ore, and containing galena and free gold. I have seen some very handsome specimens from the ledge, which were very rich in galena and iron pyrites.

The Black Hawk is a claim lying near the Joe Dandy mill, and possesses a 30-inch ledge of very fine ore, with stringers of exceedingly rich mineral, galena, free gold and iron pyrites. The Smuggler Company is still pushing on development work; besides an upraise from the end of the tunnel, two drifts are being run in opposite directions along the ledge. The right hand drift is shewing up particularly well, being in ore all the way for its length of fifty feet. Some exceptionally fine samples have been taken from this drift. The left hand drift seems to be skirting the pay-ore, and is now in about forty feet. A strike which has been made on the adjoining claim—the Powis—seems to prove beyond doubt that the ledge is continuous, and also valuable. The machinery for the Stemwinder mine has now arrived, and is fixed in place so that by the time this letter is printed, the mine will be once more in full swing.

The Joe Dandy (Fairview Gold Mining Co.) mill is now running night and day, and has made one clean-up after six days' run, with results which I am not at liberty to particularize, I can say, however, that the average per ton was good enough to pay well.

Capt. Duncan, of Nelson, was here recently with his engineer, Mr. F. Bennetts. They were busy sampling the ore on their Kruger Mountain properties, after which they went back to Nelson intending to return here in a few weeks. Every stage is now bringing mining men to Fairview, and all of them seem well pleased with the prospects of the camp, and the signs of activity which are now apparent.

On Kruger Mountain considerable assessment work is being done, and a rich strike is reported on the Moltke, which lies at the foot of the mountain.

Capt. Duncan has six men at work on the Camulet, which he is working under bond. The International has just been Crown-granted. A large number of claims have been surveyed on the Mountain recently, and a map of the camp will soon be published.

Keremeos still attracts the prospector, and there a good many likely looking claims staked on both sides of the valley.

During the past month there have been a good many sales made in Fairview, both of mineral claims and of mining stocks, and this shows plainly that the tide of prosperity is flowing usward.

RICARDO.

NOTES FROM THE SLOCAN.

(From Our Own Correspondent).

Owing to the bad state of the roads shipping is temporarily suspended from many of the mines in the Slocan, which circumstance alone will account satisfactorily for the decrease in custom returns shown from these parts. The towns are still remarkably quiet for this season of the year, but with the solid backing which they are known to possess no apprehension need be felt for the future. The question of according Provincial assistance to the projected railway up north is here viewed with much disfavour, it being rightly felt that disappointment from that quarter will militate largely against Kootenay investments. The general opinion is, moreover, that revenue raised from mining sources would be more profitably expended in the further opening up of proved territory right at home.

A serious fire occurred at the Payne mine a short time since, which resulted in the total destruction of the ore sheds and adjacent buildings, together with the gasoline engine and crusher. Somewhere about ten thousand dollars worth of damage was done, and in consequence the force has been largely reduced until such time as repairs can be fully executed. The head-gear of the tramway also suffered to a considerable extent, and will have to be reconstructed.

It is gratifying to learn that predictions as to the permanency of the lead-bearing veins are being persistently verified. This time it is the Whitewater ledge which has been exposed, carrying clean ore at a vertical depth of over a thousand feet. The sceptics will soon cease to decry the Slocan as containing merely superficial deposits of mineral when such evidence as this is furnished to the contrary.

An accident occurred at the Three Forks concentrator last week resulting in the collapse of the ore bins, whereby a thousand tons of ore was projected into the concentrator and a loss approaching three thousand dollars incurred in remedying this state of affairs. Owing to the non-operation of the mill the bins were full at the time, and apparently failed to withstand the heavy strain.

The Idaho mine is again to the front with a dividend of \$24,000, making \$264,000 altogether. When will investors begin to realize the fact that silver mining in the Slocan is far more remunerative from every standpoint than the average gold mine located elsewhere in the Province.

One of the features of the month has been the promising discoveries at the Mollie Hughes, situate on the lake shore, one mile north from New Denver. This property is under bond to a strong English company, and its present excellent showing is in great measure due to their exertions. The ore consists essentially of quartz, through which is disseminated highly argentiferous grey copper, with a sprinkling of galena, blende and pyrites. From the decomposition of the copper contents the ore near the surface presents a most brilliant appearance, and is without doubt as handsome to look at as any in the Province. This is fortunately not its only recommendation; it is characterized, as before mentioned, by extreme richness, and we all

sincerely hope permanency as well. Several tons have already been taken out, and the ore is being carefully sacked in strong canvas bags to prevent the loss of the friable but exceedingly valuable grey copper. The mine promises to become an important producer, and a trial shipment will shortly be made to determine the value of the ore in bulk.

It is worthy of mention that the hill on which this property is located, though oft prospected and pronounced barren, is now, as the result of renewed and more systematic efforts, disclosing other valuable ore bodies. It seems that the reproach which New Denver has long laboured under of having no mines at her doors will soon be a thing of the past, as developments have unearthed at least half a dozen properties which present every appearance of becoming paying mines, within a mile or two of the town.

Operations on an extensive scale will commence at the California as soon as ever the snow will permit, while at the Fidelity work is still being prosecuted with uniformly favourable results.

The waggon road up Springer Creek, so long sought, is now within measurable distance of being constructed. Through the unceasing efforts of those interested, the Government have been induced to contribute \$3,500, conditional on a similar amount being raised in the district, which there is every reason to believe can be easily done. It must be frankly admitted that the appropriation is well deserved, and subsequent activity will more than repay the initial outlay.

H. W.

KASLO, B.C.

(From our own Correspondent.)

In the Slocan little has occurred lately. The Slocan Star and Ruth have resumed shipments. The Whitewater Deep has decided to install a compressor plant, using the water from Whitewater Creek for power, and with the aid of such plant to drive an 1,800 foot tunnel which will tap the vein some 1,500 feet deep. The Payne's upper terminal of tramway has been destroyed by fire, but is now almost reconstructed. A rumour is afloat of a strike in the Noble Five, but this has not yet been confirmed. A strike is reported upon the Woodberry Creek property recently under bond to L. A. Scowden, of five feet of solid galena. This is another example of the great chances that always exist in mining development. All accounts confirm the opinion that Mr. Scowden's development was done judiciously, yet the results were insufficient to warrant further payments and consequently the project was abandoned after very considerable outlay of money.

The development in the "Star," particularly in the east end, is proving most satisfactory, and the mill never had better ore to grind on than now.

CARIBOO CREEK—ARROW LAKE.

The properties upon this creek to which our Rosslaud correspondent lately paid a visit, are reported by him to be looking extremely well. Work has been done on nearly all of them, throughout the winter. The tunnel of the Promistora, which mine has been reported on by the late Government Mineralogist, W. A. Carlyle, is in 300 feet, and is on the ledge. At the end a very fine showing is visible. It is under working bond to Jas. Brady, for \$50,000. This mine is at present unstocked. The Duchess and Chieftain have a total of 600 feet of drifting, etc., completed, and has a force of men hard at work. The Silver Queen and Winnipeg-Eureka are hardly behind, and the Golden Hope, the chief claim of the Cariboo Creek Mining & Development Company, is having work pressed upon it continuously, notwithstanding the fact that owing to the badness of the trails, resulting from the melting snows, the men on the Golden Hope mountain are practically in a state of siege, shut off from the outside world. Many of these properties have so fine a showing that there would exist no insuperable difficulties to get the pioneers of the camp to work them on shares. Our correspondent heard it stated while there, that a London syndicate had been formed, who were about to expend \$10,000 in proving whether the placer gold *in situ* would pay for the expense of hydraulicizing it out. There are good hotels at Burton and at Mineral. There will be no difficulty in obtaining either supplies or packing on the creek itself, thereby saving much labour and money. Quite a number of prospectors are covering the hills, who hope to locate prospects to prove as good as the mines already Crown granted and at work.

EAST KOOTENAY.

(From Our Own Correspondent.)

The Dibble Group—Work will be resumed on the Dibble group under the management of Mr. Hodge, of Nelson, who is now at Fort Steele sending up necessary supplies. The Dibble group is situated on Shingle Creek, and is eight miles south-east of Fort Steele, and is owned by the Hon. Mr. Foster, ex-Minister of Finance. The ore shows high values in silver, gold and copper, assays having been obtained as high as \$1,000 per ton. A smelter test of five tons of picked ore showed a value of considerably over \$100 per ton.

Wild Horse Creek will this summer be the scene of large placer mining activity. It is the intention of the Invicta and Nip and Tuck Companies to increase their already large plants. Three newly-organized placer companies will also operate on Brewery Caek, a tributary of Wild Horse. Messrs. Polson & Jennings are meanwhile installing a pumping plant, and prospect shafts will be sunk to determine the value of the leases before hydraulicizing operations are commenced. On the Coronada group, situated on the East Fork of Wild Horse, the result of development work performed during the winter months has demonstrated the existence of a large body of ore on the claims. The ore carries values in gold, silver and copper, and runs from \$30 to \$100 per ton.

Franz Creek—On the Estella group work has been going on all last winter, and the lower tunnel driven to a distance of 50 feet, which will tap the lead at a distance of 100 feet. Results from the old tunnel, which was 200 feet in length, showed over four feet of ore running high in silver, gold and copper, the assays of which varied from \$80 to \$200 per ton. The Wasa and Mammoth claims are in over 100 feet, and show high grade gold, silver and copper ore.

The North Star—Development work has been recommenced on the North Star, work having been retarded considerably by the late melting of the snow. Good showings of galena are to be found on the North Star, Midnight, Stenewall, Jackson and Stenwinder claims.

Sullivan Group—Work will shortly be recommenced on this group, Mr. Hogan having come in for the purpose of making the necessary arrangements. The two shafts—40 and 70 feet deep respectively—both show six feet of galena.

Pyramid Kootenay—These properties are situated some twelve miles west of the North Star group, on Alki Creek. Work will be resumed as soon as the snow will permit. Captain Petel has already crown-granted several claims and interests, and intends to obtain deeds for some twenty more claims in the same group this summer. This group is a gold and copper proposition, and shows large ledges of low grade copper. The St. Mary's district will likely prove one of the richest of East Kootenay's camps within the next few months.

Moyai Lake—Mr. Cronin, of the St. Eugene, has started work. The work already completed consists of 800 feet of tunnelling. Already some 10,000 tons of galena are on the dumps, the assays of which average \$60 per ton.

Moyai River—Mr. McVittie has charge of the Moyai Placer Company, and has put on a large gang of men. Excellent prospects have been made on the property. The gravel is easily worked, and abundance of additional water is available.

PUBLICATIONS.

"THE Mineral Wealth of Canada," by Arthur B. Wilcott, M.A., B.Sc., Professor of Natural Science, McMaster University; formerly Assistant in Mineralogy, Harvard University; William Briggs, Toronto; 1897. Pages, 401; Price, \$1.

This book is intended as a guide to students of economic geology. The author having lectured on this subject for several years, publishes his notes in volume form, and gives them additional value by serving them to the public garnished with extracts from the several excellent reports of the geological survey of Canada, the Provincial Departments of Mines, and excerpts from Rothwell's "Mining Industry," and other works of the same kind; in fact, the "Mineral Wealth of Canada"—although, by the way, it is rather unfortunate that the title should so nearly resemble that by which Dr. Dawson's admirable report is known—is both an excellent text book and a valuable and convenient work of reference as far as it goes. It can, perhaps, lay little claim to originality, except in the matter of the spelling of technical terms, which is decidedly novel. Thus.

"sulphide" is given as "sulfid," and "oxide," "oxid." Notwithstanding that these presumably phonetic changes have been recommended by the chemical section of the American Association, they certainly appear somewhat distressful in print.

The Rossland Miner Printing & Publishing Co. Ltd. have issued this month an excellent map of 34x32 inches, and printed in thirteen colours, giving a bird's-eye view of Rossland and the adjacent country, covering an area of twenty-five miles. The position of over four hundred of the principal mines and claims in this district, the rail-roads, waggon roads and trails are thus clearly shown, and the compilers have even carried painstaking to such lengths as to indicate by marks such mines as are equipped with compressor plants, or where there are dumps. The map, indeed, reflects great credit on the enterprise of its publishers, and we can confidently recommend it to those anxious to obtain an accurate idea of the relative locations of the Rossland mines.

We are in receipt this month of the monthly returns of the Coolgardie Chamber of Mines for February and the West Australian Chamber of Mines' report for March. These show the West Australian gold shipments for February to be (inclusive of alluvial) 53,739 ounces; and the mill returns for the same month (exclusive of alluvial) 60,680½ ounces. In March the crushings of companies making returns show 37,894 tons treated, giving an average yield of 1 oz. 1.9 dwts. per ton. The total gold recovered was 52,870 ozs. 16 dwts., against 48,818 ozs. 19 dwts., and 49,886 ozs. 17 dwts. for the two previous months.

Mr. Harry Bush, M.E., late of Australia, and of Johannesburg, South Africa, has written a report contained in a brochure of some half dozen pages, on the "Lardeau and Cariboo Creek Mining Divisions of West Kootenay," from information "collected by careful investigation and personal examination." Speaking of the Silver Cup mine, near Trout Lake, Mr. Bush finds occasion to criticize the Horne-Payne Company very severely. He says: "Development work is being pushed, and ore is being shipped continuously from the Silver Cup mine. The vein matter is largely impregnated with grey copper, carrying high value in silver. Although money has been expended lavishly, the results are not so encouraging as they might have been under more effective management. Claims have been bonded by the company in the immediate vicinity, and many of these have, after unnecessary and unworkmanlike expenditure, been abandoned only to be taken up again and worked to advantage. The Horne-Payne Company have extended their operations all through British Columbia with dire results, all this having a bad effect. Gross incapacity in direction of affairs, total want of mining knowledge and the employment of superintendents without experience, and, worse still, the purchase of mining areas without mesits at big figures and the set determination to wilfully throw money away without even the slightest possibility of any return, is the only success that those directing this unfortunate concern can boast of. Monuments of failure where success was impossible are distributed in various districts, notably the Illicilliwaet, all contributed by the Horne-Payne Syndicate, and to the like concerns all mining districts are subject to bad odor. English companies should use more diligence in their choice of management and then losses would be less. The above company has evidently been inaugurated to dispense with the company's capital as quickly as possible and with the least tangible results, and this only needs inspection by any mining authority to verify the statement. When this syndicate has exhausted all its resources in bad investments, and still worse mining development, the districts where the expenditure had taken place will suffer untold criticism without desert. Canada were better without English companies, if power be vested in incompetent and extravagant managers."

CATALOGUES AND CIRCULARS.

The F. M. Davis Iron Works Co. of Denver, Colorado, have issued their illustrated Catalogue No. 18 devoted to milling machinery. This is a very comprehensive trade publication and price list and contains descriptions of all the most modern milling and concentrating devices, including automatic ore feeders, improved rock breakers, sampling and speed crushing rolls, elevators, conveyors, etc., etc.

A new catalogue for 1898 has been brought out by the Messrs. Wm. Ainsworth, of Denver, Colorado, the well-known manufacturers of assay and analytical balances. This firm has deservedly earned a reputation for the taste displayed in the appearance of their catalogues and the present issue is well up to the excellence of the general standard. It contains a number of illustrations of all classes of balances from the No. 1 Special button balance, with a sensibility of 1-200 milligramme, costing \$250, to the pulp balance, sensibility ½ milligramme and costing only \$17.

MAY DIVIDENDS.

On Monday the 7th inst. the Idaho, Slocan paid a dividend of \$24,000, making a total of \$264,000 to date.

The Cariboo Gold Mining & Milling Company of Camp McKinney has declared the eighteenth dividend of \$16,000, or shareholders have thus received \$204,965 since the first dividend was paid by the Company in February, 1895. Last year the dividends aggregated \$84,000. Notwithstanding this eminently satisfactory showing the price of shares continues to rise very slowly.

OBITUARY.

Mr. T. H. Hobson, a son of Mr. J. B. Hobson of the Cariboo Consolidated Company of Cariboo, met with a fatal accident this month while piping at the Horseshoe Bar hydraulic mine, in Placer County, California. Losing control of the monitor he was thrown forward some distance and whilst attempting to rise he was struck in the back by the powerful stream of water issuing from the nozzle of the monitor, death instantly resulting.

ANSWERS TO CORRESPONDENTS.

It has been necessary, owing to the pressure on space this month, to leave out our "Answers to Correspondents" column. All enquiries have been therefore replied to by letter.

A CANADIAN MINT.

A SUGGESTION.

TO THE EDITOR:—Straw matting can be purchased in Canton, China from the manufacturers at \$4 to \$6 per roll, ordinary width forty yards on the roll. In gold money the price quoted is equivalent to \$1.88 to \$2.82. The price on the Kootenays is \$10 per roll. There is a five per cent export duty from China and a twenty-five per cent import duty in Canada. There is also freight and insurance middleman's and retailer's profit to be reckoned with. The balance must be put down to the variable rate of exchange liable at any time to wipe out any narrow margin of profit and convert the transaction into a loss.

The new China loan was proffered by the Government of Great Britain at three per cent. The Tsung le Yamen accepted the tender of the Hong Kong and Shanghai bank to raise the money locally at four and a half per cent. The Saturday Review says it cannot understand China's action. It is simple. Some time since the island of Hong Kong, raising a small loan, came to the alternative decision. Shortly after a slump in the value of silver caused the interest of the borrowed money payable in England in gold, to be greater than the nominally larger interest payable locally in silver. China has learnt the lesson.

The British mint supplies the trade centres in China and in the Straits Settlements with a subsidiary silver coinage, insufficient in amount. In 1882 in Singapore the every-day money used in local trade was either notes of small denominations or Mexican silver dollars. Shortly afterwards the American trade dollar was put largely in circulation. The Japanese yen or dollar was rare. Of the three dollars the Japanese was the best minted, the Mexican the worst, having a very imperfect milling; the American trade dollar having the highest intrinsic value. The American trade dollar as is well known, was a dollar issued to be used in the foreign trade of the United States with silver using countries. The issue being withdrawn. The Mexican dollar has almost exclusively become the circulating medium of China and the Straits. The cost of its excellent minting has been against the Japanese yen. The cost of minting has also militated against the issue of silver dollars by the imperial mints of North and South China.

Now the Chinese who occupy almost exclusively their own country, who are numerically stronger than the natives in Singapore, Johore, Penang and Perack, who are the financial clerks of the Japanese firms, while they use the silver dollars keep their accounts in taels, mace, candareen and li. Excepting this last, which is the ordinary brass cash varying according to its purity from 960 to 1450 to the dollar (Mexican) all the rest are denominations in weights having no equivalent in coin. Take the dollar, occasionally coined by the Canton mint; on its face it bears its weights in mace, candareen and li. Similarly the smaller coinage bears each its own legend of weight. Thus there are coined five, ten, twenty-five and fifty cent pieces of money each representing a compound fraction of the mace or candareen. The system is further complicated by the value of the taels in use, of which the chief are the Canton, Shanghai and Haekwan taels. The last is the tael of the Foreign Customs, in which the trade returns are invariably made out. The weight represented in the Mexican dollar money usually varies from \$1.31 to \$1.58.

Not that this system troubles John Chinaman. He simply weighs his silver, entering the result in his commercial books. The only thing that he insists upon is that the silver should be of a certain fineness. Consequently a broken fragment of a dollar is worth exactly the fraction its weight is of the dollar. To make sure of the fineness of the silver each Chinese merchant places a "chop," a mark made with a steel stamp, upon each coin. Each merchant has his own distinctive chop. Hence, should a coin be spurious, the merchant thus marking the coin renders himself liable to make it good. Hence "chop" dollars are seldom bad. When so found it will be discovered that the one or two chops upon them are also spurious. The "chop" system however, only applies to South China, neither in the Straits or North China does it prevail. The boards of trade have set their faces against the practice and insist that the mint stamp should be taken as sufficient guarantee of the fineness of the silver.

Paper money, except in the form of checks is not issued by the Chinese. Hence it will be seen that there exists a vast market for silver. Of this market the Mexican mint enjoys almost exclusive privileges. Yet Mexico has little or no trade with the Far East. Canada on the contrary, has a considerable trade import with the Celestials.

One of the contentions of the silver party in the United States is that if that country would only go on a bi-metallic basis it could capture the trade of the silver using countries of the world. Many financiers are of the same opinion. It is not necessary in order to supply China with silver to go on a silver basis. It is necessary however, that this country should establish a mint and coin dollars on the line of the Mexican dollar, not to be used in this country, but to be used in its China trade as the trade dollar was used. The trade dollar was an immediate success in the Orient. The silver party declare it was only withdrawn for political reasons. Be that as it may, there exists no apparent reason why Canada should not take its proper place as a silver producing country in supplying the greatest silver market in the world.

If that Canadian mint had been established years since the China loan would have been the affair of our own financiers. If it were established to-day the British directors of the Hong Kong and Shanghai bank would come to us and not to Mexico for the necessary bullion. Such an idea would be the making of the Slocan country.

Rossland, B.C.

ALFRED W. DYER.

SHIPPING MINES.

ROSSLAND.

Following are the ore shipments from the mines adjacent to Rossland from January 1 to May 14, 1898:

	Tons.
Le Roi	21,559
War Eagle	4,736
Centre Star	760
Poorman	453
Iron Mask	1,305
Cliff	140
Velvet	350
Total	29,413

The shipments from this camp for the month show an increase of nearly 50 per cent. over the shipments for the corresponding period of last year.

THE SLOCAN.

The ore shipped over the K. & S. Railway for April aggregated 2,241,610 lbs. The value and contents in silver

and lead of the ore cleared at the port of Kaslo, including all ore shipped from the Slocan via Nakusp during the month of April, 1898, is as follows:

Via Kaslo—

Gross lbs. ore	1,891,000
Value	\$ 63,326
Pounds lead	733,340
Ounces silver	87,273

Shipped via Nakusp—

Gross lbs. ore	1,212,161
Value	\$ 43,475
Pounds lead	594,659
Ounces silver	61,616

Value of total shipments via Kaslo & Nakusp during April:

Pounds ore	1,103,161
Value	\$ 106,721
Pounds lead	1,327,090
Ounces silver	148,889

THE STOCK MARKET.

QUITE a volume of business has been done by brokers during the month of May.

In the Rossland camp the most important deal that has ever taken place in connection with B.C. mines, was the sale of the Le Roi, for \$3,000,000, to the British America corporation. This transaction will draw greater attention than ever to the Trail Creek camp. Some very large blocks of Josie shares have changed hands at 28 cents, and Monte Cristo shares have been in great demand at 20 to 21 cents. Deer Park shares have also been in good request at 13 to 14 cents, and it is rumoured that Grand Prize shares are being bought up by certain parties who desire to control the mine. Those who bought War Eagle two or three months ago, at \$1 per share, can readily sell at \$1.40 to \$1.45 to-day, and there are very few War Eagle shares offering in the West, the price gradually rising. Iron Mask is also a great favourite in the camp, and any offering at 40 cents are immediately bought up. This stock is also on the rise, and is held firmly in the neighbourhood of 45 cents. Virginia too, has been in great request.

Owing to the fact that the Nest Egg Fire Fly Company secured judgment against the Rand Drill Company for something in the neighbourhood of \$7,000, this stock is getting firmer, and it is also rumoured that there are chances of a sale of this valuable property, which would give the shareholders about nine or ten cents per share if the deal goes through.

In the Cariboo district there has been a good demand for Cariboo Hydraulic, but brokers have found it difficult to fill orders at prices bid.

In the Fairview camp several sales of Tinhorn have taken place at 14 to 15 cents, and a few parcels of Winchester have been offering at 15 to 16 cents.

The Cariboo of Camp McKinney paid a dividend of two cents per share early in May, which created some demand for that stock, and several blocks changed hands in the neighbourhood of 52 to 53 cents.

In the Lillooet district, Golden Cache has been offered at 50 cents per share by some parties who were obliged to realize, but we are informed that the Company is putting in ten more stamps, and that the 20-stamp mill will soon be in operation, when it is generally expected that Golden Cache will soon take a big jump in price.

On Texada Island it is reported that a smelter will either be built on the Island, or at Vancouver, to smelt the Van Anda ore, and some good sales of Van Anda stock have been made at about four to five cents.

It is reported that the Victoria-Texada property is under bond for a price in the neighbourhood of \$75,000. Some sales of Victoria-Texada stock have recently taken place at a low figure—about five cents.

Arrangements have been made to erect a stamp mill on the Alberni-Consolidated mine on Vancouver Island, and if everything proves satisfactory, it is expected the result will be the sale of the property for \$150,000, or \$50,000 cash, and 25 per cent. stock of an English Company.

Slocan and Nelson stocks have been quiet during the month of May. There has been a decided drop in Dardanelles, and some sales have taken place as low as five to six cents. Kaslo Montezuma has fallen from 25 to 11. Noble Five remains steady at 18 to 19, and is looked upon as a capital buy at these figures. It is expected that Slocan stocks will be in great demand in the near future.

INDUSTRIAL NOTES.

THE Pelton Water Wheel Co. have under construction a power plant for the British Columbia Railway Co.—the most notable installation of the kind in the Northwest. The power station is located at Goldstream, some twelve miles from Victoria, and the water supply is furnished from the Esquimalt water works system. The plant consists of two 38-inch D. N. Pelton wheels, 600 h.p. each, running at 600 revs. under 590 feet head. The wheels are direct-connected to Canadian General Electric generators by insulated couplings. The power thus generated is to be transmitted to Victoria at a pressure of 10,000 volts, and used in connection with the street railway and electric light works.

In the Slocan several mines are installing new machinery, notably the Noble Five, for which a seven drill compressor plant has been ordered. In Ainsworth district a mill is to be built on the Highlander mine. The Jenckes Machine Co. received the order from the B. C. Gold Fields Co. for a ten-stamp battery complete with two vanners, two ore feeders, grizzly, Blake-Marsden crusher, and all the various apparatus making up a complete modern milling plant for the Ymir mine.

The Canadiau Rand Drill Co. has sold to R. O. Jennings, Fort Steele, B.C., a big power pump for use in the hydraulic mining plant which the Jennings Company is installing on Brewery Creek.

In Boundary Creek a number of properties are being equipped with machinery and, this is the most important indication that the camp has passed through the first stage of development. The British Columbia Copper Co. of Anaconda, B.C., owning the Mother Lode in Deadwood Camp, recently ordered from the James Cooper Mfg. Co., Limited, Montreal, an Ingersoll-Sergeant ten-drill compressor plant, complete with ten drills, battery of boilers, Lindgerwood hoisting engines, pumps and heaters. A large pumping plant is also to be installed on the Old Ironsides in Greenwood Camp. A machine drill has been shipped to Camp McKinney for the Minahaha, and on the 15th of the month the machinery of a 20-stamp mill for the Smuggler mine at Fairview was shipped by the Jenckes Machine Co. of Sherbrooke, Quebec.

The Canadian General Electric Co. is supplying a 100 horse-power synchronising motor, and a 50 horse-power induction motor for the works of the B.C. Bullion Extracting Co. near Rossland. This manufacturing company has also contracted to equip a number of steamers now being built for the Yukon trade with incandescent lights.

An Ingersoll-Sergeant 12-drill compressor is to be used for supplying power to the Nickle Plate and Great Western mines in the Rossland camp. The present equipment is two small steam hoists.

The Rossland *Miner* gives the following interesting description of the large steel gallows—the largest in the world by-the-way—which are to be built at the War Eagle mine:

"The frame will cost \$25,000 and will have a capacity of 1,000 tons per day.

"From the ground to the axle of the head pulley will be 100 feet, and the shaft house building will be 120 feet high and 180 feet long. The frame is to be constructed at the mouth of the new shaft, which will be sunk from the summit of the hill at rear end of the present main tunnel. It is through the new shaft, by means of the new gallows, that all the mine will be operated, and the magnitude of the plant can be understood when it is remembered that it will be of sufficient capacity to reach the 3,000-foot level. It is not in size alone that the new frame will establish a record, for in devices for the economic handling of ore it will surpass anything in existence. In connection with three big ore bins—one for waste, one for sorting ore and one for the first-class product of the mine. The mouths of these will be located two-thirds of the way up the gallows, underneath the skip way. As the loaded skip reaches the mouth of the bins its contents will be dumped into the proper bin, and the skip itself is ready to return underground. The sorting ore, after being dumped, is passed by gravity over a fine grizzly, separating the smaller portions, which fall into the first class bin, and are smelted with the high grade product. Continuing on its way downwards the sorting ore then passes through a grizzly with six-inch spaces. The rock too large to pass the grizzly falls upon the sorting floor, where it roughly hand picked, and then it is passed through a big Gates crusher which reduces it to the standard size, and forwards it to a self feeder, where it meets the ore that passed through the second grizzly. From the self feeder the ore, now of a uniform size, falls upon an endless belt that carries it past the sorters, who pick out the waste and permit the ore to fall into the main receiving bin, where it is ready to be dumped into cars. Throughout the whole operation, the ore will be practically handled and sorted automatically. The skips two in number, with a capacity of three tons each, are now being made by the Anaconda company at Butte. They will weigh two tons each and will be equipped both with a hood and a safety clutch to prevent accidents in case the cable breaks. It is purposed eventually to place skeleton cages beneath the skips for the use of the miners."

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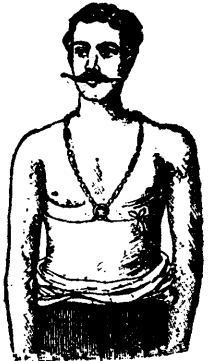
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CORRESPONDENCE SOLICITED

715 Heatley Avenue,

VANCOUVER, B.C.

Mining Stocks.

Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C., May 18, '08

Company.	Capital.	Par Value.	Price.
TRAIL CREEK.			
Alberta.....	\$1,000,000	\$1	\$ 5
Big Three.....	3,500,000	1	9
Bruce.....	1,000,000	1	10
Butte.....	1,000,000	1	02
Caledonia Con.....	1,000,000	1	5½
California.....	2,500,000	1	15
Camp Bird.....	1,000,000	1	06
Celtic Queen.....	750,000	1	03
Centre Star.....	500,000	1	3 60
Commander.....	500,000	1	13
Deer Park.....	1,000,000	1	14
Enterprise.....	1,000,000	1	20
Evening Star.....	1,000,000	1	06
Georgia.....	1,000,000	1	10
Gertrude.....	500,000	1	11
Golden Drip.....	500,000	1	15
Great Western.....	1,000,000	1	10
Hattie Brown.....	1,000,000	1	03
High Ore.....	500,000	1	04
Imperial.....	1,000,000	1	10
Iron Horse.....	1,000,000	1	20
Iron Mask.....	500,000	1	45
I.X.L.....	1,000,000	5	10
Josie.....	700,000	1	31
Jumbo.....	500,000	1	70
Le Roi.....	2,500,000	1	6 50
Lilly May.....	1,000,000	1	20
Mabel.....	1,000,000	1	15
Mayflower.....	1,000,000	1	10
Monita.....	750,000	1	19
Monte Cristo.....	1,000,000	1	21
Morning Star.....	1,000,000	1	09
Nest Egg-Firefly.....	1,000,000	1	10
Northern Belle.....	1,000,000	1	10
Novelty.....	1,000,000	1	05
Palo Alto.....	1,000,000	1	05
Phoenix.....	500,000	1	12
Poorman.....	500,000	1	10
Red Mountain View.....	1,000,000	1	11
Roseland, Red Mountain.....	1,000,000	1	22
St. Elmo.....	1,000,000	1	05
St. Paul.....	1,000,000	1	12½
Silverine.....	500,000	1	06
Virginia.....	500,000	1	25
War Eagle Consolidated.....	2,000,000	1	1 60
West Le Roi.....	500,000	1	28
White Bear.....	2,000,000	1	19
AINSWORTH, NELSON AND SLOCAN.			
American Boy.....	1,000,000	1	15
Arlington.....	1,000,000	1	10
Argo.....	100,000	0 10	10
Athabasca.....	1,000,000	1	35
Black Hills.....	100,000	0 10	10
Buffalo of Slocan.....	150,000	0 25	—
Canadian M. M. and S. Co.....	2,000,000	1	07½
Cumberland.....	500,000	10	—
Dundee.....	1,000,000	1	75
Dardanelles.....	1,000,000	1	10
Dellie.....	750,000	1	12
Eidon.....	1,000,000	1	05
Eilen.....	1,000,000	1	07½
Eikhorn.....	1,000,000	1	10
Exchequer.....	1,000,000	1	10
Fern Gold.....	200,000	0 25	75
Goodenough.....	800,000	1	25
Gibson.....	650,000	1	17½
Grey Eagle.....	750,000	1	—
Hall Mines.....	300,000	£1	—
Idler.....	1,000,000	1	12½
Kasio-Montezuma.....	1,250,000	1	14
London.....	150,000	25	25
Minnesota.....	1,000,000	1	—
Nelson-Poorman.....	250,000	0 25	25
Northern Light.....	250,000	1	16½
Noble Five Con.....	1,200,000	1	19
Ottawa and Ivanhoe.....	1,000,000	1	12½
Payne.....	2,500,000	2 50	—
Phoenix Consolidated.....	1,000,000	1	07
Rambler Con.....	1,000,000	1	23
Reco.....	1,000,000	1	1 50
Slocan-Reciprocity.....	1,000,000	1	06
Slocan Star.....	250,000	50	2 10
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	05
Sunshine.....	500,000	10	—
Two Friends.....	240,000	30	17
Washington.....	1,000,000	1	25
Wonderful.....	1,000,000	1	05
LARDEAU.			
Consolidated Sable Creek Mining Co.....	1,500,000	1	10
TEXADA ISLAND.			
Texada Proprietary.....	250,000	25	25
Van Anda.....	5,000,000	1	4
Victoria-Texada.....	150,000	0 25	10
Texada Kirk Lake.....	600,000	1	1 00
Vaven.....	1,000,000	1	10
Gold Bar.....	100,000	0 10	10

VANCOUVER ISLAND.			
Alberni Mountain Rose.....	250,000	1	06½
Consolidated Alberni.....	500,000	1	12
Mineral Creek.....	500,000	1	05½
Mineral Hill.....	750,000	1	05
Quadra.....	500,000	1	10
CARIBOO.			
Cariboo Gold Fields Ld.....	£100,000		
Cariboo Hydraulic Consolidated.....	\$5,000,000	1	85
Horsefly Hydraulic.....	200,000		
Horsefly Gold Mining Co.....	1,000,000	10	2 00
Cariboo M. & D. Co.....	300,000	1	25
Golden River Queanelle.....	£2350,000	£1	
Victoria Hydraulic.....	300,000	1	85
LILLOOET DISTRICT.			
Golden Cache.....	500,000	1	70
Alpha Bell.....	500,000	1	50
Cayoosh Creek Mines.....	500,000	1	50
Lillooet Gold Reefs.....	200,000	25	25
Excelsior.....	500,000	1	50
FAIRVIEW CAMP.			
Tin Horn.....	200,000	0 25	15
Winchester.....	250,000	0 25	22
BOUNDARY.			
Old Ironsides.....	1,000,000	1	15
Golden Crown.....	1,500,000	1	20
CAMP MCKINNEY.			
Cariboo.....	800,000	1	53
Minnehaha.....			17

‡ Dividends paid to date are as follows: Trail Creek District—Le Roi, \$225,000; War Eagle (old company), \$217,000. Camp McKinney—Cariboo, \$205,000. Nelson District—Hall Mines, £26,750; Fern, \$10,000. Slocan District—Payne, about \$300,000; Slocan Star, \$400,000; Reco, \$287,000; Idaho, \$240,000; Whitewater, \$154,000; Rambler-Cariboo, \$40,000; Last Chance, \$40,000; Two Friends, \$6,000. Dividends paid since last month's list was made up, Cariboo of Camp McKinney, \$16,000.

STOCK AT PAR.

Thomas Bros. & Grant

Civil, Naval, and Military Tailors.

MANUFACTURERS AND MINERS' OUTFITTERS

Samples and self-measurement forms sent on application by mail.

We carry but one Line of Goods— THE BEST

—LARGEST STOCK OF—

IMPORTED WOOLLENS

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Call or write for prices.

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VICTORIA, B.C.

**A. W. MORE & CO. *
MINING and STOCK BROKERS.**

Codes used: Bedford-McNeill's, Moreing & Neal's, Clough's, and A.B.C., Fourth Edition.

86 Government Street,

VICTORIA, B.C.

TRANSPORTATION COMPANIES.

Canadian Pacific Navigation Co., Ltd.

TIME TABLE NO. 33.

(Taking effect March 1st, 1898.)

VANCOUVER ROUTE.

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

NEW WESTMINSTER ROUTE.

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

FOR PLUMPER PASS—Wednesdays and Fridays at 7 o'clock.
FOR MORESBY AND PENDER ISLANDS—Fridays at 7 o'clock.
LEAVE NEW WESTMINSTER—For Victoria Monday at 13:15 o'clock. Thursday and Saturday at 7 o'clock.

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

FRASER RIVER ROUTE.

Steamer leaves NEW WESTMINSTER for CHILLIWACK and way landings every Tuesday, Thursday and Saturday at 8 o'clock during river navigation.

NORTHERN ROUTE.

Steamships of this Company leave Victoria for Fort Simpson via Vancouver and intermediate ports on the First and Fifteenth of each month, and for Queen Charlotte Islands on the first 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 10th and 20th of each month, and for Quatsino and Cape Scott on 30th.
The Company reserve the right of changing this Time Table at any time without notification.

G. A. CARLETON,
General Agent.

JOHN IRVING,
Manager.

Kaslo & Slocan Railway.

TIME CARD.

Subject to change without notice. Trains run on Pacific standard time

Going west.		Going east.	
Leave 8.00 a.m.	Kaslo	Arrive 8.50 p.m.	
" 8.36 "	South Fork	" 3.15 "	
" 9.36 "	Sproule's	" 2.15 "	
" 9.51 "	Whitewater	" 2.00 "	
" 10.03 "	Bear Lake	" 1.48 "	
" 10.18 "	McGuigan	" 1.33 "	
" 10.38 "	Cody Junction	" 1.12 "	
Arrive 10.50 "	Sandon	Leave 1.00 "	

CODY LINE.

Leave 11.00 a.m.	Sandon	Arrive 11.45 a.m.	
Arrive 11.20 a.m.	Cody	Leave 11.25 a.m.	

ROBT. IRVING,
G. F. & F. A.

GEO. F. COPELAND,
Superintendent.

Spokane Falls & Northern, Nelson and Fort Sheppard, Red Mountain Railways.

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

DAILY EXCEPT SUNDAY.

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

Close connections at Nelson with steamer for Kaslo and all Kootenay Lake points. Passengers for Kettle River and Boundary Creek connect at Marcus with stage daily.

BRITISH COLUMBIA SMELTING & REFINING CO.

BUYERS OF
GOLD, SILVER AND COPPER ORES.

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Mining, Milling, Hoisting, Pumping, Hydraulic and Air Compressin Machinery. Power Generation and Transmission. Twelveyears' experience in the United States of America.

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MINING BROKERS,
AGENTS and CONVEYANCOERS,
ARCHITECTS and CIVIL ENGINEERS

Properties examined and reports made.
First-class Banking and other references.



FAIRVIEW B.C.

The Columbia & Kootenay Steam Navigation Co., Ltd.

TIME TABLE NO. 10.

In effect June 8th, 1896.

ARROWHEAD-TRAIL ROUTE, STEAMER "NAKUSP."

Mouth bound; read down.		North bound; read up	
Son. Wed. Fri.	7 p.m. De ARROWHEAD	Ar 11.30 a.m.	Wed. Fri. Sun
" " "	{11 p.m. Ar} NAKUSP	{De 7.30 a.m.}	" " "
" " "	{12 m. De}	{Ar 6 a.m.}	" " "
Tues. Thurs. Sat.	{9 a.m. Ar} ROBSON	{De 8.30 p.m.}	Tues. Thurs. Sat
" " "	{12 noon De}	{Ar 8 p.m.}	" " "
" " "	2 p.m. Ar TRAIL	De 4.30 p.m.	" " "

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

TRAIL-NORTHPORT ROUTE, STEAMER "TRAIL."

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

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

KOOTENAY LAKE ROUTE, STEAMER "KOKANEE."

Daily except Sun.	{4.00 p.m. De NELSON	Ar 9.30 a.m.}	Daily except Sun.
" " "	{8 p.m. Ar KASLO	De 5.30 a.m.}	" " "

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

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

T. ALLAN,
SECRETARY.

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

International Navigation and Trading Company, Limited.

TIME CARD EFFECTIVE MAY 16, 1898.

Subject to Change without Notice.

S.S. INTERNATIONAL

Leaves Kaslo at 3.30 a.m. every day except Sunday, calling at all way points.

Connects at Five Mile Point with S. F. & N. train at 6.45 a.m., arrives Nelson at 7.20 a.m.,

Leaves Nelson at 5 p.m., connecting at Five Mile Point with train from Spokane, arriving at Kaslo 8.30 p.m.

Connects at Pilot Bay with S.S. Alberta for Bonner's Ferry and Kootenay River points.

S.S. ALBERTA

Leaves Kaslo on arrival of K. & S. train on Saturday and Tuesday, at 5.30 p.m., and Thursday at 6.00 a.m., touching at all way points. Connects at Bonner's Ferry with G. N. trains.

Leaves Bonner's Ferry at 2 p.m. on Sunday, Wednesday and Friday, arriving at Kaslo 1.00 a.m. next day.

Close connection with East Kootenay points via Jennings and Bonner's Ferry.

G. ALEXANDER,
General Manager.

P.O. Box 122, KASLO, B.C.