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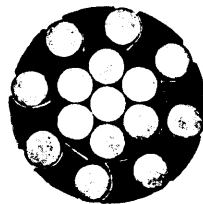
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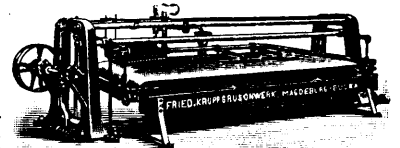
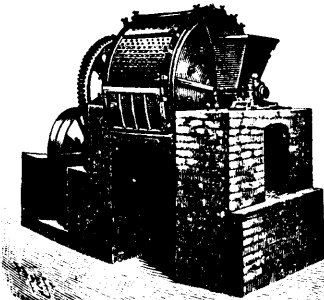
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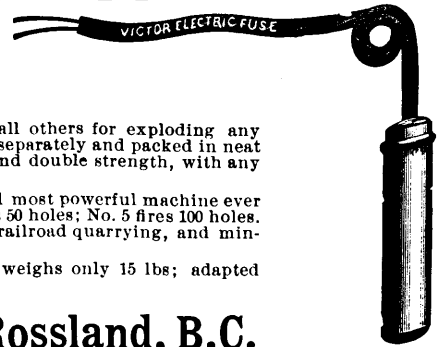
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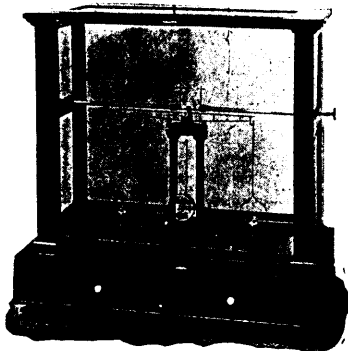
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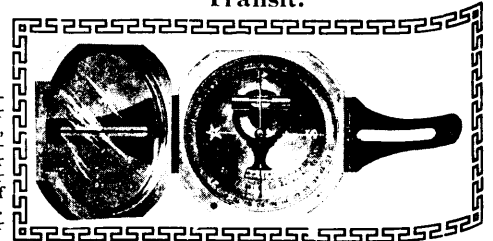
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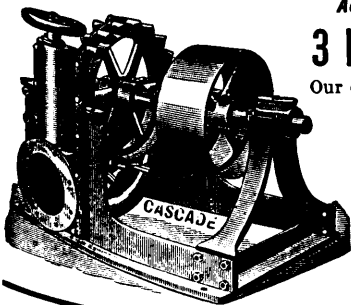
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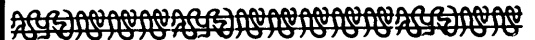


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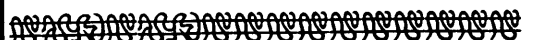
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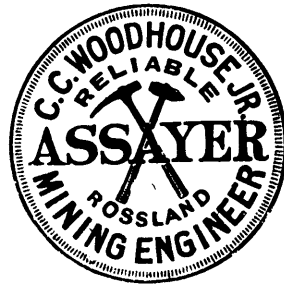
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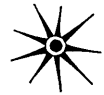
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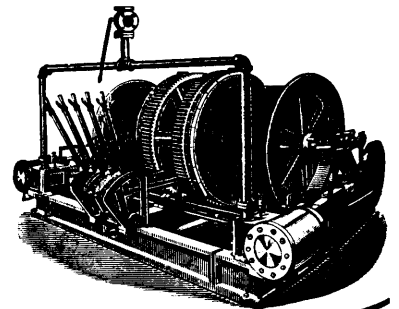
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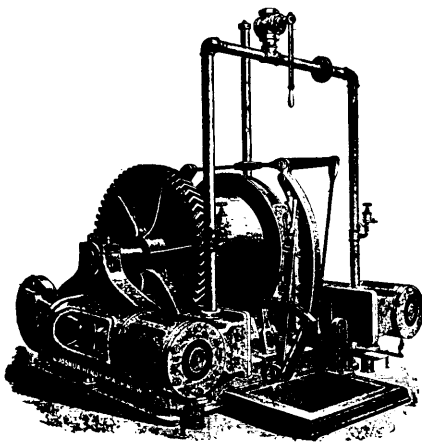
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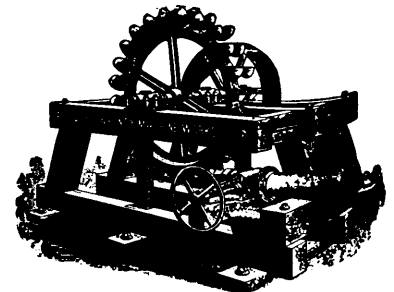
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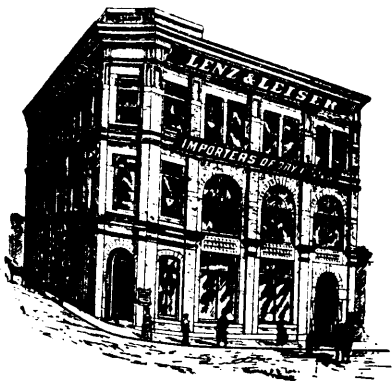
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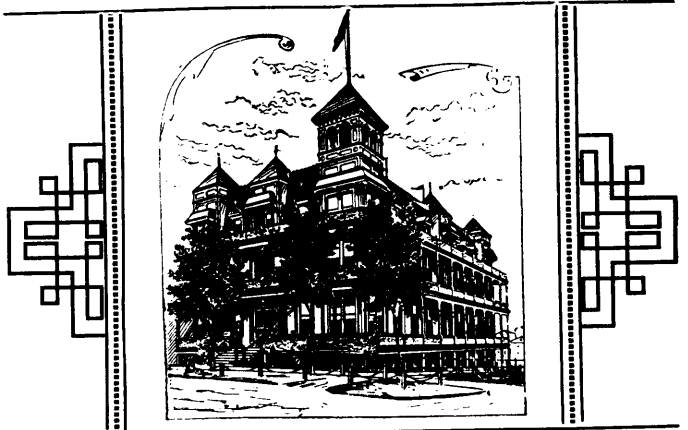
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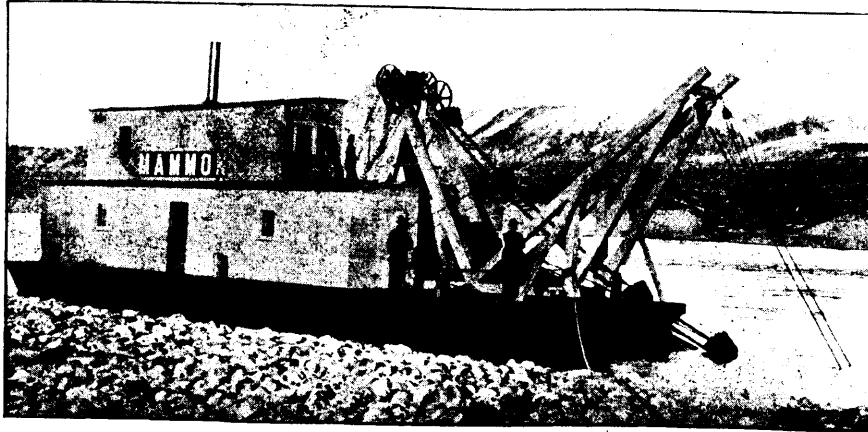


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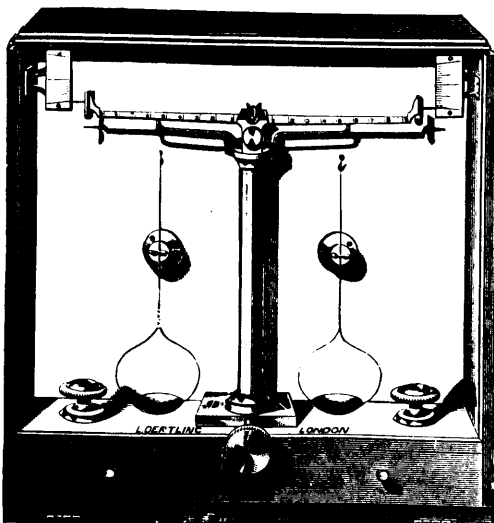
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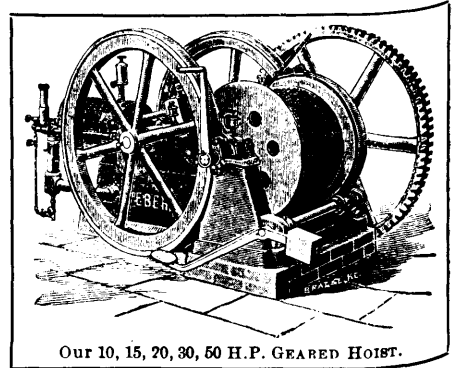
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# The Mining Record.

Vol. IV.

MARCH, 1898.

No. 3

## BRITISH COLUMBIA MINING RECORD.

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BUSINESS MANAGER, B.C. MINING RECORD,  
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### THE MONTH.

**D**URING late years very successful mineral exhibitions, to which large collections of sample ore: from most of the districts of the province were sent, have been held in Spokane, Washington. These exhibitions, being excellently managed and widely advertised, were consequently largely attended by mining men from all parts of northwest America and the British Columbia department invariably claimed a great share of attention and the province's resources were thus made known to better advantage than would have been the case had merely local exhibits been given in British Columbian towns. This year, however, while there certainly is no reason why the usual British Columbia collection should not be sent to Spokane, the conditions are such that the very best results may reasonably be expected to accrue from the holding of an industrial and more particularly a mineral exhibition on a large scale in the province itself. But of course if this is worth doing at all it must needs be well done, and neither time should be lost nor effort spared towards carrying the project to a successful issue. The idea may be elaborated to almost any degree and such special features as lectures on the mineral resources, the mining laws, the opportunities for investment in the country, would, we think, be also highly appreciable. If we accept the estimates that have been published of the number of people who will this spring and summer pass through the province *en route* to the northern gold fields as correct it means that at the lowest computation the influx of strangers will in the aggregate considerably outnumber the present population of British Columbia,

and this gives one a fair conception of what the Klondyke excitement means. It may be safely concluded that a tolerably fair proportion of these visitors—if once they can be brought to see that to those among them possessed of small capital and moderately endowed with the necessary qualities of industry and perseverance the chances of well-directed energy finding its reward are eminently surer here than in the Yukon, will wisely decide to go no further afield. By taking advantage of this mad rush to the frozen north much may be accomplished towards populating our own province with a sturdy and altogether desirable class of settlers. A plan that would certainly, we believe, tend to awaken interest and elicit enquiry we have already submitted, and we commend the suggestion to those whose position in the country and influence would enable them to give it tangible form.

Mr. Carlyle's resignation this month of the important office he has so ably filled for a period now of nearly two years, as Provincial Mineralogist, and his acceptance of the responsible position of consulting engineer and general superintendent to the British America Corporation must of course be included among the notable occurrences of February. While,

perhaps, it will be no easy matter to supply Mr. Carlyle's place in the Bureau of Mines, and to find another his equal in tact, in technical knowledge, in practical experience; one, in short, endowed with the special combination of qualities which fit a man to fill an extremely difficult and sometimes thankless post successfully, we are by no means uncertain that Mr. Carlyle's decision can not be regarded, from the point of view of provincial mining interests, as the best thing that could have happened. As we showed last month, upon the success or failure of the operations of the British America Corporation—the most powerful financial organization yet formed in London to engage in British Columbian mining enterprise—depends very much more than is generally realized the extent in the immediate future of the investments of British capital in the province, and we expressed then the hope that the company's managing director, Mr. MacIntosh, would see the urgent necessity of engaging the services of a mining engineer of unquestionable ability and competence upon whose judgment and advice he might safely rely, and thus reduce to a minimum all chances of loss and disappointment his company might experience. It is, therefore, very gratifying to discover that Mr. MacIntosh had also appreciated the wisdom and advisability of this course and now it only remains for us to congratulate him upon his wise choice of an adviser and on his good fortune in being able to secure one so thoroughly well-qualified to assume the duties. There is, however, one point that to the outsider may appear somewhat remarkable, that Mr. MacIntosh, after deciding to retain the services of a mining engineer, should have continued to buy up properties for the company. We express no opinion

A B.C.  
MINERAL  
EXHIBIT.



of the judiciousness or otherwise of these investments, and doubtless Mr. Macintosh was careful in his negotiations that his own judgment was fully endorsed by the opinions of men of maturer experience; the compliment nevertheless to Mr. Carlyle, who, remember, will be expected to make the properties thus purchased pay, seems to be of a very left-handed character. But obviously this is a matter more directly concerning Mr. Carlyle than anyone else, and it is therefore neither necessary nor perhaps proper to dwell further upon it here.

The question of filling Mr. Carlyle's place as Provincial Mineralogist upon his retirement on the 1st of April is already, we understand, receiving the consideration of the Government, and it is to be hoped that the appointment if possible will fall to one, other

NECESSARY QUALIFICATIONS. conditions being equal, already having some acquaintance with and knowledge of the mining characteristics of the country. It may not

either be out of place to suggest that the appointee should be not only an expert geologist and mineralogist but also in every sense of the word a mining engineer, for it is hardly necessary to point out that the qualifications are distinct and that to be qualified to express an intelligent and correct opinion on the nature and character of rocks or minerals, is not a guarantee of engineering ability. Indeed there is an even wider distinction between the professions of the mineralogist and the mining engineer than between the professions of the physician and the surgeon, though in both cases it is, of course, possible to acquire a sufficient knowledge for the purposes of competency in either branch of these respective studies.

It was, in fact, Mr. Carlyle's special attainments in both callings that so peculiarly fitted him for his official duties under the Department of Mines, and it will be even more imperative in the future than it has been in the past that the office of Provincial Mineralogist should be held by a man of engineering capabilities. We have been asked by a number of correspondents residing in West Kootenay and other districts to suggest the appointment of Mr. Maurice Bucke, M.E., as Mr. Carlyle's successor. Without however, Mr. Bucke's permission we are, of course, not in a position to state whether he would be willing to exchange an extremely lucrative and interesting practice for the responsible and arduous duties appertaining to the official position of Mineralogist to the province, but we may, perhaps, with propriety remark that the professional record Mr. Bucke has made in Kootenay, the high reputation he enjoys, his indomitable energy and ability for hard work, warrant the assumption that his appointment would be popular with the mining community; it is therefore to be hoped that the Government will offer to him the vacant position.

Since the above was written, it is announced that Mr. McConnell, of the Geological Survey of Canada, has been offered and has accepted the appointment of Provincial Mineralogist. Mr. McConnell is a clever geologist and mineralogist.

February has witnessed the organization in Vancouver of a British Columbia Chamber of Mines—an institution that promises to become either a very use-

ful factor in promoting the welfare of mining in the province or—precisely the other thing. At the present writing there is every reason to hope for the best

CHAMBER OF MINES.

results from the future labours of the Chamber although it is rather regrettable that so large a majority of the gentlemen elected to serve on the first executive committee should be residents of the one locality. This will doubtless, however, be remedied in due course and was perhaps under the circumstances unavoidable. At the same time we are strongly of the opinion that the secretary of the provisional committee appointed at last month's meeting should have made it his business to ascertain whether some of the more prominent mining men of the up-country camps would have consented to undertake executive duty as members of the organization if asked to do so. That this was not done or even contemplated may be inferred from the fact that neither Mr. Hirschel Cohen nor Mr. Carlyle who were elected as committeemen to represent Victoria were approached beforehand regarding their willingness to act—a seemingly somewhat extraordinary mode of procedure. The representatives of Vancouver mining interests nevertheless deserve much credit for assuming the initiative in the matter of the organization of the newly instituted Chamber and for pushing it through for all they were worth. But now that a start has been already made it is time to take things rather more coolly and a first step should be to secure the good will and backing of the leading mine owners, managers, engineers and brokers of the Kootenays. *Verbum sap.*

MR. HEINZE AND THE C.P.R. Mr. F. Aug. Heinze's worst enemy would never accuse him of being a fool. He is indeed anything but that, and those who in all simplicity and kindness permitted themselves to pity him as the unfortunate victim of an unholy C.P.R. conspiracy have now discovered how wicked has been the waste of their sympathy, which might verily have been reserved for a far more needful occasion. Mr. Heinze, in fine, has come out of his deal with the C.P.R. with flying colours; he has not only sold his railway and smelter to advantage, getting his own price, but he reserves for himself the lands he received as a subsidy grant from the Government as reward for his enterprise in the Trail Creek district in addition to other valuable property, which may yet bring him in enough to more than cover the amount of his original capital expenditure on these two undertakings. Perhaps Mr. Heinze has to largely thank the Minister of Railways, Mr. Blair, in whose good graces he was fortunate to repose, for the fortunate turn of events in his favour—he has the happy knack of ingratiating himself with the influential—but be this as it may, Mr. Heinze deserves all he has got and he owes his success entirely to his own pluck and energy.

But while one can afford to congratulate Mr. Heinze on the favourable termination of his negotiations with the C.P.R. if recent telegraphic dispatches from Montreal announcing the company's intentions with regard to the operation of the Trail Railway and smelter may be believed, there are much stronger reasons to congratulate the miners and mine owners

of the Rossland camp upon Mr. Heinze's retirement from the scene in order that the "great monopoly" may take his place. In short it is the best thing for Rossland that has happened for many a long day. The policy of the C.P.R., it appears, is to quote from a speech Mr. Shaughnessy, the company's vice-president, is reported to have made, to create traffic by assisting the miners to work the mines profitably. "The C.P.R." he said, "was not going into the smelting business to make money out of it. The company realized that in order to make the mining of lower grade ores abounding in the Trail district profitable it would be necessary to afford miners cheaper transportation and smelting rates, and smelting facilities would be, therefore, provided at cost. It is further understood that the company's charges for the carriage and treatment of ore from the Rossland mines will not exceed \$7.50 per ton—an exceedingly moderate rate, the reduction on former imposts being sufficiently marked to materially alter the conditions heretofore regulating enterprise in the camp. Whether this new tariff will immediately come into force or not until the Crow's Nest road is completed has at the present writing not been stated. It is, meanwhile, very probable that the company will either build a new road altogether over an easier grade into Rossland from Trail or increase the width of the old line from narrow to standard gauge and find a way of improving the gradients. The C.P.R. has been not unjustly stigmatized in the past as a "grasping monopoly"—"the great national highway (man)"—but so far as Kootenay is now concerned *nous avons change tout cela*. The company's rates' tariff is relatively moderate and its service there is in every sense of the word admirable. There can be no objection to even a monopoly if undue advantage is not taken of the powers it conveys.

It is some time since public interest in Canada has been wound up to the present high tension pitch because of a political question; but the situation itself is extraordinary. When the announcement was first made that the Federal Government proposed to grant Messrs. Mackenzie and Mann, a prominent Canadian firm of contractors, the enormous tract of 3,750,000 acres of mineral land in the Yukon as a subsidy for building a railway certainly less than two hundred miles in length from a point on the Stickeen River to Teslin Lake, those who remembered that the leaders of the Liberal party had ever protested against the policy and the principle of wholesale bonusing were unable to find language wherewith to express their astonishment at this very sudden change of front, although of course it was impossible not to be struck with the almost ludicrous example it afforded of the vast gulf between theory and practice. During the past month the question has been well discussed in Parliament and we may expect that within the next few weeks the issue will be finally decided. Meanwhile, no argument has been advanced by the supporters of the measure, so far as we can gather, that is sufficiently convincing to justify or excuse the Government's policy. In fact, the arguments put forward in favour of the scheme savour strongly of "special pleading." A land grant is a very different thing from a cash sub-

sidy, we are told for instance. This is admirably ridiculed by an eastern paper. A farmer returns home and informs his better half that he has secured a magnificent piano worth \$2,500 at a great bargain. "Why, John," she cries, "we can't afford to buy a piano!" "Perhaps not, old woman," the farmer answers, "but this blessed piano don't cost us a cent of money, I jest gave away the farm for it." Apart from the value of the land, which, of course, it would be difficult to estimate—it may be enormous but at any rate it must be considerable—the profits accruing from the operation of this road, over which the greater part of the travel and traffic to and from the northern gold fields will necessarily pass, will repay many times over, if Mr. Ogilvie's predictions concerning the future of the Yukon country are not very far astray, the original cost of construction and other expenditures long before the expiration of the five years during which period the monopoly is conferred on the contractors. These statements can very easily be verified by reference to Mr. Jennings' reports. That, however, there is pressing occasion for the construction of a railway through entirely Canadian or undisputed territory, affording communication to the navigable waters of the interior from the ocean, no one for a moment questions; the wisdom of creating a monopoly of this service may be furthermore admitted; but that the people of the country should derive all the benefits of such a monopoly and that the railroad should be operated and owned by the Government itself is the contention well and ably advanced by sensible men of both political parties. Meanwhile it is sincerely to be hoped that the bill in its present form will not pass the Commons; it is very questionable whether, unless in a very modified shape, it will be accepted by the Senate. The possibility of difficulties and complications arising with the United States with regard to the question of customs impositions at Wrangel, may have the happy effect of determining the Government to pursue a different line of conduct altogether and the action of the province's Premier in dispatching a telegram to Sir Wilfrid Laurier pointing out the necessity of a railway being built from a northerly seaport of British Columbia to Telegraph Creek was extremely well advised.

#### A CHAT WITH MR. HERBERT CARMICHAEL.

"O H, decidedly; British Columbia is gradually gaining a strong recognition in London, and the British public generally have a much better appreciation of the possibilities of our mines than they had a few years ago."

So spoke Mr. Carmichael, the Provincial Assayer, with whom I spent a very pleasant half hour the other day (writes a representative of the MINING RECORD) chatting for the most part on the subject of his recent sojourn in the great cities of England and Scotland, where this past winter he lectured on the resources and the general features of the province.

"While in London I examined the British Columbia section in the Imperial Institute," he continued. "Our mineral exhibit is not as up-to-date or as well classified as it will be in the future when the Department of Mines get their new mineral museum in order; duplicate samples from all our principal mines will then be sent to the Imperial Institute and ex-

hibited in the most advantageous manner. The collection will be such as will attract the general public and also be of great service to the mining man who wishes to carefully investigate the minerals of this province.

"You have no idea of what a lot of interest is taken in the large photographs in the C.P.R. offices and others elsewhere of British Columbia, and I think that these have greatly aided in getting our province recognition since the completion of that railway.

"Statistics? Yes, of course, they are always useful, and figures such as we have been able to show lately count. I understand that it is the wish of the Minister of Mines to establish a refinery where bullion may be refined and run into bars, then, after being carefully assayed and stamped with the Government stamp stating their value, would be guaranteed by the Government, and thus practically pass for the same value as coin. In view of the large quantity of gold which will undoubtedly be coming down from the north the establishment of such a refinery now would be opportune."

Here Mr. Carmichael very kindly fetched from his office the new steel die engraved with the arms of the province and the motto "Splendor Sine Occasu"—some one was asked by the way to translate this the other day and complied by informing his respectful audience that the words literally meant "Occasionally we shine," but he was not quite sure what the expression was intended to convey. However, this die is to stamp the refined bars of gold after they have been subjected to the assayer's examination, and when once the impression has been placed upon them the bars will be purchased by the banks at the Government's valuation.

Passing from this subject to another, I asked Mr. Carmichael his opinion of some of the recently registered London company enterprises promoted to acquire and operate mine properties in the province, and I mentioned more particularly the "B.A." Corporation.

"Well," he answered, "I happened to be in London at the time the "British America" was floated. The lists were opened on a Friday and by the following Monday all the capital—a million and a half—was subscribed. That is quick work, isn't it? But it may be easily accounted for. You see, it was not so much the fact that it was a British Columbian enterprise as that it was brought out under the auspices of the London Globe and Finance—a remarkably powerful organization with an excellent record. This is the explanation one of the shareholders in the London Globe and Finance gave me and he has also invested in "B.A." shares. But the operations of a company like the "B.A." in British Columbia mean very much for the country if properly conducted. We want a few of the English companies to be in a position to declare dividends because that is what tells, there can be no question about it. The Hall Mines dividend was very opportune, and you would be surprised to learn of the good that was thereby accomplished in drawing attention to the province. If promoters in London would be content with making moderate statements; for instance, if they were to say 'Well, we have secured a certain fairly promising prospect or prospects which we are anxious to develop and work. The chances are good that it (or they) will turn out well, but, of course, we cannot count on this,' shares would be

bought quite as readily and if the enterprise did not succeed, there would be less disappointment and consequently less wholesale condemnation of the country. But, no, if one man goes to London from British Columbia and invites the public to invest in his mine because it is 'one of the best' in the province, the next man naturally goes him one better and calls his property 'the best.'

"Then again, it is often deplorable that men who come out to acquire properties for English syndicates have so little practical knowledge of mining or mineralogy. Let me tell you an instance. Of course I won't mention names, but this is a really true case. A representative of English capital came to me not very long since and told me with much elation that he had got hold of a splendid iron property. 'Sixty per cent. iron, sir, what do you think of that?' 'Well,' I answered, 'that's very good, but what percentage of sulphur is there in the ore?' 'Sulphur? I am sure I don't know, but what does that matter?' 'And phosphorus and titanium?' I queried. He hadn't ascertained and moreover was not aware how the presence of any of those elements in his ore would affect the commercial value!

"I suppose," I suggested, as I prepared to take my departure, for Mr. Carmichael's time is limited, as in addition to his regular duties he has now to superintend the fitting up of the old Legislative Hall as a mineral museum and School of Mines lecture room, "I suppose there is really more talk of Klondyke than of British Columbia just at present in the Old Country?"

"Well, yes," he replied; "but the boom will help us materially. They all know that it is necessary to pass through British Columbia to get there."

## THE KLONDYKE STAMPEDE.

[BY WM. M. BREWER, M.E.]

HAVING recently arrived in Victoria after traveling from Central Alabama and visiting in Washington, New Jersey, New York City, Ottawa, Toronto, Buffalo, Chicago, Wisconsin, St. Louis, Denver, Salt Lake and Seattle, I feel I am in a position to judge somewhat of the excitement relative to the Klondyke gold fields, the personnel of the stampede, and the effects the present rush will have on the prospects of British Columbia and Southwestern Alaska as well as along the Yukon.

The most noticeable feature of this stampede is that but comparatively few of those joining are miners having had experience in earlier stampedes. The bulk of the crowd is from such cities as St. Louis, Chicago, Milwaukee, St. Paul, or Minneapolis in the Northern States, and from Birmingham, Atlanta, Nashville or Memphis, in the Southern States.

Another very noticeable feature is the fact of so many men having sufficient available funds to enable them to outfit, and travel to the Klondyke, when it is conceded that nearly or quite \$1,000 per capita is necessary for outfitting and travelling expenses. It must be remembered that in the States for the past few years times have been hard, business conditions unsatisfactory, and money difficult to obtain. Consequently it would appear that in reality the times had not been so bad as depicted by the newspapers during the past three or four years, or else that men were mortgaging or selling property in order to satisfy their desire to tempt fortune in the far north.

During the past twenty-five years there have been the mining excitements caused by the discoveries of lead in Joplin, Missouri, in 1872, and 1873; silver in San Juan, Colorado, about 1874; gold in the Black Hills, South Dakota, 1875-6 and 1877; gold in Bear Paw in Montana, 1878; silver in Leadville, 1878; gold in Cœur d'Alene, Idaho, 1880; and gold in Cripple Creek in 1893; besides several others such as the discoveries of gold, silver and copper in Arizona, copper in Montana at Butte and Anaconda, and the alleged rich finds of gold in the San Juan and Colorado River districts in Colorado.

But when considered beside the present rush to the Klondyke nearly all the stampedes referred to, except, perhaps, those of the Black Hills, Leadville and Cripple Creek, sink into insignificance. In fact no gold discovery on this continent since that in California in 1848 has attracted such widespread attention as the Yukon is doing to-day. In every city, town and agricultural settlement in the States the stories about the riches in Klondyke are on every one's tongue. Companies have been formed to send prospectors into the new diggings by merchants, railroad men, mail carriers, farmers and even retail clerks, who have subscribed on the co-operative plan sufficient capital to send one, two or more representatives into the fields. Of course each of these stockholders will look forward to becoming a "bloated bondholder" from his share in the venture.

In the larger cities joint stock companies have been formed, probably the most notable being the Ladue Company, of which Chauncey Depew and other leading financiers and politicians are directors. This company was organized with a proposed capitalization of \$4,000,000 to purchase and work the holdings of Ladue, the pioneer of Dawson City. His example was eagerly followed by others who returned from the Yukon, and saw an opportunity to sell out claims to gullible investors, many of whom would never think of investing a dollar in any business enterprise in their own city, but who fell upon each other in their crazy desire to own a pretty certificate of stock in a company, the assets of which, even if any existed at all, were purely speculative, and hidden under several feet of snow, moss, ice, frozen muck and gravel.

Of course it is an ill wind which blows no one any good, and consequently the Coast towns, the transportation companies and returned Klondykens are the beneficiaries. In many cases, too, the towns in the east which are afforded an opportunity to become reliever of surplus population often, too, of a very undesirable population are benefitted. The Northwest as a whole will reap an immense reward in the end, because many who start for the Klondyke will turn aside and prospect systematically portions of British Columbia, Washington and Alaska, which have been up to the present time only partially explored.

What will be the future effect of this craze on legitimate mining operations is a question not easy to solve at present. Already many a confiding stockholder has learned wisdom because wild-cat companies in New York and other places have collapsed, the promoters' haunts become deserted, and the promoters themselves gone into voluntary exile. I believe the organizer of legitimate mining schemes based on the reports of conservative and reliable engineers, need not be anxious, because the subscribers

to the Klondyke companies are not as a rule the men and women who invest in legitimate investments, but rather that class of small savers, who work hard, economize and hoard for the chance of throwing their savings to the winds, when some such specious arguments and claims as are filling the prospectuses of the Klondyke companies are brought to their notice. The prospect of a fair return in dividends will never loosen the purse strings of such investors. It must be a gilded promise of a fortune in exchange for a song, a regular Arabian Nights fairy tale to catch such suckers.

The future alone will reveal the conditions of those travelling towards the new Eldorado. Having despised the appeals of the more conservative, both amongst the press and individuals, they are going by hundreds to ascertain from personal experience what the future has in store for them. Many no doubt will return richer in pocket, but the thousands who will only gain experience, and return, if it all, poorer in this world's goods, in health and with embittered feelings because of failure will hardly cause any comment. It has been and always will be the history of every mining excitement that one man may go in "broke" and strike rich pay, while another may take in ample capital and meet only failure and ruin. Every man though feels in the start that he will be the lucky one, although he must know that only a very small percentage of those who start can possibly expect to return wealthy. Many have already met death from shipwreck and exposure before they had much more than commenced their journey to the north. Yet it is not human nature to profit by the experiences of others; it must be purchased at no matter what the cost by ourselves to be appreciated.

The ultimate effect on the conditions in British Columbia will undoubtedly be beneficial, the excitement has already caused hundreds of thousands of people in every country to investigate the resources of the province, to study the geography, the conditions surrounding such mining sections as the Cassiar, the Cariboo and surrounding unexplored territory. Consequently it does not require an optimistic vision to anticipate an era of wonderful development nearer home.

## THE BIG BEND.

[BY G. E. G.]

THE most satisfactory news which we have heard for a long time is that there is every probability that we are at last to see the first portion of the oft-projected railroad into the Big Bend country built this year. The proposed road starts

RAILWAY TO ALBERT CANYON. from Revelstoke and continues up the Columbia forty miles to the mouth of Downie Creek, then follows the valley of Downie Creek to its head-

waters and finally strikes south across the divide and down the north fork of the Illecillewaet to Albert Cañon on the C.P.R. The money to build this road is behind the applicants for the charter and surveys are to be commenced as soon as the season opens. The line will open up a country second to none in indications of mineral wealth in Kootenay and will bring increased prosperity to Revelstoke as the business centre.

Meanwhile we are promised a grant from the Provincial Government for a waggon road from the town

to the head of the cañon, about six miles from here. Above this point the waters are navigable the whole season for steamers as far as Laporte, just above the mouth of Downie Creek. Above that point the Death Rapids present an obstruction to further navigation, and here it would be necessary to build a short tram line. Hundreds of dollars have been, and are annually, fiddled away by the province in the effort to keep the bridges and pack trail between Revelstoke and Big Bend in some kind of condition, with the only result that the miners and packers declare that at present the trail is in worse shape than it has ever been known to be.

And thousands have been spent by companies and private individuals in contending with what is probably the most difficult seventy miles of country for transportation in British Columbia. But wagon road and steamboat connection and the prospect of a railway will put a new face on affairs and a large amount of development may be expected in the old gold fields—the scene of the memorable Big Bend stampede—this coming year.

On French Creek and Ground Hog Basin and at the head of McCullough Creek the most active work will probably be carried on, though the more recently discovered section of mineral country between Revelstoke and Goldstream will undoubtedly come in for a goodly share of attention.

On French Creek the principal operations are being conducted by the French Creek Company, a Chicago corporation, which has spent a very considerable sum of money, not to mention energy, in installing an extensive hydraulic plant on some leases of very rich bench diggings the company acquired near the locality of the principal discoveries made during the Big Bend excitement in '65 and '66. This company has put up a sawmill and partly constructed a flume 5x4 and 4x4 for 12,600 feet, which passes through 370 feet of tunnel and brings the water down opposite to the works at an elevation of 400 feet. The water is carried to the mine in iron piping and will be discharged against the gravel beds through two giants having a discharge of ten inches. Owing to the many difficulties encountered last year—unfavourable weather and transportation troubles to wit—the company could not get their plant in a workable state before the season closed, but Mr. G. J. Atkins, the energetic manager, confidently expects to be hydraulicing the gravel within sixty days after bringing his men up this spring.

On the same creek a company of miners are now working on the Consolation, a deep placer proposition, which in '96 was operated with good results, the yield being estimated at \$1,600 for a short working period. The company have recently tunnelled through a slide which covered the pay streak, and believe they will soon once more strike good pay gravel.

The head of McCullough Creek is Ground Hog Basin whereat the notorious and somewhat unfortunate Orphan Boy is located. It is understood that the Vancouver people who bought this property intend to develop it this season. The work so far performed thereon has been thrown away and the claim remains as much a prospect as it was in the beginning. In the same basin a num-

ber of claims have been purchased by the London & B.C. Alliance Syndicate. On one, the Ole Bull, a sixty-foot shaft was sunk last fall with excellent results, and but for the close of the season before supplies could be brought in, the company would have been working the property this winter.

Across the Columbia on Smith Creek Prof. Nason did a lot of prospect work on the placer ground belonging to the United States and British Columbia Syndicate—a strong Kansas City corporation—but water interfered and he found it impossible to take in further pumping appliances in time to hope for any tangible results from the season's work. Several discoveries of fresh ground were made last year in the country situated between Revelstoke and Goldstream, particularly on Lakeview Mountain back of Laporte and Grandview Mountain and between the head of a small tributary of Carnes Creek and the head of Lafonne Creek, about twenty-eight miles from Revelstoke. Ledges of silver-lead and gold-bearing arsenical iron were discovered of great extent and richness. Keystone Mountain south of Downie Creek is another locality where great surface indications of valuable ore appear.

On Carnes Creek the Carnes Creek Consolidated Gold Mines, Ltd., a Revelstoke company, was working all last season on the Roseberry with most promising results. The vein matter is quartz and calcite and through the centre of it runs a streak of nearly solid iron pyrites and mispickel carrying from \$150 to \$160 to the ton. Average values of the whole vein go from \$12 to \$40 to the ton. A tunnel has been driven on the vein for ninety-eight feet and at that point a crosscut run each way for thirty feet. A lower tunnel has been driven to cut the lead with a view to running along it to the starting point of the first tunnel. The company had to close down for the winter before reaching the main lead, but another ledge, of which the existence was unsuspected, carrying very good looking ore, was cut while running the second tunnel. The company will probably begin work again next month.

Altogether the outlook for the Big Bend country is at the present juncture exceedingly promising. There is little doubt that development will place this section in the first rank of mining camps in the province.

#### FROM THE EDITOR'S NOTE BOOK.

MR. EDGAR P. RATHBONE, the well known mining engineer, delivered last month before a large audience in the Royal Colonial Institute, London, an exceedingly sensible and interesting lecture on "The Gold Fields of Ontario and British Columbia." In concluding his address the lecturer pointed out that the very best way of drawing attention to the progress in mining development of a country was by frequent and intelligent publication of its mineral statistics—a most true remark. In London at the present time it may be safely said that with the exception of the Hall mines, and possibly perhaps the Le Roi, no other B. C. mines are known as dividend paying to the investing public, and they would be considerably astonished to learn that at least twenty properties in West Kootenay alone, (not to speak of less prominent districts), pay handsome profits at regular intervals. And there are many more

than twenty if we be allowed to include the numerous rich prospects worked by the discoverers themselves and yielding profits of from two to ten thousand dollars annually. Such, for instance, as the Fidelity, near Silverton, and other equally promising claims on the creeks flowing into Slocan Lake. The publication early in March of the Provincial Mineralogist's reports, which promise this year to be more than ordinarily interesting, should have an important effect in advertising the mineral resources of the province abroad, but as Mr. Rathbone suggests, the efforts of the Government should be supplemented in this direction by efforts on the part of the representatives themselves of the industry in the country and by the establishment of an organized body such as a Chamber of Mines to place facts and figures at the disposal of likely investors.

One may well doubt, however, the practical value of lectures on mining by even such lucid and intelligent exponents as Mr. Rathbone, when a quite prominent public man, and a more or less distinguished member of the Imperial Parliament, will allow himself to draw such an idiotic conclusion from a speaker's remarks as the following: "He (the gentleman referred to) gathered that the moral of Mr. Rathbone's paper was that, if the Canadians wished to profit by the result of gold-mining experiences in other parts of the world, they would do well to set about their gold-mining in a systematic, careful and scientific way. They would do well to spend their capital and their effort not upon the first mine that came to hand, not on whatever promised to be a payable vein, but only on those veins which they had ascertained to offer satisfactory prospects, and thus a great deal of expense and disappointment would be saved." Pray who is to make a beginning, and how shall we distinguish between "what promises to be a payable vein" and "those veins ascertained to offer satisfactory prospects"? A Daniel! A Daniel come to judgment!

Speaking on another subject to which we have already more than once alluded in this column, the proper qualification of men designating themselves mining engineers, Mr. Rathbone said it was unfortunate that, whereas in nearly all other industries some practical knowledge was considered as a necessary condition of success, yet in gold-mining especially no such knowledge was demanded by the investing public, and anyone, if he had only lived in a mining country was supposed to have absorbed by contact a sufficient knowledge of mining to enable him to distinguish good properties from bad, and otherwise direct one of the most complicated of industries. It was also a drawback to mining that engineers were not obliged to qualify in some way in their profession. Under present conditions it was competent for any jack-of-all-trades to suddenly pose as a mining engineer, whose opinion was seriously accepted by a gullible public so long as it was sufficiently favourable. It is sincerely to be hoped that during the present session the Provincial Legislature will take this question under advisement. In the Australian colonies before a man may occupy a position as a mine manager it is necessary that he should pass an examination testing his capabilities, and this is an eminently wise and sensible provision, but if the mine manager, why not the mining engineer, whose responsibilities

are obviously heavier? We submit that no person should be allowed to call himself nor to practice as a mining engineer unless he can produce credentials justifying his claims.

It is by no means improbable that several leading American mining machinery manufacturing firms will ere long establish branch houses in British Columbia, in fact we are assured that this step is now under consideration by a prominent San Francisco house. Machinery can be manufactured as cheaply in this province as in any of the Pacific States of the Union and the American firms could well afford after establishing branch shops here to sell machinery to the mines at cost price, adding the present customs' charge of 25 per cent. as profit. Meanwhile the B.C. Iron Works Company, of Vancouver, should have things pretty well their own way. There will be a very considerable demand in British Columbia this year for mining machinery.

In view of the present Klondyke boom a book that was not read very widely at the time of its publication so long ago as 1887, Dr. Dawson's report on an exploration in the Canadian Yukon, will now well repay perusal. For instance it is worth noting that platinum is here reported to have been found in association with gold along all or nearly all the tributaries of the Yukon and it has also been observed in the Cassiar district. When platinum was first noticed by placer miners in the Similkameen it was thought by them to be a "form of white iron" and its presence was, moreover, regarded as annoying as hindering the gold washing operations. It is well, therefore, to be prepared for possibly valuable discoveries of platinum as well as gold in this latest of Eldorados. Here is a splendid opening, too, for the ubiquitous company promoter. What a bait for the gullible the prospectus of "The Klondyke Gold Mining, Platinum Saving and Ice Packing Corporation" (Unlimited Assurance) would prove!

*Apropos* of the Klondyke excitement it is with very deep regret that we learn that many once sober-minded citizens of that enterprising town of Seattle, Washington, have recently gone hopelessly mad on the subject and returned adventurers are in consequence doing a thriving business selling them "options" on claims for from twenty-five to fifty thousand dollars apiece. In return for his money the purchaser is afforded the privilege of purchasing a claim or claims in the Yukon within so many days, and he must be content to rely for his information thereon on a statement sworn to by the vendor. It is a rather curious fact that these statements are never by any chance disputed or questioned by other miners to whom they may be submitted for corroborative evidence, and any claim offered for sale is, of course, fabulously well supplied with nuggets kicking about in the gravel. There is proverbially honour among ---in this case miners.

It is quite possible that the rose-coloured predictions made by the chairman of the Dawson City (Klondyke) and Dominion Trading Corporation, Limited, at the first ordinary general meeting of the shareholders of this company last month may come to pass. Stranger things happen. It is also worthy of remark that the *Saturday Review* pats, so to speak,



the enterprise on the back, but whether on account of the full page "advertisement" of the "proceedings published elsewhere" or because the writer of the commendatory paragraph referred to is anxious to make amends for the very unkind criticisms indulged in not so long ago by this selfsame publication anent the company's advisory board in British Columbia, it would, of course, be difficult to say. One of the company's assets is a share in the "New Golden Twins," which the chairman described as a mining property in the rising district of the Rainy River, and "a district which experts who have recently returned from that country will tell you is literally teeming with gold." This we take to mean that there is so much gold lying about that you have to "cart" it off to get it out of the way. But we mustn't interrupt the chairman's flow of rhetoric—here's some more—Of this property (the New Golden Twins) he continues "the managing director says it is a most valuable one. It must be so. I will tell you why. All interested in mining ventures have heard of the Alaska Treadwell mine. Now, the ore from this mine runs from \$2.75 to \$2.95 per ton, and they are paying very large dividends. When I say that the ore of the New Golden Twins assays over \$5.00 to the ton, you will easily realize in what a valuable property your directors have secured an interest. Outsiders have already begun to realize this, for in the daily financial papers you will notice that the shares are now at one-third premium." But we haven't reached the climax yet. There is a pause and then the showman (how stupid!—we mean chairman) amid breathless silence, draws aside the curtain (oh, bother; we don't mean that)—tells the story of the "independent expert" who states: "You have a vein on the property—I know from actual experience, for I have walked over it—that appears almost like a pavement for nearly 1,000 feet, and which is all the way from five feet to fifty feet wide; so that you have any quantity of ore in sight, and it is only a question of value. Now the values there from your report to-day have really been demonstrated" (you remember I just now said they were over \$5.00 to the ton), "showing that you have a good paying property which will pay, as they say in the West, 'from the grass roots.'" My friends, there is only one thing to do: sell all that you have and give or rather buy shares in the Dawson City (Klondyke) and Dominion Trading Corporation, Ltd. Treadwell mines are not picked up every day, and then it would be worth something to have the privilege of attending the meetings of shareholders and of hearing the chairman's "yarns" first-hand.

A correspondent sends us the last year's balance sheet (herewith appended) of the Channe Mining Company. He describes the document as a "treat." If it is we have no objection at all to giving our readers the full benefit:

CHANNE MINING CO.

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

ASSETS.

Assets .....	\$1,000,000 00
Property Account—	
*Mineral Claims held by Company. \$661,372 63	
25,000 shares (par £1) Goldfields of B.C. stock .....	121,250 00
Office Furniture .....	340 00
Plant and Tools .....	500 00
Cash in Bank .....	2 137 37
Balance Treasury Reserve unsold	
209,400 shares (par value \$1) .....	209,400 00
Cost of Development on Mineral Claims to date .....	5,000 00

CONTINGENT ASSETS.

"White Pine" mineral claim, Thurlow Island (Crown granted).  
 "Centaur" mineral claim, Fifteen Mile Creek, East Kootenay.  
 "Book Rest" mineral claim, Ice River, East Kootenay.  
 "Golden Hope" mineral claim, Ice River, East Kootenay.  
 "Tiger" mineral claim, Fort Steele, East Kootenay.  
 "Maple Leaf" mineral claim, Fort Steele, East Kootenay.

LIABILITIES.

Capital Account—  
 1,000,000 shares (par value \$1) issued as paid up and non-assessable \$790,600 00  
 Balance unsold in Treasury .....

209,400 00  
 \$1,000,000 00

CONTINGENT LIABILITIES.

Amounts accruing on bonds on mineral claims held by the Company, \$20,450.00; 10,000 shares stock contracted for but not delivered.

Having audited the books and vouchers of the Channe Mining Co., Limited Liability, I hereby certify that I find the same correct.  
 JNO. J. COWDEROY, Auditor.

It will be observed that the company here modestly estimate the value of the properties owned by them at \$661,372.63, that is to say, we suppose, that if to-morrow six hundred and sixty-one thousand three hundred and seventy-two dollars and sixty-two and a half cents were offered therefor, the directors, acting of course, in the interest of the shareholders would indignantly refuse to consider the tender. Properties so valuable as these appear to be should be talked about, and strangely enough one does not remember to have heard so much of them as might have been reasonably expected. To if possible remedy this curious instance of seeming want of appreciation regarding the importance of the company's interests on the part of the public, we very gladly publish the following information of the mines (?): To begin with the "White Pine":—A little development work has been prosecuted on this property and the company's report tells us that "at a depth of sixty-six feet from the surface the vein is three and a half feet wide," furthermore one ton of ore sent therefrom for test purposes to the smelter assayed \$9.00 in gold and silver. The report says: "The ore is a fine grade of quartz, very heavily mineralized." It is permissible to enquire what with?—not with gold and silver, surely, or were the ore values as given in the assay returns a misprint?

This is, however, all quite immaterial; the real worth of the property rests on the fact that the vein "gives indications of greater value with depth!" Next there is the "Tiger," upon which two shafts, one ten feet and the other twenty feet deep, have been sunk. In this case the "report" does not contain particulars about the size of the vein or veins, but the ore is said to value from "\$3.65 to \$19.15 in gold and copper." It is evidently not considered worth while to describe the mineralogical or metallurgical character of the ore. On the "Maple Leaf," the third claim, a vein is reported to exist, varying in width "from two and a half to eight feet." This vein has been opened up with a thirty-foot tunnel, but about the values a discreet silence is preserved. But we must not forget to mention that the company holds bonds on the "Centaur" and on two other claims, the price of which is \$20,000. As the reserve treasury stock will at present prices only realize about \$10,500, it is not quite clear how the payments when they become due on the bonds will be met. Our correspondent plaintively asks: "Could anything show more clearly the absurdity of the method adopted in British Columbia of stocking companies the capital of which is only on paper? Here are three—well, not very wonderful

claims,—of which even the owners cannot say a great deal, valued according to the balance sheet at over six hundred thousand dollars, and what would they be worth if sold at a sheriff's sale (say) next week?"

Since the above was penned we notice that the capital of the Channe Mining Company has been reduced from a million to two hundred and fifty thousand dollars. Query: What valuation is now placed on the Company's claims? The action on the part of the directors would seem to indicate that they themselves recognized the absurdity of the balance sheet showing. Otherwise, either the valuation of the properties according to the balance sheet was a fair estimate or it was not; if it was fair, why should application be made for a reduction of the company's capital, if not, then the balance sheet is misleading. These are the only possible alternatives unless we suppose that since the balance sheet was submitted the properties have greatly depreciated in value, but no explanation has been made that such is the case. The Channe Mining Company is merely an example of the too-numerous instances in the province of foolish over-capitalized corporation enterprise. That certain steps have been taken by this company to remedy the evil in their own case is something in their favour.

Some fearful and wonderful productions are in the market for the protection of the Yukon Argonauts from the winter cold. Particularly noticeable are the various forms of "Klondyke masks." They are made of cloth or other material and are fondly believed by the purchasers, and boldly stated by the vendors, to be an infallible protection against frost-bite on the cheek or nose. An intending Klondyker from Manitoba, where for six months in the year the thermometer is too low for any respectable citizen to associate with, expressed himself in vigorous terms the other day on the subject. "These chappies from the Coast States," he observed, "have precious little idea of what the real Arctic cold means, if they think masquerading devices like that are going to be of any service. You may not feel the wind in them. It is very probable you will not feel anything at all. But it is mighty discouraging, when a man camps for the night and the grub is cooked and he takes off his mask to eat, and half his face comes away with the mask. But that's what will happen. No Klondyke masks in mine, thank you." Further inquiry elicited the fact that the masks, so far from shielding the face, only render it more liable to frost-bite, as perspiration forms on the face, damps the mask inside and finally freezes. "Tenderfeet" from the mild climates, please, mark, learn and inwardly digest.

The Toronto *Globe* confirms the general western expectation, that the Dominion will secure as proportionately large a surplus of revenue over expenditure in the Yukon as is now the case in regard to British Columbia. The *Globe* estimates the Yukon receipts from royalties, customs, duties, excise and licenses at a minimum of \$2,250,000 and calculates that the revenue thus accruing should yield a surplus of \$1,500,000. The *Globe's* minimum estimate of Yukon revenue is a distinctly safe one. It is already clear that the item of miners' licenses alone will this year yield at least \$1,500,000.

Our province's sturdy mining population will rejoice greatly over the fact that a conviction has, in the test case of the Van Anda mine, been secured in respect of the employment of Chinese workers underground, and in defiance of the Act prohibiting such employment of Mongols in our metalliferous mines. Meanwhile the miners of the Yukon are no doubt dismayed to learn that there is to be a big influx of Japanese cheap workers into the Klondyke country. This cannot be restrained under existing treaty and statutory regulations and it is much to be feared that the "little brown man" will after his wont in due course reduce to a sorry minimum the remuneration of the ordinary wage earner in the far northern land. Many already predict that the entrance of the Japs into the Yukon will bring down at least one half the present pay of the hired placer worker of that region. And unfortunately Japan can well spare many thousands of ordinary labourers from several provinces, in which the bulk of a congested population is and long has been forced to live in a chronic state of semi-starvation. Emigrants from these provinces will gladly therefore accept any wage abroad that will assure them the necessaries of life plus a margin of a few cents a day. The Japanese labour question will very likely add another difficult international problem to the many which already beset Canada in respect of Yukon administration and development.

The development of the British Columbia mining industry in the past few years has been largely responsible for a journalistic enterprise that in an older country would be viewed with astonishment. It is fairly safe to say that in proportion to her population the numbers of newspapers and periodicals published in the province is far greater than in any other quarter of the globe. Meanwhile the latest journalistic venture is a monthly eight-page folio yclept the *Mineral City News* and edited by Mr. Alfred W. Dyer, who has acted for some months past as correspondent to the *MINING RECORD* from Rossland. But one is inclined to ask: "Where the deuce is Mineral City?" This interesting information is, however, conveyed in the first issue of the publication aforesaid. We are told that Mineral City is twenty miles south of Nakusp; forty-five miles west of Kaslo; twenty-five miles northwest of Slocan City; seventy-five miles north of Rossland; and seven miles east of Burton on Lower Arrow Lake. So now the world is much wiser on this score. The great resources of British Columbia will be well advertised in London in the future, as in addition to that excellent and generally well-informed little paper the *British Columbia Review*, a correspondent informs us that a monthly magazine to be called the *British Columbian* is shortly to be published in the great metropolis.

A capital article appears in this issue from the pen of Mr. Wm. M. Brewer, M.E., and late of the Alabama State Geological Survey. Mr. Brewer, who has acted for many years past as correspondent to the *New York Engineering and Mining Journal*, leaves early in March on a visit to the Slocan and Rossland districts and has kindly consented to relate his impressions of these camps in future numbers of the *MINING RECORD*.

We are glad to have the assurance of a gentleman whose position is such that there can be no question-



ing the authenticity of his information, that Mr. Macintosh, the managing director of the British America Corporation, is not culpable of "reckless conduct" as attributed to him in last month's RECORD, in connection with his recent purchase for the company of mining properties and interests in the Rossland camp. As a matter of fact reports on the properties for which Mr. Macintosh has negotiated were submitted so long ago as May last to the London financiers, now forming the board of the company's directors, and a decision was practically then reached regarding the prospective value of the mines and the value to be paid for them. Mr. Macintosh has merely carried out his instructions as received from London. It is nevertheless true, that while the company has acquired some exceedingly promising mines, not one was purchased at a bargain, and, moreover, among the properties bought must be included more than one claim that can only be designated as "wild-cat," but, it must in fairness be said that these latter were not expensive luxuries. There is much to hope for from the operations of the "B.A.C." from Rossland.

An entirely disinterested and well known Rossland mining man writes to the MINING RECORD pointing out that while in part the hostile criticism directed against the British America Corporation "may be justifiable, much of it undoubtedly cannot be. For one thing the company has been floated with a perfectly definite object and that object has been carried out with fidelity to the original plan. The fact that it did not take over certain options it held would be serious had these particular options anything to do with the *raison d'etre* of the company; but they had not. The British public did not subscribe to the British America because it had an option on the Le Roi mine, that would have required a much more intimate acquaintance with the Le Roi mine than is possessed by the average English investor. They subscribed; it was a blind pool backed by Mr. Whitaker Wright, in whose genius in finance they had some confidence. The average investor knew nothing about the scheme and cared less. He would eventually pillory the directors and commit Whitaker Wright to that City of Dreadful Night, haunted by the shades of Baron Grant Jabez Balfour and other financial scapegoats if it were not a success. But in the meantime he is content to leave his hard cash to the pro-creative genius of the fashionable promoter of the day. As to the object of the company, it was a vast consolidation of mines in posse with a view to their being split up when they had become mines in esse. How has it been carried out? Admirably. The group of properties now controlled by the British America contains incalculable possibilities. These may never be realized. Granted; but if they are—well, that is the gambler's chance. On one side the before mentioned scapegoat-haunted Hades, on the other, those cloud-capped towers of successfully achieved enterprise, to perch their insignificant bodies on which men will undergo years of agony. But the interest lies in neither the collapse nor the consummation. It is in the combination against failure, the avoidance of every false move, in short the game itself, not the result of it."

A dispatch from Ottawa states that while there is a probability that an export duty will be placed on nickel ore there is very little likelihood, in view of the

opposition from British Columbia, that the Government will tax copper or silver-lead ore sent out of the country for treatment. To use an expressive simile attributed to the great Duke of Wellington, the people of this province don't care, to the extent of a two-penny—or more appropriately—of a five cent damn what is done with the nickel so long as our own industries of copper and lead mining are not hampered by legislation of the character proposed.

Mr. Labouchere's financial editor keeps *Truth* badly advised as to British Columbia mining matters. Thus a recent issue extolled the management of the Waverley mine and declared it continues to ship £500 worth of ore weekly to Swansea, whereas, as all here know, this is not the case, operations having for some time been temporarily suspended at the Waverley. The appointment of an ex-Gold Commissioner as General Manager of the company was, however, a politic stroke. The official title "Gold Commissioner" sounds well and the ordinary English investor thinks that such an officer must surely be a mining expert. Sometimes, of course, he is—quite as often not. It is, however, believed in the case of the Waverley, that the new manager will decidedly improve the working methods of the undertaking, for which assuredly—unless all local reports lie—there is ample scope.

Another well-read London financial paper, the *Shareholder*, contains in the issue of February the 8th a foolishly exaggerated statement with regard to the Waverley mines. In this paragraph it is incidentally remarked that the Waverley has 200,000 tons of ore in sight of an average value of \$25. Why even that historic post-card which we had the felicity to reproduce in fac-simile a month or so ago, wasn't quite so bad as this. Five million dollars' worth of ore in sight! Prodigious, indeed. But the question is this: Are shares selling at a premium of 10-16 on the strength of these lies or are they not?

It will be well for British and other European emigrants to the Yukon gold fields to note and act upon the fact that there is great risk of loss of property and even life in taking a passage to Alaskan ports by not a few of the old ill-equipped and often worse manned hulks that now ply thither from Seattle and other Sound ports. It is a fact, due doubtless to better steamship inspection on this side of the line, that whilst at least five American vessels have become total wrecks, whilst en route to Alaska, not a single British steamship, making thither from British Columbia has either been lost or suffered any accident of moment. The loss of life represented by recent disasters to American vessels on the other hand stands for well nigh a hundred deaths, whilst the loss of property simultaneously involved must have exceeded \$500,000. British gold seekers will, if they be well advised, make north on safe and well manned British vessels. They won't find on any British Columbia steamship, as happened in the case of that ill-fated American hulk, the *Clara Nevada*, a crew composed, with the exception of the captain and two or three officers, of drunk and incompetent rowdies.

The annual meeting of the shareholders of the Providence Mining and Development Company was

held last month, the directors presenting a very satisfactory report. We understand, however, that more capital is needed and that 97,874 shares are to be put on the market at their par value of \$1.00. The capital of the company is \$1,000,000 (nominal) paid up and to date \$45,037 have been spent in developing the properties. Now it may be pertinently asked why the owners should be anxious to dispose of so many shares if the properties are so promising as one would judge them to be from the report, for a very small expenditure should make the Providence a dividend paying mine if there is ever any likelihood of its becoming one. But supposing the ninety-seven thousand shares are subscribed for the position will be that the original shareholders who have only invested \$45,037 will hold 90½ per cent., whilst these new subscribers will merely represent 9½ per cent. of the total share capital. Or in other words, the latter will provide 69 per cent. of the capital required for development in order to receive 10 per cent. of the profits. If the mine was thoroughly developed this would be all very well, but under the existing circumstances the original shareholders are certainly not entitled to so disproportionate a percentage of profits. Again, should the directors elect to sell at par 45,037 of the 902,126 shares they control in contradistinction to the treasury shares to be offered—they would receive back every cent they have invested in the enterprise and yet retain a sufficient interest in the mine to entitle them to 90 per cent. of future dividends, presuming, of course, that there will be dividends. Investors will certainly be acting wisely to await the results of future mill test runs and meanwhile not put their trust too implicitly in Providence.

The report of the directors of the Consolidated Cariboo Hydraulic Mining Company, Ltd., has just been issued, but unfortunately too late to receive anything like comprehensive notice in this month's MINING RECORD. The summary of the season's work gives the total time occupied in washing as 111 days 17 hours, the total quantity of water used 223,416 miners' inches, the total quantity of gravel washed 840,130 cubic yards, and the gold product 8,078 ounces, the value of which is \$138,589.79. The expenses of operating amounted to \$91,311.79, the total other receipts for the season being \$143,142.01. Upon the advice of Mr. J. B. Hobson, the manager, the directors have decided to increase the water supply by constructing a ditch at an estimated cost of \$125,000, which will afford 127 days' water of 2,000 miners' inches for twenty-four hours, and a very large force of men, probably five hundred, will be employed on this work. Mr. Hobson during a recent visit to Victoria petitioned the Government to include an appropriation in the estimates for improving the wagon road from Quesnelle Mouth to the mine. The company has built nearly 100 miles of roadway and thereby succeeded in shortening the distance by nearly thirty miles from Quesnelle. It is, therefore, to be hoped that the Government will provide a liberal grant for this purpose.

#### FROM NELSON.

NELSON presents her usual winter aspect; although there are indications that spring is approaching yet the whole town and district are still covered with snow sufficiently deep to make new prospecting im-

possible and access to known and partially developed claims very difficult.

The Hall Mines (both mine and smelter) have been busy as usual and the matte produced is being further refined at home instead of shipping it to refineries on the other side of the line, thereby effecting a great saving in freight and very considerably increasing the value of the material. All has been working very smoothly and it is possible the company may declare another dividend. If the gentlemen who think they can run the whole concern from London, England, would use a little common sense and either implicitly trust their manager here or send out some one else in whom they did have confidence, the dividends would probably be more certain than they are. Other properties which are being worked all through the winter are looking very well. We may instance the Fern and the Athabasca, with one or



TUNNELING AT THE FERN MINE, NELSON.

two others on Toad Mountain; as well as the Dundee, the Ymir, and one or two on the North Fork of the Salmon. There are reports also of recent good strikes on slightly developed properties about Fortynine, Sandy, and Rover Creeks which may or may not turn out as well as expected. Continual assaying being the only method which can decide the question.

Speaking on this subject, I would again and again call the attention of claim owners to the supreme folly of putting hundreds of dollars' worth of work on their property without an assay at all. Here is a case in point. I was asked to accompany a prospective purchaser to see and sample two claims some distance from Nelson, and on arriving, found a shaft some twenty feet deep sunk on an eight-inch vein, and a tunnel some twenty feet in on a seven-foot vein, all very well done and well timbered. The price of the property was only \$60,000 (!) and the value of the vein was practically nil—some four or five ounces of silver, no gold, and about ten per cent. lead. The deal has not been completed yet, and will hardly be during this coming season. The owners admitted they had never had an assay, but thought the rock looked well, so worked on it with a will for some time. Now an assay made occasionally would have saved much disappointment and hard work; and this is no rare instance—"there are others."

Nelson is anxiously watching the construction of the Crow's Nest road, which it is hoped may reach the head of Kootenay Lake by the end of the year—certainly the work is progressing very satisfactorily

so far, and the completion of the system will be of great advantage to Kootenay, as with the advent of the railway we may expect cheap fuel and a reduction in the cost of smelting. Of course in addition to that, the railway will tap districts known to contain valuable ore deposits which cannot at present be profitably handled.

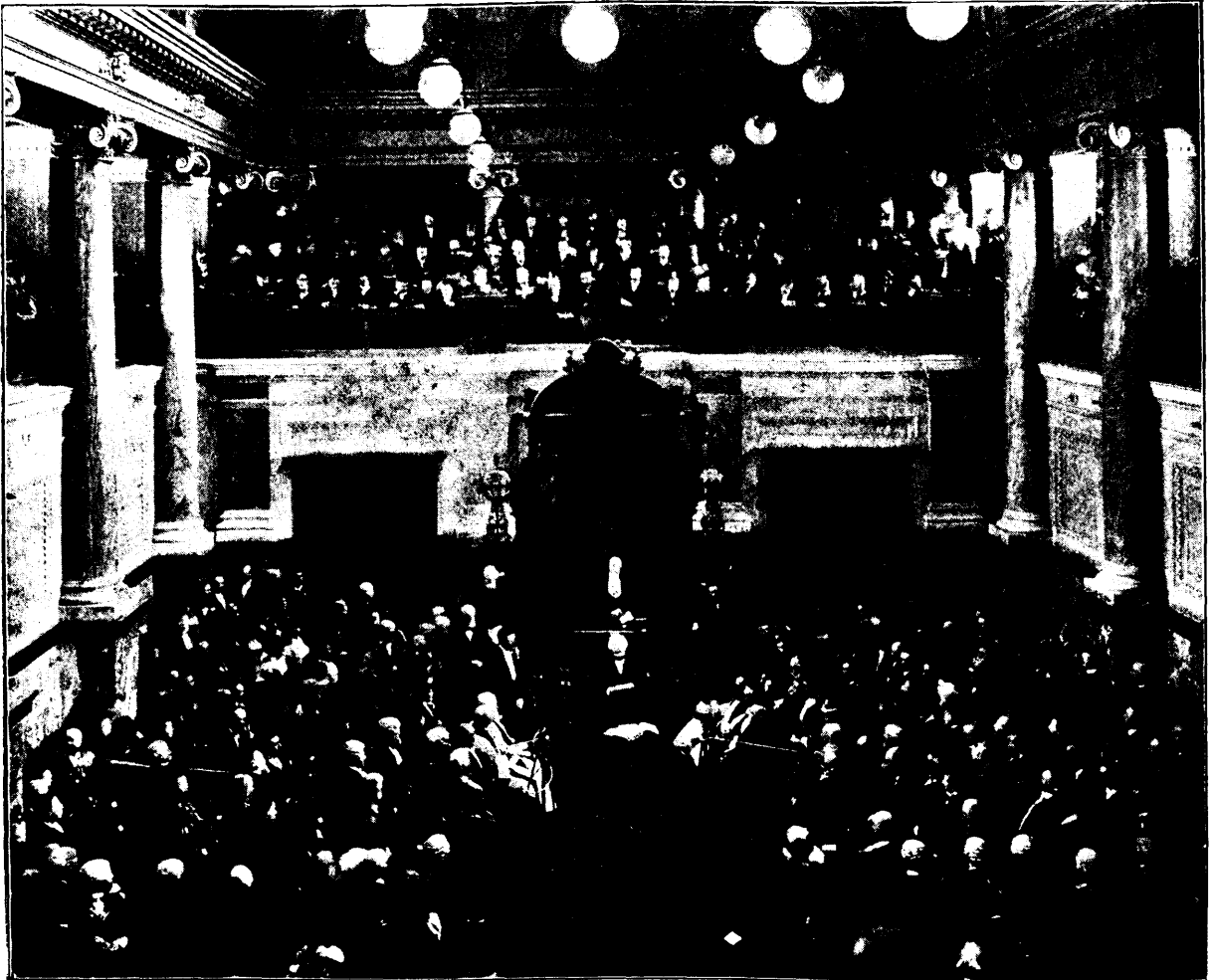
#### MINING ROUND VERNON.

SINCE my last there has been some little stir in mining matters round Vernon, and here is my budget of news: The assessment work is being performed on the Ruby Gold Mining Company's properties, a tunnel having been driven on the Sunbeam and the ledge encountered. Besides four stringers were also uncovered. Assay returns have not been made yet, but the ore showings are very good indeed. Then a London syndicate has secured an option

INCREASED  
ACTIVITY.

prises is, however, the Canadian-American Gold Mining and Development Company, whose properties at Glen Robinson lie some fourteen miles from Camp Hewitt on Okanagan Lake.

I enjoyed a most pleasant trip recently to see Mr. J. E. Banks' properties, the Grand Times and the Hidden Treasure on Six Mile Creek, some twenty-five miles from Vernon on the west side of Okanagan Lake. The Grand Times, I judge AT SIX MILE CREEK. must be regarded as one of the very best claims in this district. Sufficient work has been performed on the property to entitle the owner to a Crown grant. On the Hidden Treasure the assessment work is being vigorously prosecuted. In addition to the showings on these two claims some of the outcroppings elsewhere in the vicinity are very promising and indicate the presence of large ore bodies.



THE NEW LEGISLATIVE HALL, VICTORIA.

on the Bon Diable, which, of course, may mean much or nothing. On the Blue Jay the ledge has been struck and work is progressing very favourably under Mr. Craven's superintendence.

On the Camp Hewitt work is being steadily prosecuted generally with satisfactory results and other properties in the same neighbourhood are attracting attention. The most important of the local enter-

#### NEW PARLIAMENT BUILDINGS, VICTORIA.

THE opening on the 10th of February of the recently completed Provincial Parliament Buildings at Victoria was a very imposing ceremony and the magnificent structure was thronged with those who came to witness or take part in the event. Our illustration of the Legislative Hall on this page is from a photograph by Messrs. Fleming Bros.

PROPOSED AMENDMENT TO THE  
MINERAL ACT.

SOME OPINIONS FROM UP-COUNTRY DISTRICTS.

IN the December issue of the MINING RECORD an article was contributed by Mr. Carlyle, the Provincial Mineralogist, on the "Location of Mineral Claims," the writer pointing out that the regulations now governing the acquisition of mineral lands in the province were open to abuse and suggesting the advisability of certain radical changes in the law to check the too-common practice of "wild-cat" staking. This article attracted a good deal of attention at the time of its publication, and in the main its suggestions were, we believe, approved by those whose opinions are always entitled to respectful consideration, as representatives of the mining industry of the country.

To ascertain, however, the correctness of this assumption, the editor of the MINING RECORD addressed a number of leading mining men throughout the country asking them to express their views on the question. In compliance with this request we have received some thirty replies, the majority of which favoured the amendments as proposed by Mr. Carlyle. Of course we do not pretend to say that our correspondents' views represent in any way the opinions of a majority of the class of men engaged in prospecting in the country, but they may be regarded as a very useful guide thereunto nevertheless. In some cases we have been asked not to publish the letters sent, but with regard to the following no such stipulation was made: Mr. J. C. Gwillim, B.A., Sc., writes:

I am not in a position to give you much information concerning the light in which individual mining men see Mr. Carlyle's proposed amendment, nearly all my time at present being spent in the mountains. However, prospectors, and this is chiefly a camp of prospectors, are probably a majority in favour of the old law now in force. Still a fair number can see far enough to see their own injury by the present free and easy staking of mineral claims. The real prospector or born wanderer who discovers new camps will never be bound to stay and work his prospects. The greater number of amateur prospectors who are after the mineral for the sale of what there is in it to better their positions, do not oppose the proposed amendment I believe. The chief objection comes from those who are not bona fide mine makers. It is a pity to limit the pioneers of prospecting who are genuine prospectors and not mine makers by causing them to do development, which is out of their line of operation. Such men do not stake the country wholesale. However, these are in a minority and the proposed amendment will certainly benefit the camps as a whole. This appears to be the judgment of those who have most interest in the permanent prosperity of the districts. At present the real resources of large tracts of country are just as nature leaves them, except that they are tied up by men who have not confidence or means enough to prove them.

Mr. Howard West, A.R.S.M., of New Denver, comments:

Realizing the vast importance to the mining community of the proposed alteration in the laws relating to the location and recording of mineral claims, as mentioned in your letter, I have given the matter

careful consideration personally and have also been at some pains to ascertain the views on the subject of as many mining men as possible.

A STEP IN  
THE RIGHT  
DIRECTION. While it would be impossible to give everybody's opinion, and invidious to single out names in particular, it appears to be universally recognized

that in the interests of the majority, some change is desirable in the laws as they stand at present. Considered comprehensively, the idea proposed is regarded as a step in the right direction and unquestionably meets with the approbation of the better class of miners and investors in this district. At present the details given anent the alteration are somewhat meagre and admit of so many possible changes that the majority of men are chary of expressing a decided opinion either way. It may be taken for granted, however, that an amendment along the lines proposed would be gladly welcomed by both capitalist and prospector, provided the clauses inserted were not of so rigorous a nature as to become burdensome to the pioneer without means. The chief objection which I have heard expressed from the standpoint of the prospector is that as the time available for prospecting is of short duration, in many places situated high up, amounting to not more than three or four months in the summer, it would be preferable to devote this entirely to prospecting for mineral, and leave development until no further advantage could be gained from the investigation of surface indications. This objection is, however, in my opinion rather paltry, because not only is a prospector liable to overload himself with speculative ventures in this way, but he undoubtedly requires the surface indications for preliminary exploitation, before he can ascertain whether it is worth recording or not. Another objection which has been urged in certain quarters, is the loss to the revenue which will result from the fact of so many worthless claims not being recorded as formerly. This again, I must say, appears to me a very shallow argument, as in the end a corresponding gain is bound to be observable from the more thorough development and consequent larger mineral production of the province.

In any case it is poor policy to allow fifty-two acres of mineral-bearing ground to be tied up for the mere cost of recording it.

Personally, I think with the majority that some change in the laws is not only eminently desirable, but imperative if all development is not to be brought to a standstill.

I have refrained from including other than general opinions expressed to me, as I found most of those I consulted were averse to giving a written statement or having their names brought prominently forward in the matter. Discussion on such a subject could be prolonged indefinitely, so I have made no attempt to give more than a few passing comments on the question as it now stands.

Mr. W. Thos. Newman, of Kamloops, replies:—

In answer to your request for opinion of Mr. Carlyle's proposed amendment to the mining law compelling "\$100 worth of work to be done in three months," I would say that one year ago as one of the council of the Kamloops Miners' Association I was deputed to draw up a memorial asking to have the law changed on certain points which was forwarded to the Government after discussion by

A KAMLOOPS  
VIEW.

the members of the association. Included among my suggestions was the amendment now proposed, and this excited much opposition when under discussion. A number of experienced miners and prospectors expressed themselves very strongly against the proposal, but so far as my memory serves me the only valid objection brought out was that in remote and inaccessible regions finds made late in the season could not be recorded under such procedure. I am in favour of this clause, but admit it will not reach the root of the real trouble as effectually as the sentencing of a few well known offenders moving in the higher circles of mining to severe terms for perjury.

I would again suggest as an additional measure that the prospector deposit with the Recorder samples of the mineral staked on with affidavit that they came from "rock in place" on the claim recorded.

One of the best known and most highly respected engineers in the Slocan, Mr. Maurice Bucke, E.M., M.A.I.M.E., in reply to our letter, intimated that he had gone to the trouble to obtain the opinions of several among the more prominent residents of Kaslo on the subject. These opinions were embodied in an informal letter addressed to Mr. Carlyle, as Mr. Bucke thought it would be right, perhaps, that the Provincial Mineralogist should first receive the communication:

In regard to the proposed legislation affecting the mineral claims of British Columbia and the subsequent assessment work thereon, namely, that the first assessment work must be performed within ninety days of the location of any mineral claim, and that this assessment work shall hold only until the end of the year in which the location is recorded, and, subsequently, all claims shall expire on the first day of January of each year unless the assessment required by law has been performed.

We consider that the proposed amendments would have a most beneficial effect on the mining interests of this province.

It would be proper to allow the locator to record, but not make it compulsory that he should record his location at any fixed time within the ninety days allowed for the first assessment;

SOME and whether the first assessment  
FURTHER should amount to the usual \$100 per  
SUGGESTIONS. claim, or a lesser amount, is a point  
for discussion. But considering that

by far the majority of mineral claims are staked in the latter half of the year, the first assessment might reasonably be reduced to one-half the amount now required.

Such legislation would, undoubtedly, reduce to a large extent the practice of re-location of claims by virtually the same owners, which, although never intended by law, has become a common practice, a practice that is most detrimental, both to the honest investor and prospector, as it permits individuals to appropriate for such speculative purposes large tracts of ground, sometimes as much as thirty to forty claims which they are at liberty to hold from year to year by the payment of \$2.75 per fifty-two acres of ground.

It is obvious that men holding a large number of claims in this way are kept busy throughout the season re-locating, and that they have no time to prospect the claims they stake.

Are they entitled to keep others from prospecting that ground?

Are they entitled to ask the investor, who has developed a value in an adjoining property, a top notch price for ground so acquired?

We believe it is not right that such a condition should exist. Were the proposed legislation made law, the Act would entirely prevent any further continuance of such practice, as there are few places in British Columbia where the locator can locate every three months in the year at a cost of less than that of the usual assessment work.

If all assessments were due the first of January of each year, that obnoxious Act which works the absolute forfeiture of all right in a mineral claim upon which assessment work—although it may have been done—yet, inadvertently, has not been recorded, will lose its objectionable features. Through general uniformity, no man could then plead confusion of dates, or lapse of memory as expiation.

Under exceptional conditions, that is to say—where claims are located in unusually high or exposed places, it might be almost impossible or unjustifiably expensive to perform the assessment work on claims located even as early as September 1st under such circumstances, therefore, the Gold Commissioner should be empowered to extend the time of recording the first assessment.

To claims, located after the 1st of October, this condition of affairs would be almost universal. The Gold Commissioner would then have the power to stop the evil practice of snow locating by giving only to those whom he honestly believed entitled the extension of time asked for.

This letter was signed by the following gentlemen residing in Kaslo:—

M. A. Bucke, mining engineer; J. L. Montgomery, mine owner; John L. Retallack, mine owner; David W. King, editor *Kootenaiian*; John B. Wilson, merchant; S. J. Henderson, miner; Hamilton Byers, merchant; A. Whealler, barrister; C. W. McAnn, barrister; Wm. Tretheway, mining engineer; G. Maander.

Mr. L. A. Agassiz, the Mining Recorder at Fire Mountain, gives an adverse opinion:

"Replying to your letter of the 28th ult., and to your query as to whether it would be advisable to amend the Mineral Act, making compulsory the performance of a certain amount of work on a claim before it could be recorded by a prospector, as suggested by Mr. Carlyle. At your request I have conversed with a number of practical miners on the subject and they seem to be unanimous in condemning Mr. Carlyle's suggestions for various reasons, among which may be mentioned that most prospectors as a rule have not the necessary funds, after a prospecting trip, to put in work on a claim as proposed, but have to go to work and make a grubstake before they can do so, or have to interest other parties with the necessary funds to assist them in doing the work, and it would be next to impossible to do so if they had not a record to show that they had a title to the claim; even as it is most of them find it a difficult job to interest capital. It would also have the tendency through the length of time that it would take some prospectors to perfect their record to lead to endless disputes and complications over these claims. Personally I am of the opinion that instead of throwing obstacles in the way of prospectors we should do everything to smooth their path and render their labour as easy as possible. Of course we know that

there is a great deal said in various quarters on the evils of re-staking, that is, you stake your friend's claim and he stakes yours to get out of doing the assessment for the year, and the more claims and friends and partners you have in the combination the more years can be bridged over, and this practice can very easily be carried on from year to year at an expense of \$2.50 per claim for recording fees provided they (the claims) are of no known value, but let once the discovery be made that there is anything valuable on any of these claims they are just as likely as not to be staked by some other prospector. Now while this means revenue to the Government, it must be borne in mind, that most likely development work would reveal the fact that ninety out of one hundred of these claims are not worth the recording fee, or the owners would not run the risk of losing them. However, as a partial antidote against the evil complained of I would suggest that the recording fee in the first instance be materially increased, while the fees for recording assessment work be reduced or altogether abolished. Another suggestion that I would make is that as the law now allows a man a square claim of 1,500 feet by 1,500 feet it should be amended to read as in the land laws, all lines must be run north and south, east and west. A map of survey would not then look so much like a "patch-work quilt" as you may see by the map I enclose with its numerous three-cornered fractions. Another way in which a prospector might be materially assisted and which I would strongly advocate would be the establishment at some central point of a reliable assay office where he could send his ore and have it assayed for a nominal fee, the present rates being altogether too high as compared with charges made at other mining points, in fact it is a question whether the establishment of a small government mill to treat ore in ton lots would not be an excellent move in the interests of the country where the formation is so different and varied that some unexpensive way of determining the actual values contained in the various mineral lodes of the camp would be a tremendous boon."

More wild-cat staking has perhaps been carried on at Alberni than in any other mining district of the province. Mr. Arthur E. Waterhouse, writing from that place, opines that "it is generally conceded by all the more thoughtful and experienced prospectors that some steps should be taken to check the reckless staking of mineral claims in the Alberni district, for although it is necessary, of course, that every encouragement should be given to those engaging in the search for mineral lodes,

OPINIONS  
FROM  
ALBERNI.

the existing law is open to abuse, and admits of a condition of affairs that instead of benefitting the country retards its development. It is possible to-day—indeed it is actually done—for one man to tie up large areas of mineral ground and by a little manoeuvring cheat the provisions of the Mineral Act and thereby escape the performance of the annual work legally required on each claim staked by him." Mr. Waterhouse goes on to describe the detrimental effect in the Alberni district of "promiscuous" staking in the course of a lengthy but interesting letter. However opinion may differ upon the advisability of the measure proposed by Mr. Carlyle to check the tendency on the part of a certain class of prospectors to stake off large tracts of land supposed to be mineral

bearing and to hold them without attempting to open up or discover the value of their finds, it is nevertheless clear that the mining community of the province as a whole deprecate the practice and recognize the necessity that has arisen for legislative interference in the matter. While we hardly think it likely that the Government this session will propose to make such radical amendments to the Mineral Act as Mr. Carlyle has suggested, they cannot but realize the importance of introducing a measure to minimize the evil he has shown as existing. A law not allowing a second record of a claim to be made unless the assessment work had been performed, and the imposition of a heavy fine in cases where claims had been staked and not recorded would be at any rate a step in the right direction.

### HYDRAULIC MINING IN CARIBOO.

[BY G. O. LEASK.]

**A**MONGST the latest methods of gravel mining to be applied in Cariboo is that of hydraulic gravel elevating. Perhaps the most complete equipment of this kind so far erected is that put up by P. H. Campbell, M.E., for the Cariboo Gold Fields, Ltd., operating on the meadows of Williams Creek.

The first work to be done was the construction of a drainage tunnel to carry off the surplus water; this alone was a heavy undertaking, occupying as it did three years' time and costing \$100,000. At the same time ditches for the conveyance of water from the reservoirs to the river were being dug. Over 12,000 feet of welded wrought-iron pipe, 18 to 24 inches in diameter and one-quarter of an inch in thickness, and weighing over 600,000 pounds, were shipped direct from England to Ashcroft on the C.P.R., thence by waggon and sleigh, a distance of nearly 300 miles, to the mine, at a cost of over \$80,000.

The company has two of the latest improved hydraulic gravel elevators invented by Mr. Campbell and made by Parks & Lacy, of San Francisco, in position at the mine, with pipe lines connected, with sluices, and everything in readiness to commence operations early in the spring. The accompanying cut shows the plant as erected.

The two main pipes that supply the elevators are each 4,000 feet long, the joints all being leaded; the pressure is 600 feet, which will give an efficient head of about 240 pounds to the square inch at the nozzles. The gravel will be elevated eighty-eight feet vertical height, and discharged into sluices four feet in width, paved with eight-inch blocks and having three per cent. grade.

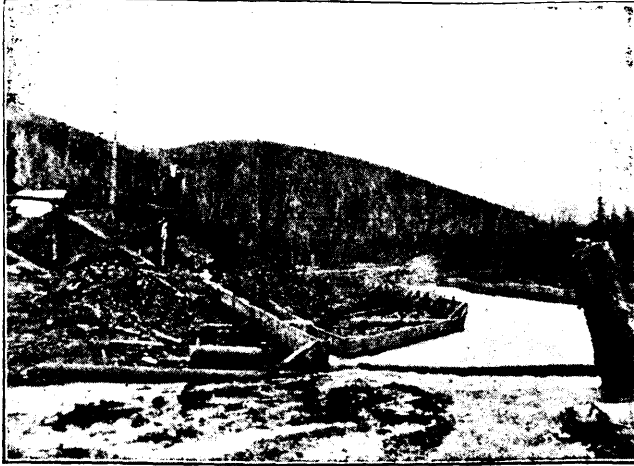
Twenty-five hundred inches of water will be required to operate the plant; its capacity will be about 5,000 cubic yards of gravel every twenty-four hours. To place the elevator in position inclines were sunk over the head of the drainage tunnel to bed-rock; here stations were made for the elevators which were placed in position, connections made and the plant is ready for water.

The principle of the hydraulic elevator is simple indeed. At the outlet end of a tail race or sluice box, of ordinary pattern, but much more substantially built, sits a heavy cylindrical casting, protected by a heavy wrought-iron lining; in the casing is an opening to the floor of the box to admit the gravel and water; through an aperture in the floor of the box, inside the casting is the nozzle connected with the



supply pipe; the gravel and water instead of finding their way at the tail of the sluice, meets the elevating stream of a pressure of 240 pounds to the square inch and is carried through the elevator pipes to the sluice eighty-eight feet above.

It may be of interest to you to know that gravel taken from the station where the elevators sit was



SLOUGH CREEK VALLEY, CARIBOO.

taken to the top and washed, yielding \$8 per cubic yard.

There is another mine in the Cariboo district equipped for hydraulic elevating, although not quite in the same way. I speak of the Horsefly Gold Mining Company's mine on Horsefly River; this is equipped with hydraulic elevators, one of the Joshua Hendy patent and one of the Evans patent. It would take too much space to do justice to the equipment of this mine in the coming issue, so with your permission, at a future date, I may go further into the subject.

I am indebted to Mr. Campbell for information regarding his elevators.

#### OUR LONDON LETTER.

IT is useless here to hope to obtain any definite opinion with regard to the real situation in Klondyke. Whether it is that the messages get distorted along the great length of wire between Victoria and Vancouver I know not. One thing alone is certain, and that is that every report flatly contradicts what

has been previously published until THE BRITISH PRESS AND KLONDYKE. "faith unfaithfully" keeps us "falsely true." On the whole, it may be reckoned that the *Daily News* and the *Pall Mall Gazette* provide us with

drops of vinegar in contrast to the over-load of sugar presented by other papers. Another curious fact is that the wildest and the most dismal accounts hail from the States, thus seeming to show that their feverish hopes are sometimes crushed by disappointment. The Seattle correspondent of the first paper mentioned above, for instance, writes in this despondent strain, that no food is expected to arrive up the river before August, and it is feared that the present supply will be exhausted long before then, probably by the end of June or the first of July. Referring to Fort Yukon he continues, nothing but the presence of two United States Army officers prevented the

looting in the latter part of October of the caches containing the available food supply between Fort Hamlin and Dawson City. Captain Ray took charge of the caches in the name of the United States Government and proclaimed martial law. Food and wood were then supplied to them on oath of their starvation. The Victorian deputy of the same journal discusses the mother lode and remarks that it is not given to many experts, even as skilled (?) as Mr. Ogilvie undoubtedly is, to see their predictions so suddenly and so surely verified. Within a week this mother lode was discovered in three places many miles apart. "The vein appears to be about thirty-five feet in width, and is to be traced in the northwest direction from Dome Hill crossing Eldorado, Nugget Gulch, Adam's Creek, Skookum Gulch, and Bonanza. How much further it extends and into what branches it divides is yet for the future to disclose. The rock is exceedingly rich, showing both leaf gold and stringers, and where it crosses the creek lump gold is plentiful. The nuggets from all have the 'spider leg' gold adhering, showing plainly that they have not travelled at all." This bald statement of fact will be sufficient to show that the permanency of the Yukon gold fields is established beyond peradventure. Finally the writer adds that it is very certain that all the millions which have been taken out by placer working once had their home in this very lode which has just been laid bare. All this serves to assist in making one of the biggest booms on record.

Mr. de Windt's energy can find no rest in England. To satisfy himself he must be exerting his strength on the inhospitable shores of the unburied tracks. He keeps himself in training, however, by frequently lecturing on the prospects of British Columbia. Once at the St. George's Hall he gave the first of the Sunday lectures inaugurated there under the presidency of Lord Hobhouse. In this lecture, however, he chiefly confined himself to describing his journey across Alaska to the Behring Sea. But he spoke of the Chilkoot Pass as dangerous to those not possessed with nerves.

Of Forty Mile City he declared that though food was sometimes scarce "whiskey was never wanting." A detachment of Canadian Mounted Police (in this case of course "dismounted" police,) the employees of the companies and a dozen saloon keepers alone remained here during the short summer, but in the long dreary winter the miners lived in the place and many squandered all their earnings. Again last night he gave a lecture at the Imperial Institute. The Marquis of Lorne took the chair and remarked confidently that good surveyors were now journeying through the new districts, who would lay out the claims accurately after a survey. Thus there would be no chance for the claims of jumpers, and that was a great advantage. He himself was quite disinterested for he had not a red cent in any Canadian investment. This may be an honest boast, but it would be somewhat too remarkable if every speaker in favour of the new land of "golden pavements" were to make the same admission. Material as well as verbal support is as necessary as whiskey in a "peg." Mr. de Windt, following the chairman, said that gold was to be found all over the country from the Arctic Ocean to Juneau, and from the Mackenzie River to the Behring Sea. The climate was severe, but there

was little truth in the sensational stories about its unhealthiness. At the same time no one having cultivated a weak lung or inoculated himself with rheumatism ought to spend a winter there. Dawson City was the most orderly and well governed mining camp in the world. Murder and theft were practically unknown in the Yukon Valley. The cost of living was high, and the proprietors of drinking saloons were making their fortunes. But even the spirit was of less consideration than candles, which were as rare as the edelweiss on the Swiss mountains. He concluded that it was a curious fact that during the past year more rich strikes had been made by tenderfeet than by experienced miners. In his warning he said to women "stop at home!"; to emigrants take £300 at least and expect to rough it, and don't believe the exaggerated personal profits that are said to have been made.

The field of lecturing in regard to the field of discovery has not fallen entirely into the hands of one man, for Mr. E. P. Rathbone devoted an hour at the Colonial Institute under the chairmanship of Lord Strathcona and Mount Royal to supplying information on the same subject. He traced the history of the gold mines after which he declared that all over the country there was a curious sequence of remarkably pure mineral deposits which pointed to some curious but gigantic terrestrial metallurgical process having been in operation. When it was proved that the Dominion of Canada was finally destined to occupy an important position as a producer of the rarer metals, and

capital had been attracted into the various gold-mining districts for the construction of railways and all that goes to assist in the economic production of minerals, then the metallic industry—especially that connected with gold—would slowly but surely become an established industry, and the Dominion of Canada would enter into a period of marked prosperity.

The Government ought to do all in their power to assist the genuine prospector by legislation. But the prospector should be made to understand that unless he was in a position to fairly demonstrate the value of his ground by actual mining work, such ground was practically worthless.

As to the mining undertakings at work, it is much to be regretted, he said, that the prospecting work was frequently of such a crude and unminer-like nature that it did not serve any good or useful purpose, and consequently when the mining engineer representing the capitalist who might desire to take up and work the ground came to examine it he could not obtain the necessary proofs as to the value of the veins; whereas had such work been completely carried out, and the same amount of energy properly directed, it would be possible for the engineer to at once give his principals some definite idea as to the probable industrial or economic value of the ground.

Criticizing the lecture, the *Saturday Review* comments upon the fact that the important point is that British Columbia and Ontario are at the beginning of their career as fields for vein mining. Operations will have to be carried on under somewhat exceptional conditions, and Mr. Rathbone's advice should be laid to heart by city men not less than by the general public. Illimitable as the riches of these parts of the Dominion no doubt are, they are to be

secured only by the exercise of unusual mining skill, of patience, and of careful financing.

Truth, however, with its venomous sting is not enamoured with matters British Columbian. He receives a letter from an engineer which he publishes *in extenso*. This anonymous expert treats on the Klondomania, and with the air of an aristocrat says: "My investigations have led me to the discovery that there is up to date not one perfect title to a gold mining claim in the Klondyke or Yukon regions. Of course there are 'squatters' deeds which are worthless until ratified. This fact commends itself to me as affording a cause for great caution on the part of investors. The lesser fry who have given their opinions were mostly never heard of before."

A great deal of fuss has been made over the immediate construction of a railway to the forbidden land—that bold enterprise of the Canadian Government, which will at once revolutionize the whole question of the approach to Klondyke. Strange to say, no one seems to be skeptical about the scheme, although the idea of connecting Montreal and Vancouver in the same manner was, in its day, scoffed at as an impossibility. But we are so close upon the twentieth century that we have outgrown our childishness, and miracles are no longer worked. It seems to me to be a question whether the decision to grant the railway company alternate plots of land along their line of route is altogether a prudent one. There are many who are of opinion that this plan did not act well in the first instance. At the same time in the present case the difficulties which the company will have to encounter will be so great that they need something more than a momentary encouragement. But can they direct their route across the "Mother Lode"? They will not be at a loss for finding an excuse for this suggestion.

In any case, the information about the new line is likely to give that incentive to emigration which the High Commissioner for Canada is so anxious to promote. But Lord Strathcona is cautious; he says nothing in his letter to the papers about the openings for miners. He knows full well that they will rush in their scores; the people that are wanted are those who can feed these scores. Such is his advice; the classes most in demand are persons with capital for investment—either in manufactures or in other channels—farmers, farm labourers, young people desiring to learn farming, and domestic servants. Advantages are offered to farmers in the shape of free grants of land in certain parts of Canada, while free grants, or Crown grants at low prices, may be obtained elsewhere. Farm labourers can always rely upon getting employment, with the prospect of becoming farmers themselves. Domestic servants are in demand in every part of the country.

A word now as to companies new and old which have figured before us within the last month. It would be as well to test the effects of strychnine first before we listen to the airy vapouring of some of the London directors. One August Colin Altken, a bank manager, was charged at the Mansion House for that he, on the 23rd of November, in the city of London, then being a director of the Central Klondyke Gold Mining and Trading Company, unlawfully and fraudulently applied to his own use and benefit £871,



A DIRECTOR IN DIFFICULTY. and at other dates other sums, their property. He was also charged with conspiring with Edgar Rodriquez Savigny, by false pretences to obtain, and obtaining large sums of money and securities of great value from persons applying for shares in that company with intent to cheat and fraud. It was alleged that 16,400 shares had been applied for, and that of the money received £5,000 had gone to Savigny, who had absconded. His whereabouts could not be ascertained and as the other directors and shareholders had been defrauded, the company presented a petition asking that it should be wound up; the order, therefore, was granted.

Of greater prominence, and on less sandy foundations, stands the Dawson City Trading Corporation. The first ordinary general statutory meeting was held amid much cock-crowing under the chairmanship of Mr. Catton, who is by this time eating in all probability honey at Victoria. The outlook appeared most hopeful, the reflections of the chairman were like a piece of iron polished with black lead, but for all that there was a rhodomontade against a Victorian newspaper, not the MINING RECORD I hope, for in the words of the Mikado. "Here's a how to do! Here's a state of things!" The following are some of the remarks made by the chairman in his report to the shareholders:

"One large placer property in which we are interested is confidently expected, at a very moderate estimate, to realize a very large sum. We hope to get returns from this property in about June next. I am not going to indicate at this early stage the location of this property; I do not think it would be in your interests that I should do so. In the hands of Mr. Turner, Mr. Pooley, and Mr. Boscowitz you may rest assured that your interests, which in conjunction with the Klondyke and Columbian Goldfields (Limited)—with which highly successful and influential company we are cordially co-operating—will be of a vast magnitude. You will remember that, according to the prospectus of this company—and it will also be gathered from the title—we do not confine our operations to British Columbia, but we include the whole of the Dominion of Canada. In this respect I should like to tell you that we hold a very important interest in the New Golden Twins, a mining property in the rising district of the Rainy River—a district which experts who have recently returned from that country will tell you is literally teeming with gold. The impression of an independent expert

is that you have a good paying property, which will pay, as they say in the West, 'from the grass roots.' I & "D. T." CO. may say that this property you control was one of the initial properties taken up in that particular district, and was selected by one of the best explorers—a man of very wide experience, who passed over numbers of others before he finally brought this to the notice of the people who took it up for him. He is a man whose judgment I do not think could be doubted."

"In addition to this, we have, of course, had under consideration multitudinous propositions for trading business, and it is principally on this class of business that your chairman is at once proceeding to British Columbia. The nature of these operations it would not be politic in your interests to disclose at this meet-

ing. That we shall reap large profits from this class of business I have no doubt whatever. I may tell you, however, that it will be principally a ready-money class of business, consisting of both large profits and quick returns."

The Marquis of Dufferin and Ava is not likely to interest himself in a bogus affair, and so when he speaks on behalf of the British America Corporation it is significant, his remarks carry weight. He read out a telegram from ex-Lieut.-Governor Mackintosh: "The British America Corporation has secured and holds the key to the majority of the golden treasure of the houses of British Columbia. We shall practically control the mineral resources of these provinces. I predict a brilliant future for the corporation and congratulate the shareholders." The President said that they had every confidence for the future; they had acquired the cream of various enterprises and in addition all the long list of mines in British Columbia as enumerated in their prospectus, which were acknowledged to be among the richest, if not the richest in the province.

There is one satisfaction about these reports, and that is that every one is certain that they have picked out the prize plum from the gooseberry tart in the Klondyke. It is to be hoped that all will be equally delighted with their choice a year hence.

NUMMIUS.

## THE SLOCAN.

[BY HOWARD WEST, A.R.S.M.]

IT would be idle to deny that the rush to the Klondyke is making its influence felt here as elsewhere; there are obvious and particular reasons why it should do so. Miners are proverbially venturesome and by virtue of their perilous and arduous vocation are especially adapted to face the hardships incident to prospecting in northern latitudes. The exodus now in process will retard development to some extent during the coming summer, unless an unforeseen influx of population should occur in the meantime. I do not wish to be understood as taking a pessimistic view of the future; nothing could be farther from my thoughts, but facts are incontrovertible and there seems at present every likelihood of a temporary lull in the progress of development here, until the first excitement from the new Eldorado has blown over and investors are enabled to see once again the star of Kootenay's destiny ascending on a perfectly clear horizon. It is rather significant that

A CURIOUS ANOMALY. the close of '97, far and away the most prosperous year we have ever known, should be marked by a general dullness and stagnation in ordinary business. To what must this be attributed? An advance in the Slocan production of something approaching two hundred per cent. from the previous best certainly calls for an approximately corresponding increase in the prosperity and condition of the people; but, instead, what do we find? Not exactly the reverse, it is true, but sufficiently near it to become very disagreeable. No one, of course, would pretend for a moment that this state of affairs will be anything but temporary but while it lasts it is impossible to contemplate it with that equanimity and serenity of countenance which we always admire so in others; and an examination at this juncture into its various causes can hardly be deemed out of place. It is admitted on all

hands that fortune favoured us last year in the matter of attracting the universally prized capitalistic attention to our potentialities as a field for profitable investment, and the then unforeseen diversion of much of this same to Aurora Borealis & Co. will doubtless account in a measure for the present inertness, but we must not allow ourselves to be deluded into the belief that this is the only or indeed the main factor, because it is not; at the best it is only of a temporary nature unless returns are shown. I may be wrong, but I think we are justified in saying that the introduction of foreign capital into the Slocan last year increased to only a limited extent the ultimate value of production which was recorded, and more than that, it matters not how much or how little outside influence is brought to bear upon the district this year, it is tolerably certain that the forces now at work are sufficient to enhance considerably the value of the output for '98 as compared with that of the preceding year.

We must look then elsewhere for reasons to explain this seeming paradox, and in the very nature of things we shall be forced to the inevitable conclusion that the chief cause of the country's backwardness is to be found in the fact that the minimum amount of benefit from the produc-

SOME REASONS.

tion of the mineral, accrues to the district in which it is mined. Improvements in mining conditions leave the wage-earner relatively in precisely the same predicament as formerly, while enabling the mine-owner to raise twice the amount of ore for the same figure.

So long as the bare costs of mining alone remain in the country we cannot reasonably look for better times than exist at present. But how long—ah, how long—is this to continue? The precious heritage of the Canadian people is being permitted to leave the country to the tune of ten thousand dollars daily from the Slocan alone, while Uncle Sam's treasury waxes fat on the four hundred dollars which he extracts from every car load of galena entering his domain. The fact that those principally interested in our mines live at ease in Spokane or elsewhere in the States, on the proceeds of our labour is in all conscience degrading enough to self-respecting citizens, but this we cannot by any possibility avoid or indeed complain of, if their enterprise and business foresight rises superior to our own, but we can at least see to it that we obtain the maximum working benefit from the circumstance of the mines being located in Canadian territory. The heart of the true Briton swells with pride when he contemplates the vastness and extent of our glorious empire, on which the sun has never been known to set, while our cousins across the line say nothing, but—well, just help themselves with our permission and co-operation to everything in sight.

## THE COAL INDUSTRY OF VANCOUVER ISLAND.

THE MINES OF THE NEW VANCOUVER COAL COMPANY.

[Concluded from Last Month.]

THE pit horns had given a long sounding blast at 9 a.m., signifying that there would be "work all round" next day, and early, very early, at 4:30 a.m., the first "miners' call" of three unearthly and long drawn soundings of the pit horn disturbed me from a

THE CALL TO WORK.

blissful slumber. At five two more blasts, and after despatching a bowl of porridge, I hurry off. I arrive at the works, just as the half-past five single toot rings out, to see a mob of workmen get on their train and leave for No. 5 pit. The men on the morning shift for No. 1 come trooping along and soon the pit-head is crowded with sinewy men equipped with lunch buckets, tea cans, and powder cans, and these with a lamp crowned cap, complete the miner's outfit, his sharpened tools—picks and auger drills—having been sent previously to the pit's bottom. Mule drivers have their stout whips around their necks. All have white faces and clean clothes for the nonce, by the way. At six o'clock precisely, Mr. Archibald McGregor, the weigh-master, arrives, and signals are sounded by the gongs, from top to bottom, and to the engine room, when, all being well and ready, the cables move and down plunges the topmost cage. In about thirty seconds a cage of men of the night shift emerges from the depths. As they come off a foreman with thirteen or fourteen men file in behind, filling the cage, and, holding by a bar overhead, down they go and another cageful of humanity arrive with blackened faces and bespattered clothes and lamps still alight—the descending shift have no lights, owing to the powder carried down. Boxes of tools are despatched and in about ten minutes the shift has changed. The conduct of the men is characterized by perfect discipline and order—there is a total absence of jostling or noisy talk. At the invitation of the manager, Mr. William McGregor, and provided with a lamp and necessary etceteras, we take our places on a cage (there being but one deck we are able to stand upright), and holding the bar above us we drop

DOWN NO. 1 PIT.

through the darkness for 650 feet, reaching the bottom before we have really realized our position. The landing round about the place blazes with electric incandescent lamps—a veritable magician's cave. But if ever there was a place of business it is at the foot as well as in the workings of a coal pit. The hours of life below are short—in all eight hours, out of which the lunch time is taken, and in many cases it occupies quite an hour to go to and return from the working places, leaving only some six hours and a half of work. Men who are paid merely for the actual coal mined and filled by them into cars, cannot waste a minute of the precious time, so limited, at their disposal, and their results press on the heels of the pushers, haulers, brattice men and those working by the shift, so that all must be going at a lively pace or a deadlock will soon ensue. There is, therefore, no opportunity for gossip, and, as, once away from the electric light, all is black as Walpurgis night, although I follow my guide with implicit confidence, yet there is nothing to see, and only when attention is directed to some point of difficulty that had been met with in the development of the mine, such as an up-throw, or down-throw, or a pinch out, or horse back, etc., and an explanation is given of how it was overcome or got round, is the monotony varied. Whoever proposes to go down a coal pit for the fun of the thing may save themselves much unnecessary toil and do the thing at home, for if they happen to have a damp, low-roofed coal cellar, they can evolve as much "fun" by groping about, over their own coal, as it is possible to find in an exploratory tour of a coal pit. A knock on the head every now

and then from projections in the roof of a low, short cut, along which one is trying to make headway, by the feeble lamp glimmer, with one's back almost at right angles to one's legs, is trying to say the least, and I remember with a pang that if I had been with the workmen I could have boarded the train of empty cars, which conveyed them so comfortably along the No. 1 north level to their work. The electric motors traverse this level for a distance of about two and a half miles from the pit to a long heading known as Boyce's Incline (named after Tully Boyce—for it is usual to give the name of the leading contractor to a gangway which his party has put through.) When carrying men the motor only runs at about five or six miles an hour, but on returning with from forty to sixty laden cars, each containing from thirteen to fifteen hundredweight of coal, it travels at a very much greater speed.

**THE  
ELECTRIC  
MOTORS.**

There is a meeting place and sidings where the motors going in opposite directions can pass (very much as they have on street car lines). The system has been in use for several years and no mishaps of any consequence have occurred, which is a very excellent record. Mr. H. F. Bulman, of England, was recently conducted through the mine; he was much interested in and closely examined this system of underground hauling by electric motors, and declared his unqualified approval of the mode of construction and operation adopted, adding that there was nothing of the kind as yet in all England. There they still adhere to endless rope and tail rope systems. Mr. Bulman is one of the authors (with R. A. S. Redmayer) of a treatise just published, by Crosby, Lockwood & Son, 7 Stationer's Hall Court, London, on the Colliery Working and Management of Mines.

The levels, inclines and slopes are from ten to twelve feet wide, with an average height of six and a half feet, are substantially timbered where needed, and are flanked by solid pillars of coal of as many as forty yards in width which form a grand support to the superincumbent mass, measuring at some points 600 and in others 1,800 feet to the surface. The inclines, levels and slopes are the great highways and with the airways driven alongside them form the lungs of the mine; similar wide pillars also bound the airways or counter levels, and behind the pillars roadways are driven, off which the miners open up stalls or rooms, out of which the coal is mined. In this pit the system of working is called the

**THE "PANEL  
AND STALL"  
SYSTEM.**

"panel and stall." The panels are limited areas of the seam which are sub-divided into pillars and stalls which are worked from twenty-five yards centres, and when the stall is worked to the end of its limit or panel varying from 200 to 350 yards in length, there remain in the mine solid coal pillars of fifteen yards in width on each side of the empty space (or worked-out stalls) and the result, generally, is that from three-fifths to two-thirds of the original coal seam is left standing in the mine awaiting the time when the extreme limitations of operations of the pit have been reached, and the order is given to draw the pillars, the execution of which commences at the farthest distance from the pit (to the "rise" or "dip" of the seam according to circumstances), the pillars are withdrawn, letting the roof come down behind, so that the life of a pit is a long and lingering one, and many

years elapse before an extensive one is worked out. The "levels," while they are graded systematically, follow the contour of the seam transversely, as we would grade a road round a hill side, and therefore the levels are not straight. The workings off the main levels are separated by means of the inclines and slopes of the seam, which are driven in right lines, some inclines running up from 1,000 to 1,500 yards. The coal is brought from the stalls to the inclines in cars by mules wherever they can be worked, and otherwise by the pushers, who have also to keep the miners supplied with empty cars. The cars are let down the inclines by rope rolls or drums regulated by brakes, the full cars descending by their own gravity, the empties being drawn up at the same time, the track generally being double. At the foot of the inclines the cars are taken away by the motors, in return for empties brought in. I am now alluding to what is called down the mine the inside levels in distinction to the main slope, to be shortly noticed.

The ventilation is upon what is known as the separate split system and the mine is divided into districts entirely independent of each other. The fresh air is taken in from the Protection Island shaft which is connected with the workings of No. 1 shaft, and if necessary all the miners could be hoisted up to the Island.

**THE MINE  
VENTILATION.**

As to fresh air, I have enjoyed good air all the time of my stay and have even felt cold and as if in a draught now and then, although the natural temperature of the mine is—according to depth—several degrees warmer than at the surface. After having noticed the self-acting inclines, heard the rumble, and seen the rush past of the mule trains, I enter several of the stalls, and here there is a—well, a pit(iful) smell, arising from powder smoke and from the fish oil used in the lamps, as well as from the oily stuff with which the car wheels are lubricated; there is also dust in the air—coal dust—and I become aware that I am gradually becoming what is known as "blacked up". The air is conducted into the "stalls" (often called "rooms") and a miner is attached to his stall, as many a lady is to her drawing room. All the miner wants is a good face of coal and fair wages, and in this pit he appears to have both at command, and fair play as well. Pure air is continually passing from the brattice or partition which leads the air as near the face as it is possible and at the same time avoid the breakage of the partition (formed of inch rough lumber) by coal blown out by "shots." The miners seemed happy enough at their work, and I could not help noticing the immense size and weight of the lumps of coal which the miners by some knack and mode of bringing thighs to the assistance of arms, managed to lift and place in the cars. Surely, is gravity more easily overcome in the depths of the mine than on the surface?—or is it the knowing how and having the strength to do it?

Besides the overman—Mr. Joseph Randle, Jr.—who appeared to be here, there and everywhere all through the mine, and must travel many miles in the course of his duty, there are shotlighters, who examine the position and loading of the holes which the miners purpose firing and, on approving, pass them, then firing can take place, in safety. This is a necessary safeguard against "blown out shots" which send many yards of flame out among the unavoidable deposits of coal dust, and possibly deal out death and

SOME OF THE OFFICIALS. destruction around. The firemen are also continually busy on their rounds examining for gas (they follow up the work of the firemen of preceding shifts) and test every place where

it is likely to accumulate; they also watch the ventilation of the mine. The "boss" pusher is also an important personage in effecting the output. While "lunch" is on, the powder smoke has time to clear out of the stalls, and I leave the "inside" (of the great fault) and in due course return to the pit bottom.

Later I am taken to see what is generally the first "sight" shown below,—the stables. To the south of the pit, in the No. 1 south level is an excavated chamber, forming comfortable stabling quarters for about fifty mules, half of which are on the inside, miles

away, hauling cars to the inclines—they are trotted along the No. 1 level, from which the electric current had been cut off, before the descent of the morning shift, and the coming

THE UNDERGROUND STABLES. home of these animals and the shutting off of the electric current to enable them to traverse the level means that the men must find their way out on foot, but they make use of short cuts and so the journey is not so long. Of course the animals that are now eating so contentedly will go to relieve their brethren so as to be on hand before the afternoon shift come down at two o'clock. Nothing is wanting to make the under ground life of the poor beasts as tolerable as possible. They have the best of fodder, not omitting the succulent roots produced on "the farm," and Chase River water is brought in pipes down the pit, in abundance. The bedding is of peaty soil from spots on the company's estate, sent down for the purpose, which, after use, goes up with the manure to fertilize the farm. Mules working in places off the main slope, are lodged in the "stables" on the surface. The mule drivers' and stablemen's lives may not be thought by them to be very happy ones, but one cannot help feeling that the mules themselves have a good enough time.

Proceeding to the well lighted landing, and observing the dispatch of cars made by the "cagers," who standing in a perpetual downpour of air from above, damp and cold in temperature, as it were in a constant draught, yet have positively no time to "catch cold," from mere press of work, for the cars come and go without any respite. The cager's job is not a sinecure. In the engine room near the head of the main slope is a fine winding engine, of sixteen inches cylinder, thirty-six inch stroke, and five foot drum, which hoists cars from the slope. The steam comes down the No. 2 shaft, into which the exhaust is conducted. The main slope has been driven for upwards of 6,600 feet in an easterly direction—at the face the depth below the surface datum level is about 1,450 ft. On both sides of this long slope

THE MAIN SLOPE. counter slopes are driven as far down as 2,400 ft., and from thence a counter on one side. Off the slope are levels running north and south, numbered from 1 to 5. Of the No. 1 north I have already spoken, and of the others, suffice it to say that No. 3 north is connected with the Protection Island shaft workings. The air in the workings off the slope is brought from the downcast of No. 1 shaft, and returns up the No. 2 or upcast shaft. I noticed some very fine looking coal on the slope, and one's attention is at once di-

rected to the uniform, hard texture, and cubical fracture of these huge specimens. It is true, hard, bituminous coal, without any bony or foreign matter to be seen. The depth of this slope is about a mile and a quarter.

I have now trespassed somewhat considerably upon Mr. McGregor's valuable time and so thanking him for his kind escort I ascend once more to the surface.

After taking in some of the remainder of the company's widespread undertakings in the suburbs, to describe which fully would require a volume, I note briefly that the No. 5 pit, already mentioned, is down 508 feet to a part of the Douglas seam, having the characteristics of what is known on the market as

THE SOUTHFIELD COAL. "Southfield coal"—a first-class steaming and coking coal. The mine is worked on the same principle and by machinery and appliances similar to those of the No. 1 shaft, excepting the

electricity. The fuel is in great demand—it is said to burn to the last particle, leaving no waste from dross or small coal. The railway connects with the esplanade shipping wharves, and is about six miles in length. The field of coal is very extensive and is now under development by diamond drilling machines. The company owns large areas of coal lands to the dip and southwards of the No. 1 and No. 5 shafts, which are now being thoroughly explored. Mr. Richard Gibson is overman.

The Protection Island shaft and its workings are in effect an expansion of the No. 1 Shaft mine. The workings have been carried far by two main slopes to northeast and eastward, each of them being upwards of a mine in the direction of Gabriola Island, where the company has a large field. The colliery plant on Protection Island is, with its engines, bunkers and wharves, etc., a model of successful mechanical application. The coal is similar to that raised in No. 1 shaft. The extent and limits of the field are in course of exploration, and the possibilities are very great. Mr. Thomas Morgan is overman.

The Northfield colliery is about four miles from Departure Bay. Here the seam is called "New Wellington coal." The seam averages from three to five feet thick. The shaft is 400 feet in depth, and the length of the slope at the foot of the shaft is 1,000 yards. The system of working is that

THE NORTHFIELD COLLIERY. called the "Longwall," in which all the coal is extracted as mining proceeds. At this mine the machinery and plant are all first-class. The pit is served

by a railway of five miles, which terminates in a wharf of splendid construction at Departure Bay.

In all the mines of the company, naked lights are used in ordinary work, but the Firemen and Workmen's Committee of examination, of course use safety lamps. The "dip" of the seam or seams in the company's estate is from six to eight degrees. Coal washing machinery is constantly in operation, and utilizes all the small coal which is not consumed in the furnaces. There are about 1,000 men in the company's service.

Every precaution has been taken to guard against the spreading of fire in the workings, hydrants and hose being placed handily at convenient stations.

The company's business embraces the disposition of their landed properties for actual settlement, and special inducements are afforded to those who desire

to become *bona fide* occupiers, with liberal terms of lease or purchase. Notably, the system introduced by Mr. Robins, of the division of large areas, into five acre lots, which are let on lease with right of purchase, has been taken advantage largely of—by the workmen principally. The company have cleared, out of the forest, and bushy swamp or bottom lands about 500 acres in several tracts, and have followed up the clearance by thorough tile drainage and culture for production of grain, roots and hay, meadows having been also sown in grass. The "Farm," while productive of crops that ought to yield, if not instantly in due course, a fair return, for the considerable necessary outlay.

The preliminary operations of clearing the thousands of sturdy giants of the woods, root and branch, with the smaller timber, bush, tangled undergrowth, ferns and all out of sight and mind, were of the greatest use as an object lesson, and so with the drainage, classification and mixture of dressing of soils, comprising every kind almost—clay, peat, loam, gravelly loam, light sandy soil, and black vegetable soil. Under the direction of Mr. Robins dressings of the peaty soil from swampy low lands have been applied to the gravelly soil of which the up lands mostly consist with excellent effect, in fact, it acts like manure. On the other hand, a top dressing of gravelly soil, carted from the hill side, and spread over the peaty land, has an equally beneficial result. The explanation of this is, that mixture of the inert peat soil, with the sand or gravel, makes an open soil, that allows access to the air, and so converts the dead chemical matter into plant food. In short, whilst the peat alone, and the gravel alone, will grow almost nothing, the two mixed together, produce abundant crops. The heaviest crop of timothy hay produced in the district was grown on soil that was little better than road metal, but had been top dressed with peat from a neighbouring swamp. The company has laid about sixty miles of drain tiles, from three inch to twelve inch diameter and has excavated several miles of open ditches.

In the matter of roads, both as to excellence of construction and finish—in most instances well crowned and coated with a thick layer of gravel, the company are accorded much praise by the occupiers of the five acre lots and also by the public at large—these efficient roads, on the whole, are quite twenty miles in length, and include substantial bridges over rivers and streams.

The farm and its divisions, the several paddocks of grass and hay lands, and other portions of the company's property, are well fenced with board fences, extending over fifteen miles in length. Gates for traffic, wickets for pedestrians and paths are provided, admitting of passage through all parts of the estate, besides lovers' walks and trails through the woodlands held in reserve around the town. The clearing and cultivating have not driven the chivalry and romance from Nanaimo. The clearing of land for the plough that was only covered by wild grasses, willow and small brush, has cost from \$50 per acre, and where timber was large and growing thickly as much as \$400 an acre.

Experience, so far, shows that in the heavy timbered land, such as is found at the back of Nanaimo, an inexpensive powder, if it could be produced (and an association of farmers could manufacture a suit-

able powder themselves) would reduce the cost of clearing by nearly one half.

About 500 acres of forest land has also been cleared by holders of five acre lots, and the same is built upon substantially—in many cases ornately—and under cultivation.

The story of the coal industry of Vancouver Island is not half told and our available space is exhausted.

The wonderful Wellington colliery, the property of Messrs. Dunsmuir and Sons, with its several pits, where a first-class article known as Wellington coal is mined, conveyed to Departure Bay, by locomotives and waggons, along a line of narrow gauge railway of five miles, and there shipped at their extensive wharves, alone would form a subject of interesting and edifying description, but this subject, as well as an account of the mines of the Union Colliery Company, at Union, in Comox district, which with their renowned coke ovens, are also of first importance and where operations are carried on in a large way, and also of those valuable enterprises of the West Wellington Coal Company, the Wellington Extension mine and the Alexandra mine, (of the E. & N. Railway Company) as well as the undertakings of the Oyster Harbour Coal Company and of the Cambrian Coal Company, must perforce of circumstances, at present, to our regret, remain in abeyance, until the next favourable opportunity, when we trust to do them ample justice, and at the same time afford our readers a view of the great coal industry of our favoured island.

In the meantime we wish them one and all success and prosperity in their efforts to raise the coal production of Vancouver Island to a position that will command the foreign markets of California, Central America, Mexico, Hawaii, Alaska and Japan.

#### SOUTH KOOTENAY HAPPENINGS.

**M**INING business in Kootenay was never more active than at present and the mineral exports still continue to be enormous, amounting to over a million and a half for the first six weeks of the year.

It seems fairly certain that the Crow's Nest Pass line will be built through to Nelson as quickly as possible. The reason alleged for this change of plan is that the Dominion Government has announced to



FERRYING THE COLUMBIA RIVER AT TRAIL.

the C.P.R. that there will be no subsidy forthcoming until the whole line is completed. There are two par-

ties of surveyors out now along the western shore of Kootenay Lake which the line will traverse. One consequence of this continuation of the line will be a necessity for the construction of a trestle bridge some four miles long across the flats where the Kootenay River flows into the lake. As the water in flood time rises from twenty to thirty feet above its winter line it is plain that this bridge will be no small undertaking. Until some such decided step is commenced all these rumours may be only the weapons which the C.P.R. uses so deftly in making its deals with other people. The report current of the proposed C.P.R. smelter at Robson was one of these and the bluff succeeded with Heinze.



MR. H. S. WALLACE, ROSSLAND'S NEW MAYOR.

Meanwhile the Nelson and Bedlington is a going concern. Bedlington is a townsite on the International Boundary near where the Kootenay River enters the province. At present the line of this railway is surveyed down the east side of the Kootenay Valley to Koskonook, which is the new name of the town where the Crow's Nest Pass line also reaches the lake. Although promoted by a separate company this N. & B. Railway will connect at the southern end with the Great Northern and it is an open secret that "Jim" Hill is behind it. It will be greatly to the country's benefit to have further competition in the transport business.

The local municipal affairs, though of course quite devoid of interest to people in other places, have been causing infinite amusement here. A wave of virtue swept over the council. They would do away with nickel-in-the-slot machines. They would close all saloons and stores on Sundays and the scarlet woman should no more dwell in the house on the wall. But this virtuous business did not seem to suit the constitutions of the councillors. Two of them are publicans and one is a soda water maker, and the Sunday closing business hit them hard. The result was what is known as a "holy row." In the midst of this the city clerk bolted with some small pilferings. The Mayor had domestic troubles and got on the rampage and actually went so far as to advertise all his property for sale and vowed he would leave the town forever. At this threat everyone was pleased, but the knowing ones doubted its sincerity. One councillor who appeared to have some little backbone declared that he would move to reduce the

Mayor's salary to one dollar a year. But the whole thing crumbled away like a pack of cards and at the first meeting they all kissed and made friends. The whole of our municipal government is a most expensive farce.

A cold-blooded murder was committed in Koskonook the other day and the man accused of the crime is now in Nelson gaol awaiting trial. The victim was quietly sitting in a chair when the accused, who had been drinking with him, quietly drew his "gun" and shot him dead. The alleged murderer is a well-known western "tough," and it would be well if the Government would appoint a special assize to dispose of the trial, so that other "toughs" who are pretty numerous in the railway camps may learn that their peculiar customs are unpopular on this side of the line.

There is every probability that the Hall Mines shareholders will be gratified with another dividend before long. PICK.

### SOME EXPERIENCES IN YUKON.

[BY A SURVEYOR'S ASSISTANT.]

THIS is a story of a journey from Vancouver to the summit of the Dalton Trail, and although I say so who shouldn't there is much in it that will prove both interesting and instructive to those intending to seek for gold in the north lands journeying by this route.

Our party, then, consisting of fifteen able-bodied persons—we were engaged to go on a survey—left on the 24th of November, 1897, by the steamship *Coquitlam* and after an exceedingly rough voyage in due course arrived at Mary Island when we anchored in order to pay tribute to the United States Customs House, and having obtained the necessary clearance papers for entry to an American port, steamed to Juneau. Here we had an opportunity and ample time

THE  
TREADWELL  
MINES.

to both view the "lions" and places of interest of Alaska's capital "city" and also to visit the famous Treadwell mines nearly across the inlet about a mile from the town. Oh! the din and row of these five hundred stamps pounding away for dear life all at once! My nerves have not yet recovered from the effects. And they tell me that the mills' capacity is further to be increased by three hundred additional stamps! In the Treadwell mine and mills no fewer than 750 men are employed. It is a really wonderful enterprise, and the manner in which the mining operations themselves are carried on is quite remarkable. The ore is, as of course every one knows, found in an enormous deposit and it is literally quarried. All the drilling is performed by machinery and blasts are put in at different spots over the whole face of the hill, generally one blast loosening some two hundred tons of rock.

But to return to Juneau. For the sake of experiment I priced the articles in the shops sold to Klondykers, and proved to my satisfaction that you can buy to better advantage in either Victoria or Vancouver, moreover since my return I have found that the outfitters of our coast cities carry a much better class of goods than they did ere I left on my

JUNEAU  
PRICES.



journey north. Leaving Juneau we enjoyed a pleasant run to Haines' Mission, arriving there about mid-day on the 3rd of December. There is an excellent well-sheltered harbour at Haines' Mission. Here we bid adieu to the *Coquiltam* and her captain, who, by the way, is one of the best navigators on the northern routes, and now that wrecks are becoming things of everyday occurrence in these somewhat dangerous waters, this is a reputation worth enjoying.

After getting our supplies ashore—no small job, for our belonging weighed altogether well on to four tons—we camped in the timber about a quarter of a mile from the beach in the direction of Chilcat Inlet. Meanwhile we had the pleasure of the company of



WHARF AT SKAGWAY.

Inspector Smith, of the U. S. Customs, who was to see that we didn't linger in American territory longer than necessary. Still we were obliged to stay in camp two whole days on account of heavy rains,

which made the trail to the Inlet well-  
THE CLIMATE nigh impassable. But does not this  
AND SCENERY. knock preconceived ideas concerning  
the Yukon climate on the head?

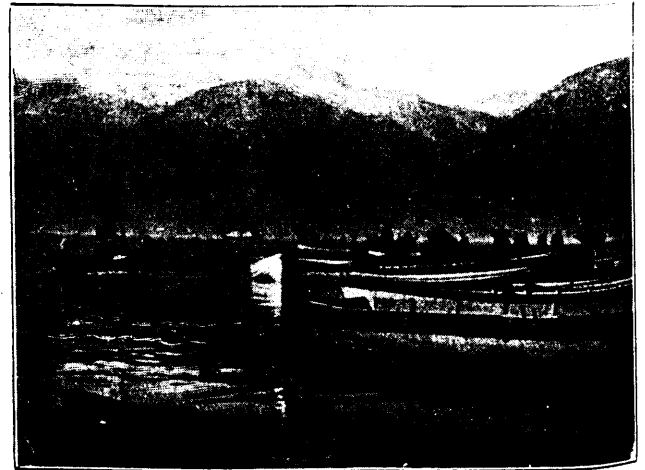
Heavy rains in December! The fact of the matter is that the climate of the Alaskan coast is quite as mild (but if anything it is even more "damp, moist and unpleasant") as it is in latitudes 40° and 50°. Moreover the scenery is very similar. One finds also the same growth of plant life, and the dense forest of firs characteristic of western British Columbia with magnificent hills, some snow-clad during all the seasons of the year, but all picturesque, and the scenic effects at sunrise or sunset sometimes when there happens to be a clear sky and a clear atmosphere are of unexcelled grandeur and beauty—visions once seen never to be forgotten.

At last we were able to "hit the trail" in real earnest, and made our first cache up the river just beyond where members of the unlucky Yukon-Humbolt expedition were engaged unloading

grain from a scow. It will be remembered what a tremendous "how-d'ye-do" there was about a relief expedition starting for Dawson last October, and how the leaders promised their destination

would be reached before Christmas. Well, certainly a good deal of money was invested (ought I to say sunk?) in the enterprise. Two hundred head of cattle, three hundred horses, and three hundred tons of supplies were shipped up to Pyramid Harbour, and they never got much further. Now I am told the men

hired to take part in this mad Yankee undertaking cannot get their pay and many of them are accepting grub (it is one good thing that there is plenty of that) and tools and prospectors' etceteras in lieu thereof. I believe the MINING RECORD predicted the non-success of the project at the time it was first disclosed. Well, failure was obviously inevitable, and from the first it was ridiculed in Juneau. In fact I was informed on excellent authority that if there had been the slightest chance of getting supplies to Dawson City last autumn any amount of capital could have been raised in Juneau itself for such an enterprise. The Yukon-Humbolt people, however, it is fair to add, have possibly made a little money by killing their cattle and selling the carcasses in Skagway. To emphasize my former remarks with regard to the mildness of the climate in the immediate vicinity of the sea-board, I may say that there was an abundance of fodder in the meadows for the horses of this expedition during the whole of December, al-



LANDING AT SKAGWAY.

though the animals were also fed a small quantity of grain daily.

Up the Chilcat River on the ice is easy going enough for the first ten or fifteen miles, but if there is anything more unpleasant than to travel when a

sand storm, or sand blizzard, to speak  
UP THE more correctly, is raging, I hope  
CHILCAT. never to be introduced to the experience.

These sand storms seem to be of continual and constant occurrence in this neighbourhood, the fierce winds carrying the sand from the uncovered river bars and driving the particles in clouds before it. To be in a sand storm at all is to undergo a painful and eminently disagreeable operation, to have to face it while hauling a laden sleigh or toboggan is—well, words are too weak to express what it is like. All I know is we went through it and curiously enough lived through it. After, however, passing a deep gulch some fifteen miles up on the east side of the river you are no longer troubled with wind storms, and the sand bars also begin at this time of year to be thinly covered with snow. The river here at high water would probably be from half a mile to a mile wide, but at this season the water channels are narrow, being large expanses of sand. This wide space uncovered by timber gives the wind a great sweep and warm clothing is absolutely essential, even though the actual cold may not be intense.

In due course, travelling partly on ice and partly over meadow lands, we reached the Indian village of Kluckwan, which, judging from the number of houses, should contain a population of from four to five hundred. It is really a remarkable village this to find in so god-forsaken a portion of the world. I am not well up in architectural knowledge myself, but I was told by a member of our party who was employed for a short time to help excavate for the cellars of the Parliament buildings at Victoria and who therefore should know what he is talking about, that most of the buildings were in the early Tudor style of architecture. I could not say positively of course that this information is reliable, but I do know that every one of the build-

A MODEL  
INDIAN  
VILLAGE.

ings in this model village had an exceedingly neat and withal snug appearance, being supplied with panelled doors and handsome sashes and windows, the walls being moreover painted. When it is remembered that the Indian villagers were obliged to carry all their lumber and building materials used in canoes up stream for a considerable distance, the results of their industry and skill are all the more admirable. But I must not forget to mention their latest acquisition which they of course prize very highly. This is nothing less than a marble monument which was brought all the way from Chicago at a cost to the inhabitants of over \$600 and is to be erected to the memory of a great chief, by name "Kandygoff," who was drowned in the Chilcat River some two years ago.



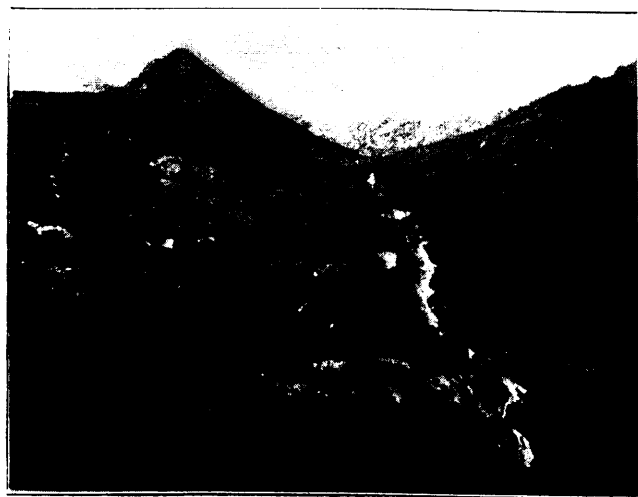
STORE AT SKAGWAY.

At Kluckwan we found it necessary to cross the river and then we discovered one reason why the Indians are so prosperous. We hired some of the men to help us carry over our supplies. They were not modest in their demands when it came to a question of pay. Indeed I could live in fair comfort for at least a month (in civilized retirement, I mean) on the amount demanded by one gentleman as remuneration for a day's work. But for all that they are a fine race of men, much superior to the coast Indians. Opposite the village there is a large tract of bench meadow land, the soil of which, judging from the vegetation growing upon it, is of excellent quality, and who knows may yet be profitably worked for agricultural purposes. Again beyond this and about a mile and a half above the village we strike the junction of the

Klaheena River with the Chilcat, and our course being up the former, we followed this stream for four miles or so without adventure, although the depth of the snow continues to increase. Here we are repeatedly compelled to ford and re-ford the river; six times while journeying a mile being the record. It is disagreeable work this walking

"SWIFTWATER over slippery boulders with the icy BILL" AND water trickling down over your boot THE FORD. tops, not to speak of regular duckings. But this must be the place described by "Swiftwater Bill" in his graphic account published in the New York *World* of a trip from Dawson to the coast. He alludes to his "terrible hardships on the Klaheena River" and illustrates the story with a picture of himself wading up to his middle carrying a moderately sized man on his back. "Swiftwater Bill," if he performed this feat, could give Sandow points and beat him. We found it utterly impossible to wade through the swift current without falling when the depth of the water was not more than two feet.

But speaking of newspapers, reminds me that we fell in with a young English journalist, a Mr. Hey-



VIEW FROM DYEA TRAIL.

wood, representing the London *Daily Mail*, near here. He was on his way to Dawson City, but I heard later that he had been obliged

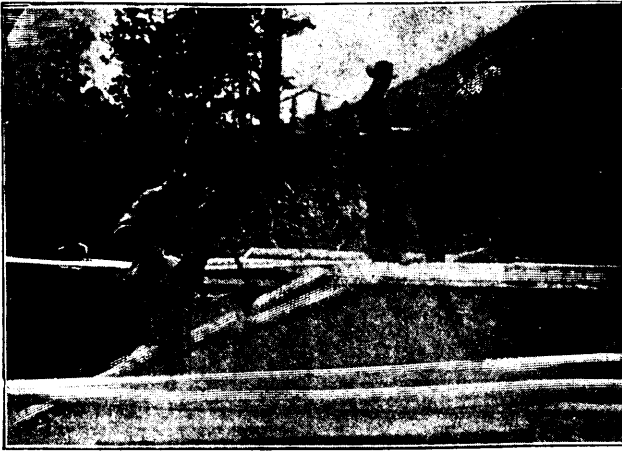
AN ENGLISH JOURNALIST ON THE TRAIL. to abandon his purpose as his hands and feet had been badly frozen. Poor chap, he belongs to that class of men who know everything and consequently never will learn. Because he had accompanied the Jackson-Harmsworth Arctic Expedition, he imagined that he was a second Nansen and he made a mistake.

The nearer we approached the summit the deeper of course the snow became and we soon found it necessary to take to snowshoes, which, by the way, we continued to use thenceforward and on the return trip to salt water. Snowshoes are an essential part of every miner's kit, and a party of Danes whom we met were obliged to turn back on the trail a considerable distance because they were unprovided in this particular. After travelling by the Klaheena River for a distance of about twenty miles of fairly easy going we struck the Dalton Trail, which cuts across a hill and thereby avoids a cañon



NEAR of some extent. Some seven miles  
THE SUMMIT, farther on the trail again descends to  
the river. There is then a couple of  
miles of more or less level country when you start  
the ascent to the summit—a steady climb of ten miles  
or so. Almost to the summit itself timber grows  
plentifully and you can always find shelter for your  
camp, the intervening distance between where vege-  
tation ceases on one side of the summit and is found  
again on the other is not very great, and can be  
crossed by making a sort of forced march starting  
naturally very early in the morning. Here ptarmi-  
gan are plentiful, but alas and alack!

AGGRAVATING not a man jack of us had brought a  
PTARMIGAN, shooting iron of any description what-  
ever with him, and the aggravating  
birds hopped about in the snow and jeered at us  
knowing full well, too, that the everlasting diet of  
beans and bacon for breakfast, bacon and beans for  
dinner and again beans and bacon for supper, even



WHIPSAWING LUMBER AT LAKE BENNETT.

though we had the appetite of giants, was becoming  
appallingly monotonous.

The trail at this spot where it first leaves the river  
is not sufficiently good for sleighing, hence we had  
to pack our supplies for some seventeen miles,  
tramping twelve of which in Indian file. The rise  
in this distance is near 2,200 feet, although, of course,  
this would not represent the length of the climb, as it  
is a continual business of going up one hill and down  
the next and so on. The Dalton Trail crosses a much  
higher summit than the one over which we ran over  
survey line, but this is accounted for, the trail being  
used mostly by cattle drivers, the open country where  
grass food is plentiful being preferred.

Having reached the summit, where we found a  
number of dead horses, we started on the return  
journey, surveying as we went. This was easy enough  
work, except where we had to cut through the timber,  
and felling timber with the snow from six to eight  
feet deep is no joke. We made the return trip in  
the comparatively short time of two weeks, travelling  
as I mentioned before, on snowshoes, partly because

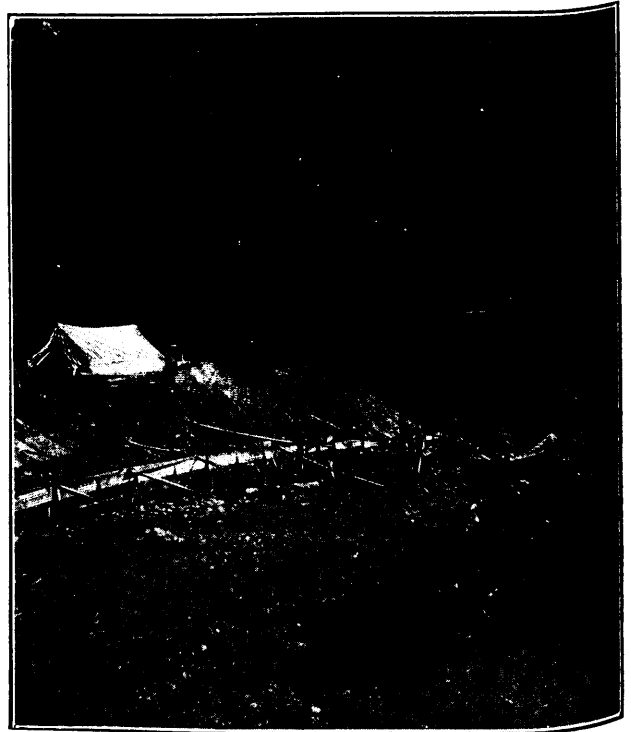
of the depth of the snow and also be-  
cause of the rotten ice on the river.  
THE RETURN JOURNEY. The climate inland resembles very  
much that of the interior of British  
Columbia—heavy snow falls coupled

with occasional "cold snaps" and "chinooks." The  
average thermometer readings taken every day at 7

a.m. and 8 p.m. registered 25° Fahrenheit. Only  
twice indeed did the mercury fall below zero during  
our outing of nearly three months. On the way  
home we called in at Skagway, which is what our  
American cousins expressively term a "red hot" town  
in every sense of the word. It is a wonderful place,  
nevertheless, with a population of perhaps two thou-  
sand and some of the buildings are quite grand,  
though "shacks" of course predominate—a city built  
in a night.

Now let me conclude with a few words of advice to  
would-be Yukon gold seekers. It is good advice be-  
cause I have learnt my lesson from practical experi-  
ence, which is more than most advisers can say. In

the first place, then, the tenderfoot  
A WORD OF ADVICE. miner should provide himself with  
many sacks waterproof cloth within  
and canvas without in which to pack  
his food-stuffs and any other articles requiring pro-  
tection from rain and snow. The first cost of these  
coverings is very little, and the saving ultimately to  
one's outfit is correspondingly great. Why, it nearly  
always happens that one-fourth of perishable food  
like flour or sugar is wasted for the lack of ordinary  
precautions. And when every sack of flour for in-  
stance is worth all the way from \$25 to \$50 after being  
carried inland any distance, this loss becomes con-  
siderable. In clothing, good Mackinaw suits serve



DISCOVERY CLAIM, BONANZA CREEK, KLONDYKE.

all purposes, not only turning snow and rain but are  
warm and comfortable. Then in sleighs, let me re-  
commend the kind known as the "Nansen"—a sleigh  
with wide hardwood runners, and lashed, unlike other  
makes, which are nailed, together. One appreciates  
these features on the march. As for toboggans, they  
are utterly useless and I fear many a poor man who  
was induced to burden himself with one of these in-  
cumbrances has imperilled his soul by expressing too  
forcibly his opinion of the maker and his jim-crack  
vehicle.

## A METALLURGIST'S GRUESOME TALE.

HOW WE CREMATED POOR GEORGE LARKIN.

Written for the B.C. MINING RECORD by Randall H. Kemp.

**D**URING the summer and fall of '70 I was employed as an assayer for the Dead Shot Mining and Milling Company whose mineral claims and milling plant were located in Goose Neck Gulch, Nevada. Late in the fall it was found necessary to close down the mines and mill for the simple reason that the ore was too low grade to pay expenses, leaving dividends out of the question.

Consequently all employees except a watchman for the works and myself were discharged. I was kept in the company's employ for the time at half pay as they expected to require my services in a similar capacity elsewhere the following year.

Everyone except myself and the watchman soon left the locality and as there was neither town nor habitation within many miles of us we laid in a plentiful supply of everything needful and made preparations for spending a lonely but comfortable winter in that snowy region.

My companion, Jim Sykes by name, had been the retort man of the works. It was formerly his duty to take the amalgam from the mill and separate the quick-silver from the precious metal by placing the amalgam in a large retort; by keeping up a hot fire under the mass the "quick" would be driven off in a vapour and condensed with cold water, while the residue, silver and gold, left in the retort was turned over to me to be melted, then poured into moulds, thus forming bricks or bars in which shape it was sent to the bank at San Francisco.

Jim had followed this kind of employment for several years and was well versed in his business. As he was a very agreeable fellow I was well pleased when he decided to accept the job as watchman and remain with me through the winter.

The heavy snow began to fall about the first of November and by the tenth we had made up our minds we should not see another face for several months, as we were not situated on any travelled road or trail and as far as we knew all stray prospectors had long since left that section and sought a more congenial clime to await the opening of the buds in the spring.

Imagine our surprise, therefore, one day while a blinding snow storm was raging outside, and just as we were finishing our evening meal in the office, to hear a loud knock at the door. We were startled, but Jim hastened to open the door. On the threshold stood a man whom Jim quickly pulled inside as the drifting snow was fast filling the room.

The stranger, in a weak, tired manner, bid us "good evening," and seated himself in a chair which I placed near the fire for him. We soon had a warm meal ready which our guest ravenously devoured. While eating he informed us he had been prospecting near the head of the gulch several miles above us. He had had two partners, and as he was very ill when the time came to leave the country on account of approaching winter his companions had deserted him, leaving but a scanty supply of provisions in the log hut which they had hastily thrown together for his shelter. He had subsequently recovered somewhat and had then decided to make a desperate effort to reach civilization.

There was nothing left for us to do but to entertain our guest as best we could, and as we were well

supplied with provisions and bedding, this was an easy matter.

Being very tired, our guest was not talkative, and soon retired to bed in an adjoining room. I noticed that he walked in a mechanical sort of way like an automaton, and when he sat down in a chair he dropped like a gunnysack filled with some heavy but yielding substance.

The next morning our visitor felt much better, and after breakfast gave us something of his history. His name was George Larkin. He had been employed at the quick-silver mines in California for a long time and had also followed placer mining and gold amalgamating in quartz mills.

During the forenoon Jim and I had some business in the mill building, so we left Larkin in the office.

Jim remarked to me: "That fellow is loaded."

"Loaded? How do you mean?" I inquired.

"Why," said Jim, "he has handled so much quick-silver his body is entirely filled with it."

Jim asked me what I thought Larkin would weigh. I answered, from the size of the man, he could not be much over 160 pounds. Towards evening, however, I found my guess was very wide of the mark. Happening to have a platform scale in the assay office, Jim suggested we all test our weight. Larkin rather reluctantly stepped on the scales, when to my utter astonishment the register marked 236 pounds. Jim knowingly winked and whispered, "I told you so."

For some weeks Larkin's general condition of health remained about the same, but on December the 20th, according to the diary I kept that winter, he became violently ill and could not leave his bed. Jim and I attended him faithfully and gave him such simple remedies as we had by us, but our ministrations were of little avail, and four days later the poor fellow breathed his last.

Jim and I prepared the body for burial, laid it out on a table in the furnace room of the assay office and adjourned to the main office room which we used as kitchen, dining room and parlour and made plans for the interment of the remains.

For a long time I could get no satisfaction from Jim. He sat quietly thinking. Finally he straightened himself up and addressing me, said: "Wouldn't you like to go into a speculation and make several hundred dollars these slack times?" I readily assented to the proposition and inquired how it could be done.

"I told you," said Jim, "that Larkin was chock full of quick-silver and probably he is loaded with gold and silver as well. Now you see, it is next to impossible to dispose of his remains by burial. If we plant him in the snow the coyotes will dig him up; we can't very well make a grave in the frozen ground with the wind blowing like it is all the time, so we had better cremate him."

"Cremate him!" I ejaculated in astonishment. "How?"

"Why, in the big retort in the mill," said Jim.

I demurred to this at first, but Jim insisted so strongly, urging the advisability of his project on scientific and sanitary grounds that I finally gave in, and we decided to dispose of all that was mortal of poor Larkin on the following day.

Next morning by ten o'clock Jim had the retort all ready. We lifted Larkin's remains on a long hand sled which we hauled to the mill and carried the body into the retort room, and after Jim had read a chapter

from a pocket Testament he had with him we folded the dead man's arms across his breast, silently raised his body and shoved it into the long cylindrical retort. Jim shut and firmly keyed the door and lighted the fire in the furnace beneath, and we returned to the office.

About two o'clock in the afternoon Jim came in and greeted me by saying: "Well, the job is done, but we must let the retort cool until to-morrow."

It was with mingled feelings that I afterwards accompanied Jim to the retort room. He soon had the cast iron door open and we peered inside. On the bottom of the retort was a large mass or cake of a grayish-white substance. I struck it with a small hammer and found it was a soft metal.

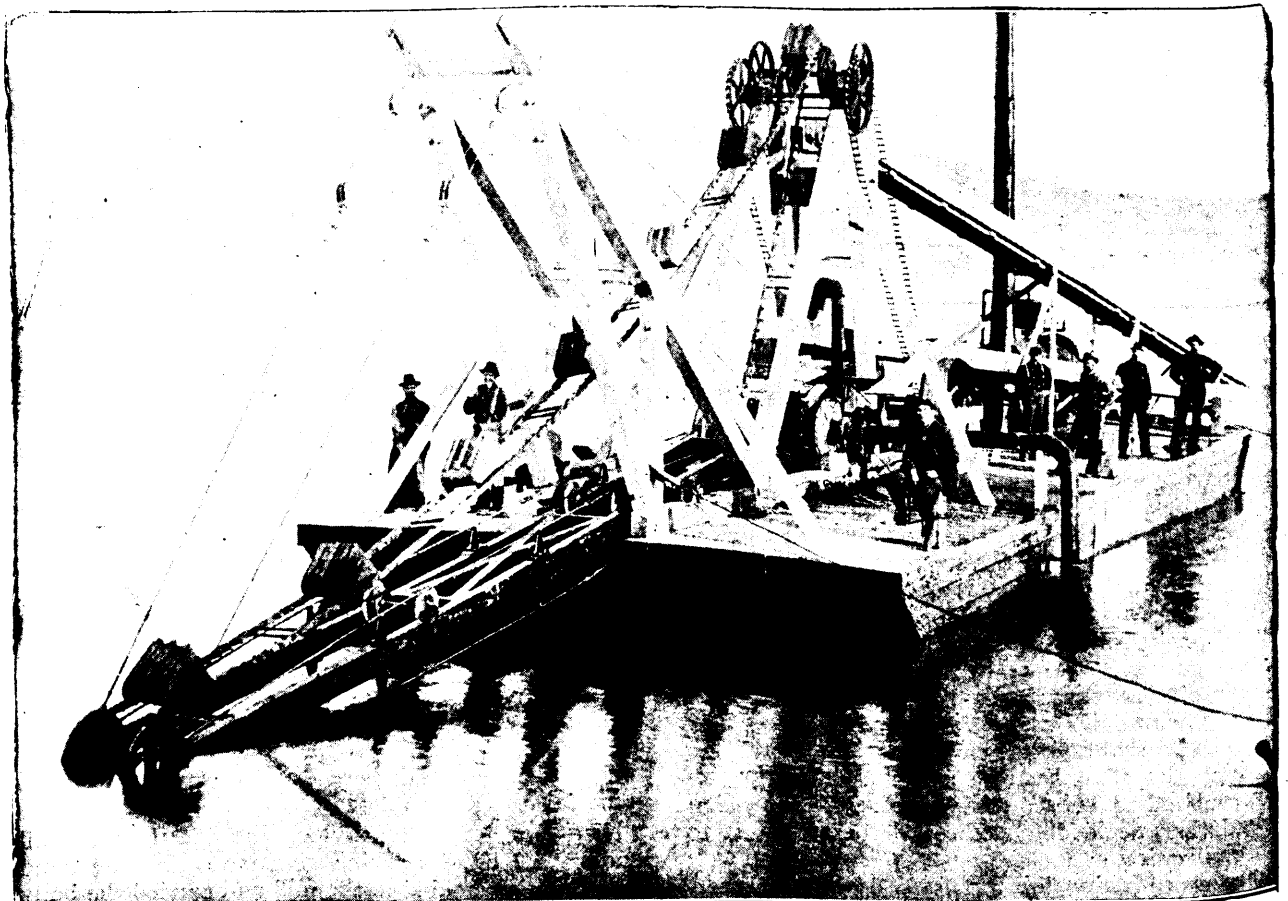
Jim had brought a beaker and a brush from the assay office. He carefully swept the dust out of the retort into the beaker and handed it to me, saying: "There is all that is left of our friend—about a pint and a half of ashes."

We carried the chunk of metal from the retort to the office, cut it up into small pieces; these we placed in a graphite crucible which in turn was subjected to a great heat in the bullion melting furnace and subsequently the molten mass was poured into a mould.

After cooling we ascertained we had 288 troy ounces of metal. I took a sample of the bar, assayed it and found we had 211 ounces of pure gold and 63 ounces of pure silver. At that time the "crime of '73" had not been perpetrated, hence silver was worth \$1.29 per ounce. So poor George Larkin's dead body proved to be literally worth its weight in gold, for the brick was valued at no less than \$4,441.82.

#### A NEW GOLD DREDGER.

THE two illustrations here given were engraved from photographs taken last month by Mr. C. H. Olson, showing his new gold dredger in a trial operation on Wenatchee Bar, near Wenatchee, Wn.—this spot having been selected as most convenient for conducting experiments. As is well known, dredging for gold has not heretofore been attended in British Columbia with marked success, but this may possibly be attributed, and Mr. Olson attributes it, to the fault of the gold saving machines in use. The centrifugal pump, or suction dredger, has, for instance, not proved very efficacious in saving gold in B. C. streams, and several apparently good reasons, based on scientific grounds are given to show why this class of machine is unsatisfactory. In a centrifugal force machine, a pipe is used which runs down under water to the body of matter to be dredged, and by a powerful suction process water, mud, gravel and rocks are drawn through the pipe and deposited above water. This works very well where there are few boulders and the formation is mostly mud, but in a river bed where cement, gravel, hardpan, frozen ground and quantities of good sized boulders are found, these machines do not perform satisfactory work. The dredger must be moved constantly as boulders just too large to be drawn through the pipes are continually blocking its mouth which, however, keeps it from taking up the gravel and mud. Then admitting that these dredgers can be made to do a little work in a boulder formation, they cannot be made to take up the gold, "which is the principal object for which they are generally put to work in a for-



DREDGE WITH PATENT ARM RAISED.

mation of this kind," owing to the difference of the specific gravity of water, dirt, gravel and gold. Water has a specific gravity of  $62\frac{1}{2}$  pounds per cubic foot, and will, of course, seek its own level in the pipe that is placed in it. This water must then be overcome before gravel and dirt, with a specific gravity of 93 pounds, can be raised, and gold with a specific gravity of 1,187 pounds being so much heavier than the other substances to be lifted, and exposing so much less surface than the other formations compared with their weight, will not be taken up by this suction force as the pipe will fill with the lighter substance and the heavy gold metal will be left. These machines will pick up a boulder as large as a foot in diameter but cannot take up a nugget of gold, no matter how large or small it may be.

On the other hand the bucket dredger has been worked most profitably in New Zealand, a country wherein dredging operations have been carried on somewhat extensively, and it is of course possible that this class of machine may be introduced with success into British Columbia. In fact we understand that the promotion of a company enterprise to operate these dredgers in Cariboo is already under way.

The special feature of the Olson machine is that it has a series of dredging buckets carried on a chain belt that is driven by a fixed sprocket wheel at the top, the lower part of the belt being taken over a swinging pulley beam so pivoted that the lower end of the chain may be raised or lowered to dredge at any depth desired to the length of the arm.

#### STOCK MARKET.

During the month of February a good business in mining stocks has been done, although the market was not quite so active as it was in January.

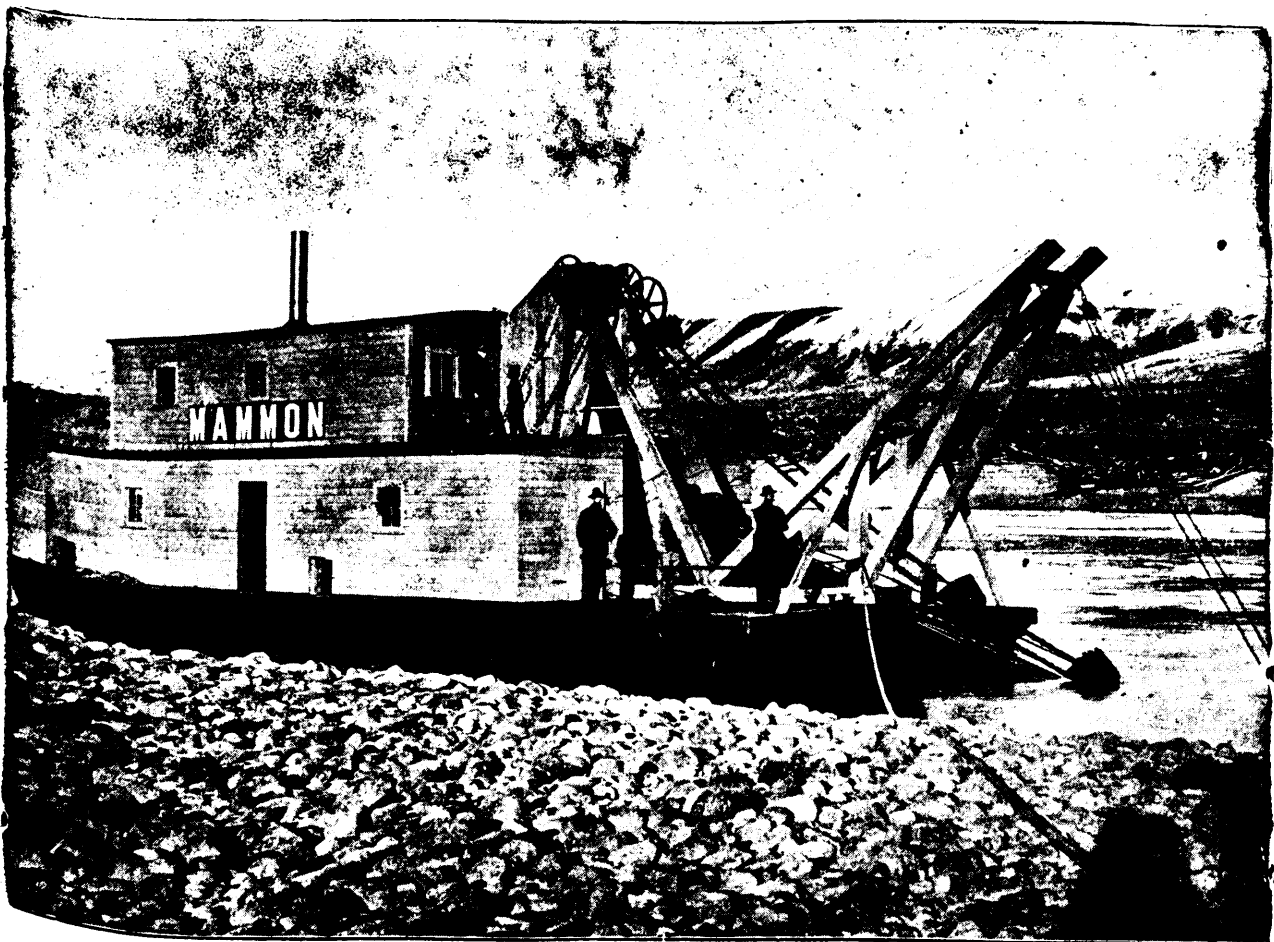
In silver stocks there has been a persistent demand for Noble Five shares, but in most cases brokers have been unable to fill the orders at the prices bid. There has also been a great demand for Dardanelles, and some large orders have been filled in the neighborhood of 13 to 14 cents per share, but most of the cheap parcels have been bought up. There has also been some enquiry for St. Keverue, which adjoins the famous Payne mine, the largest shipper in the Slocan. The Payne vein was recently discovered on St. Keverue ground, and will be commenced again in the spring and good results are looked forward to with great expectations.

In Rossland stocks there has been quite an enquiry for War Eagle shares, which are looked upon as one of the safest buys in the Rossland camp. War Eagle shares are hard to get in the West and the price has advanced from \$1.10 to \$1.15. Iron Mask has also been in demand and the price is advancing with the increased demand. The sale of 240,000 treasury shares of the Evening Star at  $2\frac{1}{2}$  cents has caused great dissatisfaction amongst the shareholders, as they consider the directors have sold these at a great sacrifice, and an effort is being made to upset the sale as Evening Star shares merit a much better price.

There has been quite an active demand for Eureka Consolidated shares and the price has advanced from 3 to  $4\frac{1}{2}$  cents.

A New York Syndicate purchased the majority of the stock of the Rossland Good Friday on the basis of \$150,000 for the property, and the British American Corporation has purchased the Columbia and Kootenay for \$275,000. These transactions help to restore confidence in Rossland mines and many enquiries are coming in from outside points for Rossland stocks, and several stocks which have been quite unsaleable for the last ten months are beginning to move again.

In the Lillooet district Golden Cache shares have advanced very rapidly from 40 cents to \$1 per share on excellent reports from the mine.



THE DREDGE IN OPERATION—A CASE OF "MAMMON SERVING MAN."

THE FEDERATED CANADIAN MINING INSTITUTE.

**M**R. B. T. A. Bell, Secretary of the Federated Canadian Mining Institute, sends us the programme of the proceedings of the second inter-provincial conference of mining engineers and mine managers, with the request that notice of the meeting, to which invitations to attend are extended to all interested in the Canadian industry of Mining, be published in the MINING RECORD. It may also be noted that special arrangements have been made with all the Canadian railway companies whereby those attending the meetings will be carried at the cost of a single-fare ticket, providing they obtain a certificate signed at Montreal by the secretary, which will permit their return free of charge. Following is the syllabus:

WEDNESDAY, 2ND MARCH, 1898.

Morning session at eleven o'clock for the presentation of reports and the transaction of business only.

Afternoon session at 3 o'clock.

1. Presidential Address—By Mr. George E. Drummond, Montreal.

2. A Summary of Mining Progress in British Columbia.—By Mr. W. A. Carlyle, M.E., Victoria, B.C.

3. Notes on Mineral Development in Nova Scotia.—By Dr. E. Gilpin, Jr., Inspector of Mines, Halifax, N.S.

4. A Summary of Mining Progress in Ontario in 1897.—By Mr. A. Blue, Director of Mines for Ontario.

5. Mining in Quebec, 1897.—By Mr. J. Obalski, M.E., Inspector of Mines, Quebec, Que.

6. Mining Law and its bearing on the Development of Mines and Mining Districts.—By Mr. Frank C. Loring, M.E., Rossland, B.C.

7. Further Notes on the Incorporation of Joint Stock Companies.—By Mr. Joseph Bawden, Kingston, Ont.

Evening session at 8 o'clock.

8. Experiences in the Yukon.—By Mr. Wm. Ogilvie, F.R.G.S., D.T.S., Ottawa, Ont.

9. Methods of Mine Accounting, with Special Reference to Cost Sheets.—By Mr. John E. Hardman, S.B., M.E., Montreal.

10. Cableways as applied to Open Pit Mining (illustrated by calcium light).—By Mr. Spencer Millar, C.E., New York.

11. The Moebins Process for Parting Gold and Silver as carried on in the Guggenheim Smelting Works.—By Mr. Percy Butler, Montreal.

12. The Possibilities for Smelting in British Columbia.—By Mr. R. A. Hedley, of Nelson, B.C.

13. The Mineralogy of the Carboniferous.—By Mr. Henry S. Poole, M.A., A.R.S.M., Stellarton, N.S.

THURSDAY, 3RD MARCH, 1898.

Morning session at eleven o'clock.

14. The Gold Bearing Reefs and Placers of Northern B.C.—By Mr. W. Hamilton Merritt, A.R.S.M., Toronto.

15. Some Modern Forms of Milling Machinery.—By Mr. F. T. Snyder, Keewatin, Ont.

16. Improvements in Gold Extraction at Deloro, Ont.—By Mr. A. J. G. Swinney, Deloro, Ont.

17. An Ideal Power Plant for Working Low Grade Ore.—By Mr. O. F. Andrews, M.E., Isaac's Harbour, N.S.

18. Notes on the Michipicoton Gold Field.—By Professor A. B. Wilmott, Toronto, Ont.

19. Odd Notes on Mining and Smelting.—By Mr. A. H. Holdich, Nelson, B.C.

20. Mining Machinery in the Slocan, B.C.—By Howard West, A.R.S.M., New Denver, B.C.

Afternoon session at three o'clock.

21.—Commercial Progress as Influenced by the Development of the Iron Industry.—By John Birkinbine, M.E., Philadelphia, Pa.

22. Notes on Blasting with Compressed Cartridges.—By Mr. Wm. Blakemore, M.E., MacLeod, N.W.T.

23. The Halsey Pneumatic Pump at Drummond Colliery.—By Mr. Ohas. Fergie, M.E., Westville, N.S.

24. The Chemistry of Foundry Practice.—By Mr. Ernest Sjostedt, M.E., Montreal.

25. The Albertite Deposits of New Brunswick.—By Mr. John Rutherford, M.E., Windsor, N.S.

26. On the Strange Singularity of Colour in some Forms of Asbestos.—By Mr. R. H. Jones, F.G.S., London, Eng.

27. Notes on some West Kootenay Ore Bodies.—By Mr. J. C. Gwillim, B.A.Sc., Slocan City, B.C.

28. Diamond Drill Exploration in the Sydney Coal Field.—By Hon. E. T. Moseley, Sydney, C.B.

29. Compressed Air and Mining.—By Mr. O. O. Hansen, M.E., Rat Portage, Ont.

Evening session at eight o'clock.

Annual dinner, Windsor Hotel. Tickets (exclusive of wine,) \$3. Members and their guests may obtain tickets at the meeting from the secretary or the dinner committee.

FRIDAY, 4TH MARCH, 1898.

30. Mining on the Coast of the Mainland. B.C.—By Mr. G. F. Moncton, F.G.S., Vancouver.

31. Concentrated Foods for Explorers and Prospectors.—By Mr. J. T. Donald, M.A., Montreal.

32. Notes on the Analysis of a Rare Mineral New to Canada.—By Dr. W. L. Goodwin, Kingston, Ont.

STUDENTS' PAPERS.

The following papers will be presented at the meeting of the Quebec Association on Tuesday evening, 1st March, in competition for the King Gold Medal and cash prizes.

The Moebins process for parting gold and silver as carried on in the Guggenheim Smelting Works, Perth, Amboy, N.J., will be presented on Wednesday evening by Mr. Percy Butler, Montreal.

Notes on the ventilation of a deep metal mine as affected by seasonal changes of temperature. By Mr. John E. Preston, McGill College.

Coal Cutting and Transportation, with special reference to Cape Breton Mines. By T. A. MacLean, McGill College, Montreal.

Amalgamation.—By Mr. M. B. Weekes, School of Practical Science, Toronto, Ont.

Chlorination.—By Mr. H. S. Carpenter, School of Practical Science, Toronto.

Cyanide Process.—By Mr. W. W. Stull, School of Practical Science, Toronto.

NOTICE OF MOTION.

To be submitted at the morning session, Wednesday, 2nd March.

Moved by the Secretary, seconded by Mr. Hardman: "That this meeting, having heard the report of the committee appointed by Council, do now adopt it and resolve that the Federation having served its purpose, be dissolved at the end of the present session in favour of a stronger and more consolidated organization."

Shipping Mines.

Following are the ore shipments from the mines adjacent to Rossland, from Jan. 1 to Feb. 19, 1898:

Mine.	Tons.
Le Roi .....	8,168
War Eagle .....	465
Centre Star .....	150
Poorman .....	163
Iron Mask .....	380
Cliff .....	60

Total .....

The ore shipments for the seven days from Feb. 12 to Feb. 19, inclusive, were as follows:

Le Roi .....	920
War Eagle .....	15
Iron Mask .....	80

Total .....

The shipments for the same period last year, aggregated 967 tons.

The total shipments from the camp since Jan. 1, 1897, aggregated 82,226 tons.

BULLION AND MATTE.

South Kootenay exports of ore from Jan. 20th to Feb. 19th, Approximate Value.

	Pounds.
Trail Smelter .....	1,320,280
Hall Mines Smelter, copper bullion .....	523,129

ORE.

	Tons.
Le Roi Mine, Rossland .....	4,560
Payne " Slocan .....	1,035
Reco " " .....	100
Rambler " " .....	90
Whitewater Mine, Slocan .....	732
Kootenay Ore Company, Kaslo .....	955
Last Chance Mine, Slocan .....	260
Queen Bess " " .....	149
Comstock " " .....	60
Slocan Star " " .....	310
Vancouver Group " " .....	80
Black Diamond Mine, Ainsworth .....	40
Iron Mask, Rossland .....	80
Other Rossland Shipments .....	80
Montezuma Mine, Slocan .....	16

Total to February 19th .....

Total for January .....

\$656,058  
\$1,197,489

**SAFETY ARRANGEMENT FOR THE TOP OF SINKING PITS.**

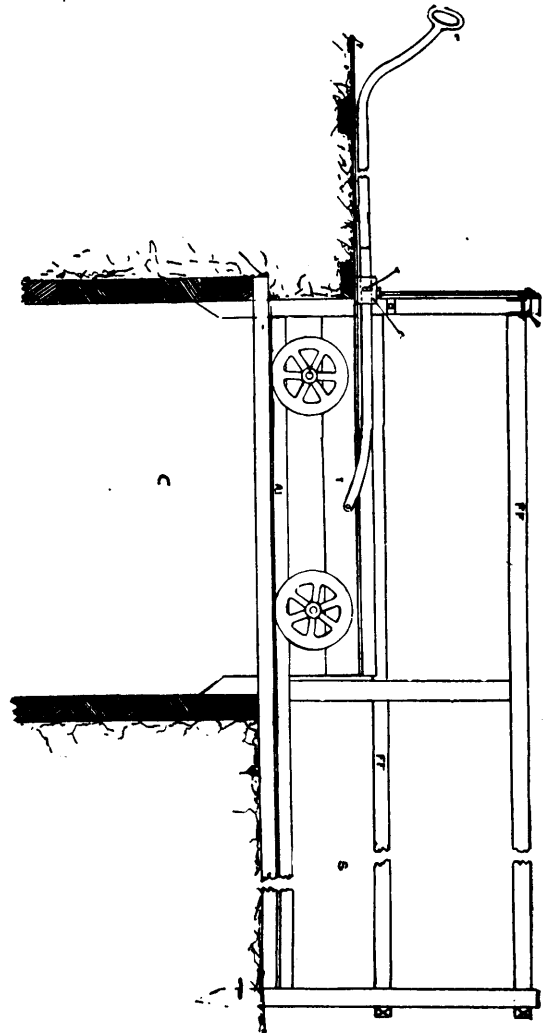
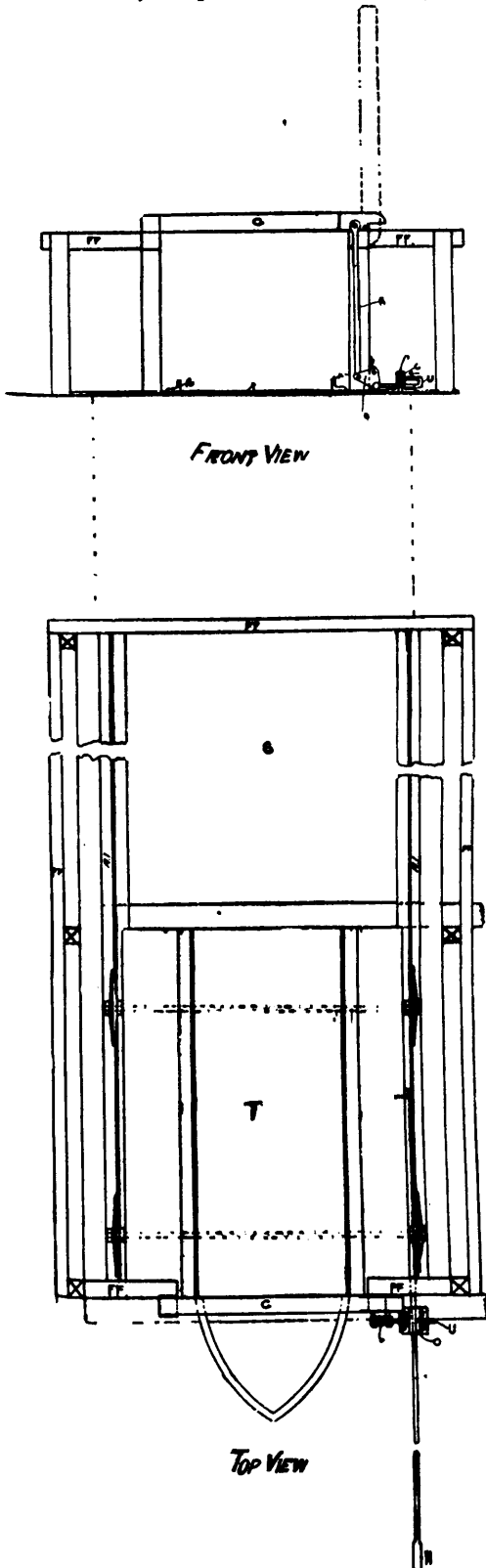
[BY J. D. KENDALL.]

**T**HE use of fencing and gates—the latter opening and closing automatically—at the top of hoisting shafts, is very general in all countries where human life is held in any respect and, doubtless, have been

to be hoped, the Inspector of Mines will, at once, insist upon the use of these safeguards in British Columbia.

The tops of sinking pits have, however, been everywhere, more or less, neglected and consequently have been, and still are, a source of danger. This has arisen mainly from the difficulty of arranging a simple and efficient contrivance, which shall be consistent with the temporary character of the pithead work of a sinking shaft. Such a device I, some years ago, designed, and thoroughly tested during the sinking of two deep shafts. It is an adaptation of the interlocking arrangement of points and signals employed on all English railways.

The accompanying drawing will help to explain the general arrangement. All compartments of the shaft



to be sunk, but one, are either covered over or boxed up for ventilation. One is left open to hoist through. This compartment has a fixed fence FF erected on three sides of it. On the fourth side, facing the dump, is a gate G. Across the top of the open compartment C angle irons AI (see side view) are laid so that a tram T—with four wheels—can be moved to and fro on them and placed either immediately over the shaft or quite clear of it, and standing in the space S. The moving of the tram in this way is effected by means of a handle H. The top of the tram T is level with the flat sheets F on the pit top. When the bucket is travelling through the shaft, the tram T stands in the space S and leaves the top of the compartment

the means of preventing many accidents like that which recently occurred at Le Roi mine so that, it is

perfectly clear. When the ascending bucket has arrived at a point a few feet above the surface, the tram T is drawn over the top of the shaft. The men below are then fully protected, it being quite impossible for anything to fall down the shaft. This is a matter of great importance, because when a man is removing a full bucket from the hoisting rope for the purpose of dumping its contents on to the surface, it is quite easy, (if the pit top be open) with an over full bucket or a careless man, for a piece of rock to fall down the shaft. In working the arrangement, here described, a special self-dumping tram was used which, on the arrival of a bucket at the surface and after the pit top had been closed, was run from the flatsheets F on to the tram T. The bucket was then dropped into the self-dumping tram, disengaged from the hoisting rope and run to the dump. At such time the gate G is open and stands in the position shown by dotted lines in the front view. When the self-dumping tram has returned from the dump, the bucket attached to the hoisting rope prior to descending, and the self-dumper withdrawn, the gate G is closed and the tram T pushed back from the pit top, leaving a clear course for the bucket. Immediately the tram T is moved out of the position in which it completely covers the pit top, even if only for an inch, it is impossible to open the gate G. Therefore during the time the bucket is running through the shaft, and the top of the latter is consequently open, there is a complete fence round the shaft, so that no one could, in the ordinary course of things, fall into it. The gate G can only be opened when the pit top is completely covered by the tram T. The device by which this order of operations is secured is very simple. A flat bar of iron I is attached, by one end, to the tram T, and at the other end is a handle H. This bar passes through a fixed guard O and is made sufficiently long to push back the tram T clear of the pit top. Attached to the gate G is a rod R which actuates a bell crank B. From the lowest angle of this crank (see front view) a rod U passes through the lower part of the guard G and under the bar I. It is then bent like the letter U so as to pass through the upper part of the guard O and through a hole in the bar I. So long as the free end of the bent back rod U comes in contact with the side of the flat bar I as the latter passes through the guard O the gate G cannot be lifted; but if a hole be made in the flat bar I, so as to allow the point of the bent rod to pass through it in the direction of the arrow, the gate G can be lifted. The position of this hole, therefore, determines the point at which the gate G will open; and the hole is so placed, in the flat bar I, that it comes in front of the free end of the bent rod U when the tram T completely closes the pit top. The gate G can open then (when there is no possibility of any one falling down) but at no other time.

#### TERMINAL CITY TOPICS.

**G**REAT efforts continue to be made to raise by local stock subscriptions a considerable amount that is needed to continue productive work at the Golden Cache mine by the aid of the best modern appliances. Success will probably crown these efforts, which meet with much sympathy in and about Vancouver, where many local men are interested in the Golden Cache stock. These investors, whilst recognizing the fact of the big amount invested in the enterprise by Mr. Oldroyd, M.P., are naturally

anxious to share with that gentleman and his associates the control of the undertaking and do not wish to see the Golden Cache pass all but completely into outside hands.

Labour men in Vancouver are well pleased to learn that the Act to prevent the underground employment of Mongolians in metalliferous mines has been found duly enforceable under penalty. They meanwhile strongly urge the amendment of the other Act, ostensibly preventing Mongol employment in colliery workings, but in reality found incapable of enforcement, by reason of the omission of penalty clauses.

It is likely that in the very early future—provided only that reasonable facilities be afforded by the province—there will be a big effort made to develop precious metal mining on the principal island of the Queen Charlotte group. A wealthy body of British and South African capitalists is interested in such proposals. They have not yet, however committed themselves beyond making preliminary enquiries, but big money can be had for the necessary work of exploration and prospecting, if the promoters of the project find available what they deem to be reasonable facilities.

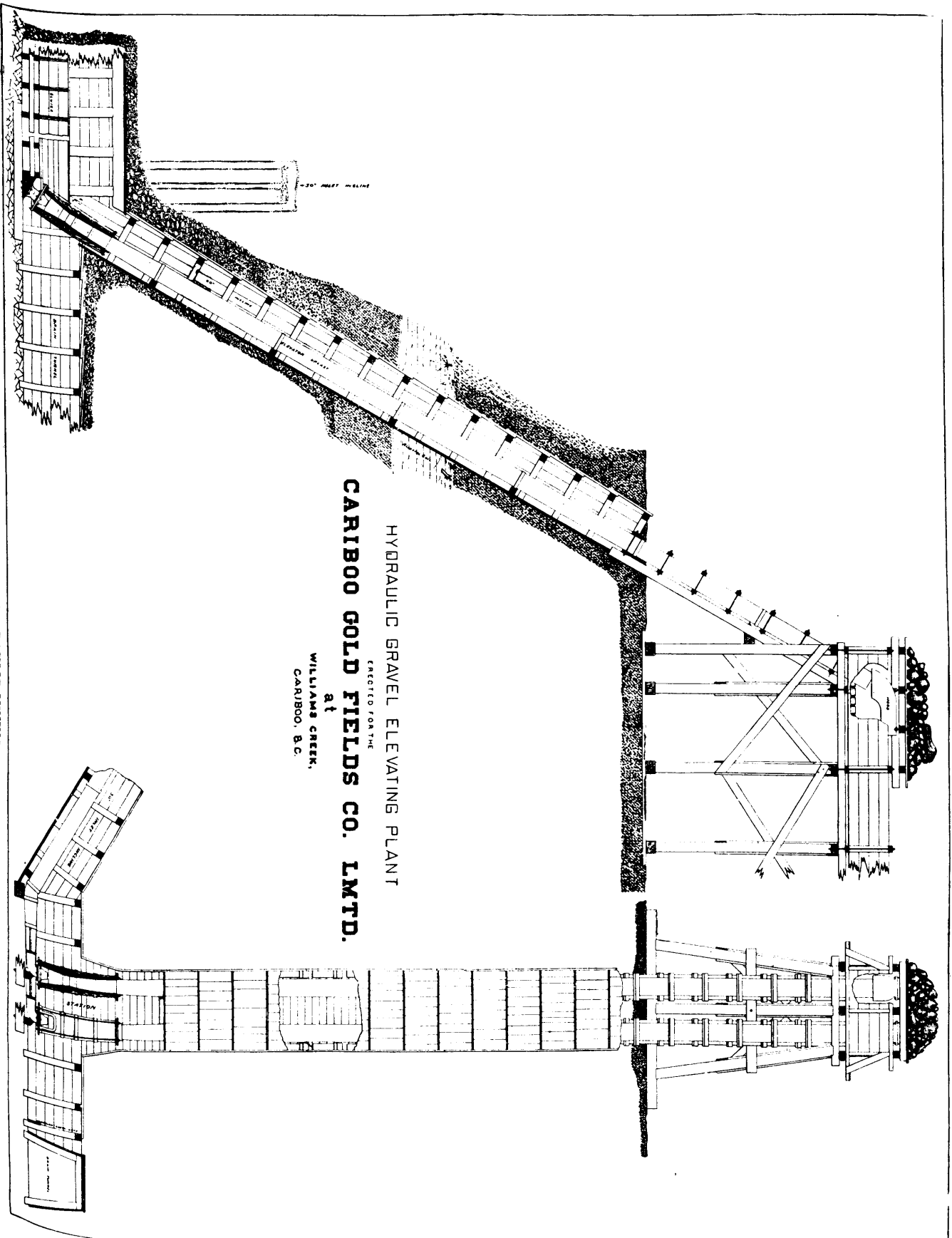
Two well known Vancouver men are understood to be largely interested in the intended transfer to the Rothschilds of a valuable lease of hydraulic gold gravels on Hunker Creek in the Yukon. One of them is Dr. Carroll, the other Mr. E. E. Rand, and the latter gentleman is understood to be now in England making the final arrangements in the matter. It is generally understood that the profit of the transferers will amount to a very large sum.

Mr. Pellew Harvey, the well known Vancouver assayer, finds the demand for his services increasing so rapidly that in order to meet the case expeditiously and well he has installed an electric motor sampling plant, which will enable the making of exceptionally accurate tests of ore parcels from one pound to ten tons in weight.

Recent advices here received from an exceptionally well informed English stockholder, whose mine share operations are very large, state that speaking generally there is little demand for new mine issues. The British America Corporation went all well as an exception, but there are, he states, only some half dozen British Columbia companies whose stocks are regularly quoted on the English exchanges and for those the demand is intermittent and by no means large. Klondyke ventures are in general distrusted and American and South African mines are for the time being discredited and months must elapse ere there will be any great revival of mining business and speculations in England.

A shrewd observer writing from Skagway, notes several local features which go far to prove that even the Americans themselves have little or no faith in the permanency of the town as a port of entry for the Yukon. They evidently expect successful competition from such places as Fort Wrangel, Glenora and a little later in the year Port Simpson. Signs of this are the following: First, little demand for Skagway real estate which rents low; secondly, and very significant for a town full of a miscellaneous mining population, comparatively little drinking at the saloon bars, though there is much gambling. A very large proportion of the people of Skagway consists in fact of "dead beats" and toughs.

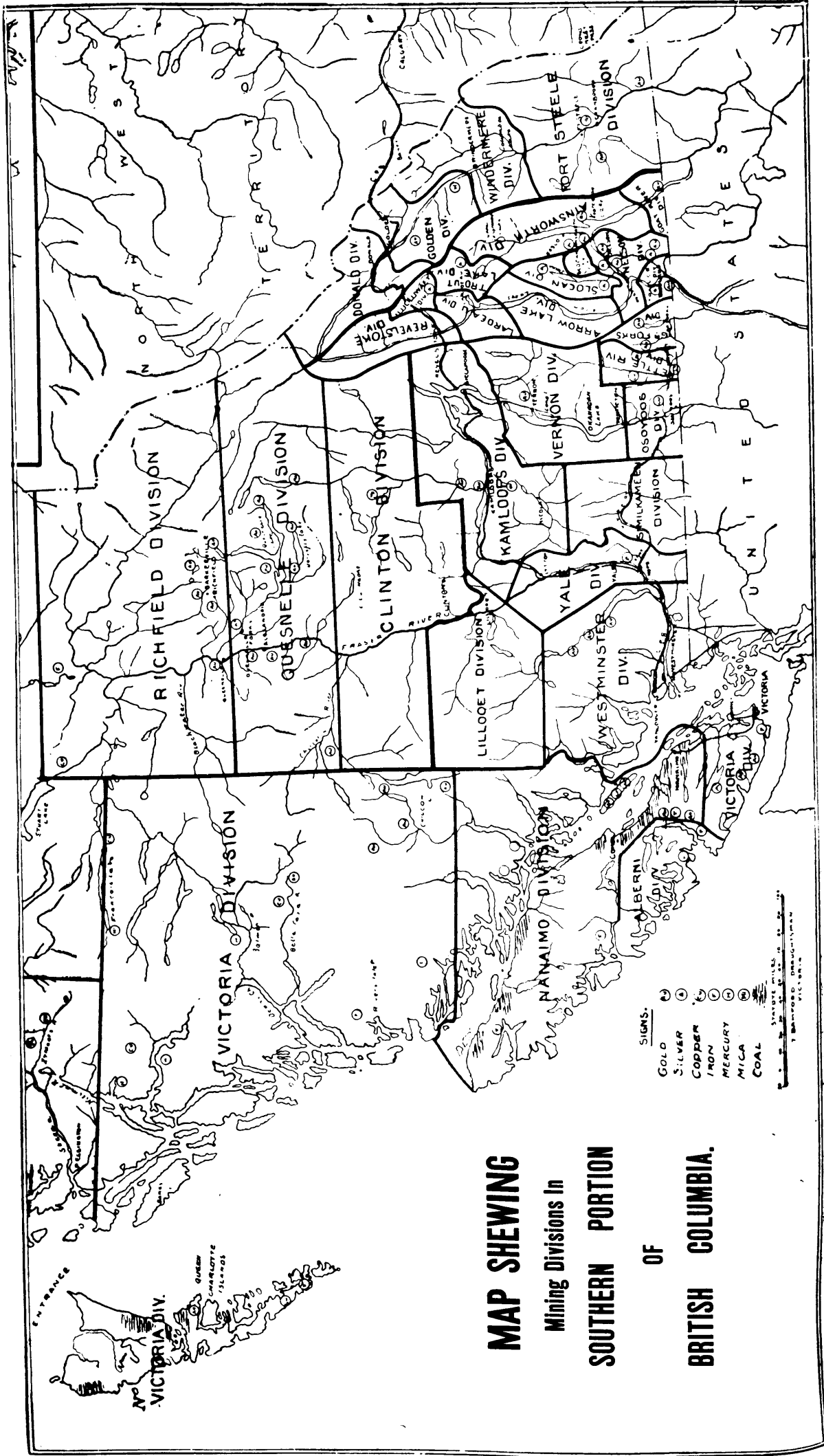




HYDRAULIC GRAVEL ELEVATING PLANT  
FACTORY FOR THE  
**CARIBOO GOLD FIELDS CO. LMTD.**

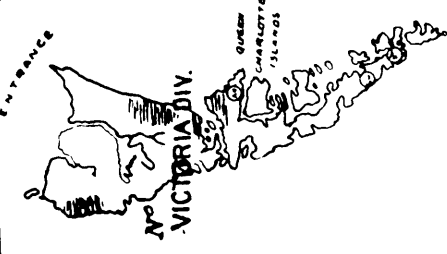
at  
 WILLIAMS CREEK,  
 CARIBOO, B. C.

SEE ARTICLE ON HYDRAULIC MINING.



**MAP SHEWING**  
 Mining Divisions In  
**SOUTHERN PORTION**  
 OF  
**BRITISH COLUMBIA.**

- SIGNS.
- GOLD
  - SILVER
  - COPPER
  - IRON
  - MERCURY
  - MICA
  - COAL



In the Fairview camp Tin Horn shares have fallen from \$1 to about 36 cents owing to the very unsatisfactory results of the mill run, but the management claim that most of the ore put through was country rock and they look for better results next time.

In the coast mines several sales have taken place of Victoria-Texada, Consolidated Alberni, Channe and Van Anda. The Consolidated Alberni has been sold to an English company for \$150,000.

Fern shares in the Nelson district have taken a rapid advance from 40 cents to almost 80 cents owing to excellent reports from the mine.

Several enquiries are coming in for Klondyke properties and several claims are reported to have been sold at good prices.

The wonderful increase in the exports of ore from the Kootenay district of British Columbia is attracting the attention of investors from all parts of the world, and it is very evident that the Province of British Columbia is about to experience a wave of unprecedented prosperity.

## CORRESPONDENCE.

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

### THE CONDITION OF MINE WORKERS AT ROSSLAND.

**TO THE EDITOR:**—In sending you a few facts touching some of the conditions under which our underground toilers labour, I do so with the hope that you will give this matter due publicity, and that through the columns of your valuable Mining Journal these grievances may thus be brought to the attention of the proper authorities. I am sorry to say that none of our important local officials care to interfere, so I have to appeal to you. Quite recently the newly appointed inspector of metalliferous mines paid official visits to our working mines. His report so far as known was very favourable all round. But in the face of that I beg to submit the following. And here I may say that I am not a practical quartz miner, nor an expert nor do I covet the position of mine inspectorship, but I have worked in a Rossland mine, and that is sufficient excuse.

In the first place I wish to know if there are any regulations governing the working of quartz mines in B.C.? If not, why not? Is it known that the miners (and they are white men too) of the Le Roi (and other mines) have to climb 675 feet from the workings to the surface on ladders, as the management forbids them the use of the ore car for the purpose, and there is neither cage nor elevator. When an influential visitor has secured the kind permission to go below he does so in the ore car, and he leaves no doubt with the belief that the unfortunate miners make use of the aerial conveyance. I think it should be compulsory that an elevator be run after a depth of 250 or 300 feet has been reached in a mine, or at least the men who do the blasting should be brought up in the ore car. This brings up a matter worth mentioning, and from which some idea be gathered of the loose way things are run in some Rossland mines. On Wednesday evening February 9th a miner named Stonehouse who was employed in the stoop at the 600 foot level in the Le Roi was the cause of the stoppage of work at the mine for a whole hour. It happened in this way: His partner having helped him load the holes previous to blasting had gone on top, leaving Stonehouse to light the fuse. After waiting till he thought the time had arrived to shoot he did so and then climbed down the stoop to the level, when to his horror the blasts set in the other levels and stoops above him commenced going off, the concussion of which blew out his candle. With a dash he made for the straight ladder up the main shaft arriving quickly at the surface uninjured. Coming up this ladder, like making use of the ore car, is contrary to the few rules in force in the mine. Once on top, Stonehouse reported his number to the timekeeper, who keeps tally of all men coming up, and went home. This man's partner, however, did not notice him on top and seeing a coat like Stonehouse's he gave an alarm that Stonehouse must be below, which at that time would have been fatal. The excitement that arose caused the timekeeper to doubt his book entry; so much so that it is thought he rubbed out the tally number. As soon as possible a search party went below and at the powder station on the 500 foot level found the missing man's dinner can, which to them confirmed the idea that he

must be in the mine; and not until another party went to his home and found Stonehouse in bed, did their fears vanish. The poor fellow, no doubt, had rather a hard and rapid climb for his life, and this must have shaken his nerves. To help matters out and to "get even" with some one, poor Stonehouse and his partner were discharged. Now what excuse is possible for allowing men to endanger their lives (this is the third time within a fortnight that men have been caught as in the case described) when a signal by which all the men could fire their holes simultaneously, or nearly so, could be adopted? And by providing a cage or permitting the use of the ore car the danger would be reduced to a minimum. I understand, if not at the present time, only recently quite a large store of powder was kept in the mine. What would be the result if that powder exploded when the men were below, with only two vertical shafts for outlets, and they are within 80 feet of each other?

I am informed that a bill will be introduced during this session of the Provincial Legislature dealing with the question of "the seven days a week" of slavery in mines, and also to compel mine owners to withdraw the thin edge of the "truck system" wedge introduced here whereby employees are obliged to board at the Company boarding houses. This system affords no small profits to employers, the men being charged from \$6.50 to \$7.00 per week, and a further \$1.00 for hospital. Taking into consideration the quantity and quality of the food provided these charges are exorbitant, in fact one Rossland restaurant keeper has said he would give no less than \$900 a month to secure the monopoly of the trade. The Miners' Union and the Trades and Labour Council here are trying in a quiet way to remedy existing abuses, a few of which I have specified, but it remains for the government of the country to deal with the matter intelligently and to take decided action to insure the protection of the working miner.

Rossland, B.C.

A DISGUSTED ONLOOKER.

### A VERY SENSIBLE SUGGESTION.

**TO THE EDITOR:**—In view of the fact that there is likely to be a large influx of prospectors to the province in the spring, I would suggest that some step should be taken by the Legislature to facilitate prospecting operations here in certain necessary directions. For example, provision should be made whereby a prospector might be enabled to tell at a glance when he came across "old stakes" whether they are alive and therefore legally hold ground, or otherwise. In most cases a prospector does not put himself to the trouble to ascertain whether or not a location upon which stakes are standing is legally held (even if the writing on the posts giving the dates of staking is legible, which is seldom the case) and he moves at once to fresh ground, unless, indeed, he has made some remarkably good find on the claim thus staked, when he will probably make further enquiries as to its ownership. But in seventy instances out of a hundred these claims with the "old stakes" have been abandoned, perhaps they were never recorded, for many men stake ground, send a sample of ore therefrom to the assayer, and, the returns not coming up to expectations, the claim is left unrecorded with the stakes standing. Numbers of claims are also located by prospectors who have been grub-staked and have therefore put in time staking ground promiscuously, and of course on the majority of such claims assessment work will never be done. Then again instances are not uncommon when men, without first obtaining a free miner's certificate, have found and staked valuable ledges, hence gaining time to proceed to the nearest recorder's office to obtain the necessary license and return to restake the property, when possibly in the meantime *bona fide* prospectors visited the locality and were thus "done out" of the claim or claims.

Moreover it should also be remembered that it takes a lot of work to thoroughly prospect a full claim, and it may contain rich lodes that were never seen or dreamed of by the original locator, who very likely never found any ore in place at all, which will assuredly never be systematically looked for by anyone else as long as he is confronted by a lot of stakes that may legally hold the ground for all that he knows or can find out to the contrary; for, be it observed, that the writing on these posts is very seldom legible, sometimes intentionally never was so, at others has been obliterated by exposure or by the gum which exudes from the wood—more especially is this the case where the stump of a tree has been used as a stake.

I would submit as an easy and effectual remedy and one that has met with approval generally from prospectors, that all recorders should be supplied with metal plates (say sheets of zinc four inches by eight inches) and that when an applica-

tion is made to them for record, it shall be the duty of the official to transcribe on two of those plates all the particulars relating to the record in question with acid or some other indelible composition. These plates may then be given to the locator who shall be allowed the same number of days to return and affix them to his No. I. and No. II. posts (with wire nails) as he was allowed by law to perfect his record in the first instance after staking, and that the same rule should apply to assessment work and that all posts on which these plates are not affixed after a certain number of days have elapsed from the date of the original staking, as shown by the writing on the posts, or in regard to assessment work within a year after the first plates had been affixed, would be null and void and the ground open to anyone who wished to locate land thereon.

It is also held by some that in addition to the words "No. II. post, etc., etc., mineral claim," at present inscribed on the No. II. posts, all of the particulars of the claim and the direction of the No. I. and the discovery posts should be written on it.

Douglas, B.C.

L. A. AGASSIZ.

[We fancy in West Australia there is a law on somewhat similar lines. But there a prospector is obliged to carry with him a number of tin plates and a pot of white paint. The plates are affixed to the posts, marking the boundary of the claim staked off, and painted on the plates is a description of the claim, the name of the locator and the date of location.—Ed.]

#### BIMETALISM AND THE MINER.

TO THE EDITOR:—To the majority of the readers of mining and other newspapers in Western America the volume of argument for and against bimetalism must appear so confusing and contradictory as to be exceedingly difficult of mental digestion. They cannot, however, fail to be struck by the prominence given to the purely commercial aspect of the question in the controversy as distinct from the point of view of the miner's interest. Indeed as far as the gold miner is concerned he seems hardly conscious of the great battle going on around him in the issue of which he has so much at stake.

Everyone, thanks to the deluge of articles written and speeches made on the subject, knows that the public gives to the miner in exchange for his ounce of gold so much provisions, so much labour and so much machinery. Year by year the same public have been obliged to increase the amount of these payments in kind to obtain the gold and the ounce of gold buys more to-day than ever it did before.

This fact constitutes in itself a grievance to certain bimetalists who argue that the increased purchasing power of gold has greatly benefitted the holders of large reserves of that metal or of bonds payable in it. While this is undoubtedly true, the bimetalists' argument, that no class in particular is responsible and therefore blameable for the rise in the value of gold, is only calculated to deceive those not connected with the gold mining industry. The miner knows that the poor man's diggings (let the Klondyke be "never so rich") will not again produce the greater part of the world's annual supply of gold. He is obliged to go into the fast places of the earth to find the precious metal. He cannot afford to surrender his gleanings so cheaply as he once did. He has been forced to cut down wages; to cheapen supplies; to invent the cyanide process in order to make ends meet in his business. Many experienced miners say, with what truth it is of course impossible to judge, that there never was a camp where gold did not cost \$25.00 an ounce to obtain. There certainly never was an industry where the investor was content with so small a margin of profit as he is in mining for gold. Whether or no there be cause for lament in the fact that some people have gold bonds instead of ranches, it must be borne in that in seeking to depress the value of the yellow metal at present in circulation a blow is being le elled at the metal still in the ground. It would be a bold man who would compare the earth's potential wealth with her minted currency. At the present rate of production the wealth underground is beyond question a more important factor in future numismatics than the coin now in circulation. There will possibly never come a time when the public, grown generous, will give a liberal profit to the miner for his toil. His love of speculation, the prospect of a bonanza some day and meanwhile small dividends or no dividends at all are the history of his efforts to supply commerce with her currency.

Soda Creek, B.C.

MONS MEG.

[We publish our correspondent's letter on acco of the novelty of his views, but we neither admit his premises nor

like his logic in many important particulars. The purchasing power of gold is greater to-day than it was twenty years ago because competition has reduced the cost of manufactured articles and brought down transportation rates. The world's production of gold is annually increasing in amount, and improved mechanical appliances have made possible the profitable treatment, during comparatively recent times, of such low-grade bearing quartz as formerly would have been commercially worthless. Witness the case of the Black Hills' "Homestake" and of the Alaska "Treadwell." Our correspondent in support of his argument that there is a very small margin of profit in gold mining adduces the fact that the cost of producing one ounce of gold is \$25.00. He can go further than that and put the estimate at \$60, or at a relation of 8 to 1. But what does this prove? In ordinary mercantile business for every dollar earned fifteen are spent. Therefore dealers in merchandise are "content with a very small margin of profit." ? In the former case the chances of success are 33½ per cent and in the latter 3-5 per cent.—Ed.]

#### THE ENGLISH INVESTOR AND SILVER MINES.

TO THE EDITOR:—You have no doubt remarked, sir, that with one or two notable exceptions English companies promoted, during the last few years, to acquire mine properties in British Columbia, have confined their investments entirely to Rossland and other strictly gold producing camps. This has always struck me as curious. Little had been done in the way of quartz mining previous to the advent of our American cousins into West Kootenay about six years ago. They recognized the potentialities of our immense silver lead deposits, and lost no time in acquiring and opening them up. Americans, unlike the English, are not prejudiced in favour of any particular metal. They will not pass a silver lead property, carrying from 75 to 100 ounces of silver and 40 to 60 per cent. lead, to the ton with contempt, and take a gold property in preference, which only gives a quarter of the tonnage value. They have taken advantage of the fact that with a moiety of the labour and expense, they can produce a ton of silver lead ore worth four tons of average low-grade gold bearing ore, and in consequence are reaping the large rewards to which they are justly entitled. Our silver lodes as a general rule, run vertically over the mountains, and they are being operated by tunnels without the aid of machinery, and in some a depth has already been attained of over 700 feet.

English investors should be shown that by far the richest camps in the province to-day are in the Slocan, and that twenty mines are worked now at a profit to one in Rossland.

GALENA.

#### ANSWERS TO CORRESPONDENTS.

J. H. D., (Virden, Man.) We believe we cannot do better than quote the advice given recently by a contemporary, the New Denver *Ledge*, to a "tenderfoot" (excuse the term; it is kindly meant) who wrote, asking what outfit is required in a journey to Klondike. The following articles were suggested: "Plenty of money and carbon. A return ticket. An iron heart. A set of steel nerves. A mosquito antidote. A balloon if possible. A copper lined stomach. A volume of the *Ledge*. The above, with a little grub, should enable a man to be comfortable until the fever is past. Seriously, though, we would certainly advise you to stay comfortably at home if, as you say, you are doing well."

A & Co. (Denver, Colo.)—H. B. Wilson, Ashcroft; Frank Dick, Brandon, B.C.; W. F. McCulloch, Kamloops; W. J. Brown, A. L. McKillop, Nelson; MacFarlane, MacKenzie & Roberts, R. Marsh, Ordway Clark, Robins & Levy, Rossland; Chas. M. Wilson, Sandon; Winstead, Walt, Ruby, White-water; Dubois & Munro, John McVicar, Ymir.

R. A. H. (Sheffield, Eng.) Latest accounts have not been very satisfactory. This, we fancy, is owing a good deal to bad management. The mine is itself promising enough. A shipment of 100 tons was recently made to Swansea.

M. W. H. (Brantford, Ont.) You had better write to Dr. Carroll, the former Secretary, at Vancouver, for an explanation. The sale was entirely a *bona fide* transaction, and you need not fear that your money is lost.

J. H. O. (Ashcroft.) Probably you allude to the British Canadian Gold Fields Exploration, Development & Investment Co., Ltd. This Company owns a number of properties near Ainsworth.

J. S. A. (Shawnigan). Dana's "Handbook on Mineralogy," and Schales' "Outlines of Geology," published by the Scientific Publishing Co. of New York, price \$1.50 each, are perhaps the best for your purpose.

A. H. C. (Concord, N. H.) We propose to publish an index this year, but hitherto have not done so.

V.O.W.S. (New York)—We shall be very happy to do as you suggest.

PUBLICATIONS.

THE Pittsburg Reduction Company, of Pittsburg, Pa., have published a very neat little volume of nearly 300 pages devoted chiefly to the manufacture and properties of aluminum, although the book also contains much other useful matter such as comparative tables of weights and measures; metric weights and English equivalents; metric conversion tables and information of a like character. The price is unfortunately not stated.

"Silver mining in the Reco" is the title of a handsomely illustrated pamphlet containing the first report issued by the Reco Mining and Milling Company and compiled by the president, Mr. J. M. Harris, of Sandon.

The "Reco" group must undoubtedly be included as among the profitably worked silver-lead mines of the Slocan, and, as much of the information to be found in the report is new, we take the liberty of quoting as follows:

LOCATION.

The property is located on Reco Mountain, in the heart of the celebrated silver-lead mineral belt of British Columbia, described as the "Slocan." It is at present reached from the town of Sandon by a graded switch-back trail, four miles in length, though in reality the distance to the mine is less than 10,000 feet, and will be spanned by an aerial tramway during the approaching season.

EQUIPMENT.

The mine is equipped with sleeping and dining accommodations for 200 miners. The original boarding house, erected at a cost of \$2,000, was soon found to be inadequate and another, which is at present the most complete and commodious in the Slocan, was built at an additional outlay of \$5,000.

The six ore houses on the property represent an investment of \$3,000, while a similar amount of money was expended on the trails.

In the seven tunnels twelve pound rails are used for track.

VEINS.

What are described as the "leads" in the Slocan belt are in most instances well defined fissures that have in their mineralized origin cut the slate formation at right angles to depths yet unknown and unexplored. It is characteristic of them that great width is a guarantee that large chutes of concentrating ore exist; while conversely in tight and narrow veins, where the fissure is unmistakable, the cavity usually contains mineral of an extraordinary high grade.

Two of the three leads uncovered on the property up to date may be classified as of the latter description. Of the third, known as the Reco-Goodenough lead, or No. 3, Wm. A. Carlyle, provincial mineralogist, in his official report for 1896, says:

"From the small, or Reco-Goodenough vein, lying several hundred feet to the east, has come the richest silver bearing galena yet found in the Kootenay; the silver evidently occurring as argentite, although much ruby silver is found in some of the solid galena. \* \* \* The ore so lies that generally the ground can be mined out along it (the vein), leaving the ore to be afterwards broken down clean. \* \* \* The ore while mined from a small vein is very profitable."

The Reco-Goodenough lead crosses the Reco and Texas claims. What is known as the "Big Lead" or "Ruecau No. 2" parallels No. 3, about 500 feet to the west, in a north-west and southwest course. It is traceable through the "Texas," "Ephraim," "Ruecau," "Olifton" and adjoining claims. It is a large fissure, measuring in places forty feet between walls, and having an average width in the underground and surface exposures of twelve feet. It carries extensive bodies of galena, averaging 175 ounces of silver and 75 per cent. lead to the ton. The great bulk of the ore in the "Big Lead" can be prepared for smelting to the best advantage by concentration, and for that reason its product has been reserved until the mill to be erected by the company for that purpose is in operation. The several thousand tons on the dump will be concentrated five into one, averaging when thus reduced 175 ounces silver and 75 per cent. lead to the ton.

The Texas lead, paralleling the Big Lead 700 feet to the west, and having the same strike and dip as No. 2 and No. 3 leads, traverses the Clifton, New Denver, Ephraim and Texas claims. Several tons of ore on the Texas dump will average 400 ounces silver and 60 per cent. lead. Only assessment work has been done on this lead, because of the difficulties and hardships of development, until such time as the tramway and concentrator plans of the company have been carried out.

SHIPMENT AND PRODUCTION.

The subjoined table showing the production of the mine is compiled from Smelter statements. The total weight of shipments is given annually in pounds, though it should be explained that ore has been taken out only during three winter months each year, owing to the lesser cost of transporting over snow trails. For each year the average yield of ounces of silver and per cent lead per ton is shown, as well as the average value of silver per ounce and the price for lead. From the total of values all incidental expense for shrinkage, transportation charges, treatment and duty has been deducted.

YEAR.	Shipm'ts Net Weight.	Mill Assay.		Price.		*Net Values.
		Silver Ozs.	Lead per Cent.	Silver	Lead	
1894	146,436	175.9	75.7	62.62	3.15	\$ 7,100.91
1895	636,313	251.2	43.4	63.40	3.03	45,448.53
1896	856,557	307.7	36.0	67.53	2.96	79,081.85
+1897	1,178,749	308.9	42.7	64.33	2.98	108,402.28
Total,	2,818,055	.....	.....	.....	.....	\$239,970.37

\*Receipts from the smelters after deductions of 5 per cent. silver, 10 per cent. lead,—for smelting loss—duty on lead, and freight and cost of treatment.

†Including only the first three months of the year.

Pursuing an analysis of the returns it is found that the mine has shipped in the four years of its development 1,690 tons of ore, from which have been extracted as a net yield for the company 16.8 tons of silver and 598½ tons of lead. The ounces of silver were 404,035 and the pounds of lead 1,196,987. The entire product of the two classes of ore treated has averaged 239 ounces silver and 42.47 per cent. lead to the ton.

The aggregate of deductions for freight and treatment (not inclusive of the cost of packing from the mine to the railroad warehouses) \$42,200, for duty \$9,884.20; for smelter losses of lead \$3,620.85 and silver \$13,131.02 brings the gross value up to \$308,806.44 or \$182.70 per ton. The net value, or profit to the company for the ore, at the point of shipment, averaged \$141,993 per ton—a showing that would be exceptional even in the case of a first-class gold mine. Put in still another form the first and second classes of the Reco ore average together in value at point of shipment 10.95 cents per pound gross, and 8.50 cents per pound net.

DIVIDENDS.

The following table shows the date and amount of Reco dividends paid to May 1, 1897:

1895 .....	\$ 7,500
1896 .....	30,000
1897, February 15th .....	100,000
1897, April 30th .....	50,000

Since this report has been tabulated another dividend of \$100,000 was declared by the management from the proceeds of ore taken out; and larger bodies of ore have been opened up, and regular dividends are now assured for several years from the ore already in sight.

THE ORES.

While lead is the predominating metal in the Reco, as it is in the Slocan mines generally, the ores show extraordinarily high averages of silver value in all the veins.

From No. 2 vein smelter shipments I. (first-class), showing the average of \$104.20 net profit for all the tonnage treated, are of coarse and medium grain galena; and II. (second-class) are vari-coloured carbonates, averaging in net profit \$61.05 per ton. One odd variety of ore found in No. 1 tunnel runs \$400 to the ton. It is a peculiar blend of grey copper and galena that resembles hematite of iron. Stibnite, which ignites and largely evaporates in its own flames, is also disclosed in quantities in this vein. It runs 160 ounces of silver

and as high as 50 per cent. lead to the ton. Immense ore bodies adaptable to concentration are characteristic of this vein.

The first and second-class ores of the Reco-Goodenough vein (No. 3) are classified respectively, X and XX. The average net proceeds of the total shipments of X ore are \$395.80 per ton. It is a fine grain galena carrying ruby and antimonial silver, grey copper and sulphurets. The average proceeds netted from the XX shipments are \$160.07 per ton. This ore is soft lead carbonates. Assays from it have yielded as high as 1,100 ounces of silver to the ton, and from the former 13,030 ounces, and is acknowledged to be the richest galena in the world.

The classification of the ores is determined by the lead percentage rather than the silver values; the X class running in lead, and the XX comparatively low. In fact the silver values of the XX are often run equal, and at times, in excess, of those of the X shipments. For example, the highest X smelter return is 730 ounces silver and 67 per cent. lead; the lowest X returns, 292 ounces silver and 72.6 per cent. lead while XX shipments have yielded, in one instance, 596 ounces of silver and 54.8 per cent. lead.

#### INDUSTRIAL NOTES.

Messrs. Felten & Guilleaume, one of the largest wire and rope manufacturers on the Continent, represented in Canada by Messrs. Jack & Robertson, of Montreal, have recently turned out a length of wire towing rope, with a circumference of five and one-half inches, in one length of 100,000 feet, weighing 210 tons.

The Weber Gas & Gasoline Engine Co. of Kansas City, U.S.A., recently received a very flattering testimonial from a gentleman residing at Uman, Yucatan, to whom one of the firm's gasoline engines was supplied. This engine was shipped and satisfactorily set up from printed instructions, several thousand miles from the factory. The letter reads as follows:

"I am pleased to inform you that since the 4th of October last, a Weber Gasoline Engine is running in my hemp estate to my entire satisfaction. This engine is 18 H.P., and runs satisfactorily a Lopez and Lavadores hemp cleaning machine, consuming, during the ten hours it runs per day, twenty

gallons of solarine, which, at forty-five cents per gallon, amounts to \$9.00."

James Leffel & Co., of Springfield, Ohio, are building a 7,000 H.P. plant of six of our Niagara type of water wheels for the Montana Power Company, under sixty feet head pressure, twenty-one mile transmission, for mining, lighting, electric railway, and general power purposes; 1,200 H.P. The first two of these wheels are shipped; the remaining will follow soon. The firm shipped some time ago, a 1,200 H.P. Niagara type of turbine to Utah, for the Telluride Power Company, to operate under 120 feet head, transmission sixty miles, under 40,000 volts, to be used for mining, lighting, and general power purposes.

The Pelton Water Wheel Company reports a large run of business for the last two months. Among the more important shipments may be mentioned: wheels, governors and connections covering a 2,000 h.p. plant for San Rafael Paper mills, Mexico; six wheels for various other localities in Mexico; a 1,200 h.p. wheel with governors and accessories for an electric transmission plant for Petropolis, Brazil (this being a duplicate of their former plant); an electric power transmission plant for Frujillo, Brazil; seven wheels, with governors, pipe lines and accessories to operate tea and coffee plantations in Java; three wheels for the Ruby Mines in India; two 500 h.p. wheels for operating mills in Tasmania, Australia; three 1,000 h.p. wheels, with governors and accessories, for the Yuba Power Co., Marysville, California; one 200 h.p. wheel for operating the mill of the Dexter Gold Mining Co., Tuscarora, Nevada; nine wheels for various mining operations in California.

The No. 8 Gates Rock and Ore Breaker may well claim the distinction of being the largest rock crusher ever made, and it probably marks the highest limit attainable in a practical way. A recent report of the working of these machines gives a record that will doubtless stand long unexcelled. The Pittsburg Limestone Co. Ltd., of New Castle, Pa. report officially as having in fourteen months crushed 23,174 cars averaging 24 gross tons each. The working day was ten hours. This gives an average hourly product of over 180 tons for fourteen months. Some of the large daily outputs seem almost incredible. On June 21, 1897, this machine crushed 4,350,000 pounds of rock, or 2,175 tons. This means a freight train of nearly 100 cars.

# The Royal Electric Company

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—MAKERS OF—

## Electrical Mining Machinery

### MOTORS

Adapted for Operating Stamps, Compressors, Hoists, Trams, Drills, Pumps.

Lighting Plants for Mines and Buildings.

## OUR S. K. C. SYSTEM

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

— WRITE OUR BRITISH COLUMBIA BRANCHES AT —

Rossland.

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**Mining Stocks.**

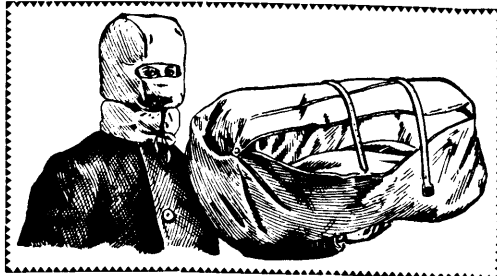
Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C., Feb. 23, '98

Company.	Capital.	Par Value.	Price.
<b>TRAIL CREEK.</b>			
Alberta.....	\$1,000,000	\$1	\$ 10
Big Three.....	3,500,000	1	10
Bruce.....	1,000,000	1	10
Butte.....	1,000,000	1	02
Caledonia Con.....	500,000	1	05
California.....	2,500,000	1	15
Camp Bird.....	1,000,000	1	05
Celtic Queen.....	750,000	1	04
Centre Star.....	500,000	1	
Colonna.....	1,000,000	1	23
Commander.....	500,000	1	17
Deer Park.....	1,000,000	1	12
Enterprise.....	1,000,000	1	20
Evening Star.....	1,000,000	1	07
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	10
High Ore.....	500,000	1	05
Imperial.....	1,000,000	1	10
Iron Horse.....	1,000,000	1	20
Iron Mask.....	500,000	1	44
I.X.L.....	1,000,000	5	10
Josie.....	700,000	1	31
Jumbo.....	500,000	1	70
Le Roi.....	2,500,000	1	7 75
Lilly May.....	1,000,000	1	20
Mabel.....	1,000,000	1	15
Mayflower.....	1,000,000	1	11
Monita.....	750,000	1	19
Monte Cristo.....	1,000,000	1	23
Morning Star.....	1,000,000	1	04
Nest Egg-Firefly.....	1,000,000	1	10
Northern Belle.....	1,000,000	1	10
Novelty.....	1,000,000	1	05
Palo Alto.....	1,000,000	1	05
Phoenix.....	500,000	1	12
Poorman.....	500,000	1	12
Red Mountain View.....	1,000,000	1	11
Rosland, Red Mountain.....	1,000,000	1	22
St. Elmo.....	1,000,000	1	07
St. Paul.....	1,000,000	1	12 1/2
Silverine.....	500,000	1	05
Virginia.....	500,000	1	18
War Eagle Consolidated†.....	2,000,000	1	1 15
West Le Roi.....	500,000	1	30
White Bear.....	2,000,000	1	19
<b>AINSWORTH, NELSON AND SLOCAN.</b>			
American Boy.....	1,000,000	1	15
Arlington.....	1,000,000	1	12
Argo.....	100,000	0 10	10
Athabasca.....	1,000,000	1	30
Black Hills.....	100,000	0 10	10
Buffalo of Slocan.....	150,000	0 25	
Canadian M. M. and S. Co.....	2,000,000	1	07 1/2
Cumberland.....	500,000	10	
Dardanelles.....	1,000,000	1	15
Dellie.....	750,000	1	12
Eidon.....	1,000,000	1	05
Ellen.....	1,000,000	1	07 1/2
Elkhorn.....	1,000,000	1	10
Eschequer.....	1,000,000	1	10
Fern Gold.....	200,000	0 25	80
Goldenough.....	800,000	1	25
Gibson.....	650,000	1	17 1/2
Grey Eagle.....	750,000	1	
Hall Mines.....	300,000	£1	
Idler.....	1,000,000	1	12 1/2
London.....	150,000	1	25
Minnesota.....	1,000,000	1	25
Nelson-Poorman.....	250,000	0 25	25
Northern Light.....	250,000	1	16 1/2
Noble Five Con.....	1,200,000	1	20
Ottawa and Ivanhoe.....	1,000,000	1	12 1/2
Payne.....	2,500,000	2 50	
Phoenix Consolidated.....	1,000,000	1	07
Rambler Con.....	1,000,000	1	32
Reco.....	1,000,000	1	1 70
Slocan-Reciprocity.....	1,000,000	1	06
Slocan Star.....	250,000	50	2 50
Santa Marie.....	1,000,000	\$1	05
Silver Band.....	250,000	0 25	12 1/2
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	1	30
Washington.....	1,000,000	1	25
Wonderful.....	1,000,000	1	05
<b>LARDEAU.</b>			
Consolidated Sable Creek Mining Co.....	1,500,000	1	10
<b>TEXADA ISLAND.</b>			
Texada Proprietary.....	250,000	25	25
Van Anda.....	5,000,000	1	05
Victoria-Texada.....	150,000	0 25	10
Texada Kirk Lake.....	600,000	1	1 00
Raven.....	1,000,000	1	10
Gold Bar.....	100,000	0 10	10

VANCOUVER ISLAND.			
Alberni Mountain Rose.....	250,000	1	05 1/2
Consolidated Alberni.....	500,000	1	19
Mineral Creek.....	500,000	1	05 1/2
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	
Horsefly Hydraulic.....	200,000		
Horsefly Gold Mining Co.....	1,000,000	10	2 50
Cariboo M. & D. Co.....	300,000	1	25
Golden River Quesnelle.....	£350,000	£1	85
Victoria Hydraulic.....	300,000	1	
LILLOOET DISTRICT.			
Golden Cache.....	500,000	1	1 00
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	36
Winchester.....	2,000,000	0 25	31
BOUNDARY.			
Old Ironsides.....	1,000,000	1	13
Golden Crown.....	1,500,000	1	25
Boundary Creek M. & M. Co.....	1,500,000	1	10
CAMP MCKINNEY.			
Cariboo†.....	800,000	1	55

† Dividends paid to date are as follows: Trail Creek District—Le Roi, \$725,000; War Eagle (old company), \$217,000. Camp McKinney—Cariboo, \$189,000. Nelson District—Hall Mines, £26,750; Fern, \$10,000. Slocan District—Payne, about \$500,000; 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.

**14 POUNDS.**



**THE Alaska Brand Sleeping Bag** is lined with **Eider Down**, and warmer than whole stacks of Blankets. For full particulars, see our advertisement in the last number. . . . Our **MINER'S CAP**, which protects the face and neck, is almost a necessary complement of every miner's outfit. It only weighs **ten ounces**, and is **warmer than fur**. The best stores in British Columbia keep them; but if your dealer does not have one and will not get you one, send us a money order for \$2.00, and we will send you one to any address in Canada, charges prepaid. (2)

**The Alaska Feather & Down Co.**

LIMITED.  
290 Guy St., MONTREAL, QUE.  
OUR REFERENCES—The Merchants' Bank of Halifax, or any Wholesale Dry Goods House in Canada.

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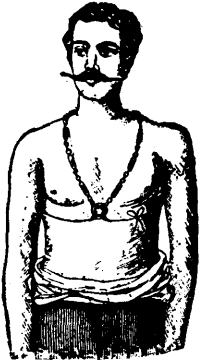


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**AND ALL NERVOUS DISORDERS**

Such as Megrin, Restlessness, Neuralgia, Muscular Tremors, Nervous Headache, Uneasiness, Irritability, Congestion and Insomnia as well as Asthma, Chlorosis, Anaemia, poor Circulation of the Blood, (cold hands and feet), Kidney trouble, Hardness of hearing, Catarrh, Stomach and Heart trouble, Convulsions, La Grippe and all results thereof

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**HEALTH CHAINS OF STETTIN, GERMANY,**

are without an equal as a simple and positive cure. They are prescribed and recommended by the most eminent physicians of Europe, and used in some of the best hospitals of the world. Do not confound these thoroughly reliable electric appliances with any of the numerous belts, batteries, etc., that are offered for sale. No fraud or swindle, the names of physicians attesting their merits prove the efficacy of these chains. Full particulars free upon application.



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**Electrical Mechanical Engineering.**

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**A LIBERAL OFFER**

To every regular or new subscriber to the **British Columbia Mining Record** We will send, upon application, accompanied by 5 cents to cover mailing, a copy of the **Directory of Mines**, containing a map of the Yukon, and the only complete synopsis published of the Provincial Mining Laws.

ADDRESS: MANAGING EDITOR,

P.O. DRAWER 57,  
 VICTORIA, B.C.

**B. C. Mining Record.**

# PROVINCE OF BRITISH COLUMBIA.

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

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

AMOUNT AND VALUE OF MATERIALS PRODUCED 1895 AND 1896.

	Customary Measures.	1895.		1896.	
		Quantity.	Value.	Quantity.	Value.
Gold Placer.....	Oz.....	24,084	\$ 481,683	27,201	\$ 544,026
“ Quartz.....	Oz.....	39,264	785,271	62,259	1,244,180
Silver.....	Oz.....	1,496,522	977,229	3,135,343	2,100,689
Copper.....	Lbs.....	952,840	47,642	3,818,556	190,926
Lead.....	Lbs.....	16,475,464	532,255	24,199,977	721,384
Coal.....	Tons.....	939,654	2,818,962	846,235	2,327,145
Coke.....	Tons.....	452	2,260	615	3,075
Other Materials.....			10,000		15,000
			\$5,655,302		\$7,146,425

Production for 1890, \$2,608,608 ; for 1896, \$7,146,425.

## 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 \$75,000 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 higher price of lead more than compensating for the lower silver values. The production for 1897 will much exceed that of 1896, as such mines as the Slocan Star, Payne, Ruth, Whitewater and other mines increase 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 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 district within her own borders, a most important factor in the increasing prosperity of this country, entailing as it does, and will, the employment of much capital and many men. The extension of the railroad systems to different parts is now in progress, and the next few years will see many parts in which the prospects for good mining are excellent, made easy of access, while ores can be shipped with facility to the smelting centres, where the assembling of the various inter-fluxing ores will make possible the treatment of all British Columbia ores at home.

## CAPITAL.

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

## MINERAL LANDS.

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

## YUKON GOLD FIELDS.

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

For information, Reports, Bulletins, etc., address

W. A. CARLYLE, M.E.

The HON. JAMES BAKER,

Provincial Bureau of Mines,

Minister of Mines,

VICTORIA, B.C.

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.

ISLANDS ROUTE.

Steamer "Rainbow" leaves Vancouver on Monday at 12 noon and Thursday at 10 a. m. for Texada, Shoal Bay and way landings.

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.

ALASKAN ROUTE.

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

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 15th 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.

For Puget Sound Points

\*~~~~~TAKE THE FINE STEAMER~~~~~\*

CITY OF KINGSTON

Speed, 18 knots.	8.00 a.m. Lv M 11	*Victoria	110 Ar 3.45 a.m.	Tonnage, 1147.
	11.00 a.m. Lv 38	Pt. Townsend.	72 Lv 1.00 a.m.	
	1.45 p.m. Lv 82	Seattle.	28 Lv 10.00 p.m.	
	4.00 p.m. Ar 110	Tacoma	M 1 Lv 8.00 p.m.	

Steamer City of Kingston makes connection at Tacoma with Northern Pacific trains to and from points East and South.

\*Daily except Sunday.

E. E. BLACKWOOD, Agent. VICTORIA, B.C.

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.

Correspondence Solicited. Smelter & Offices, Trail, B.C.

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Consulting Mechanical Engineer.

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

P.O. Drawer 754. Vancouver, 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
" " " 10 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 & TRADING COMPANY LTD

Steamers "International" and "Alberta" on Kootenay Lake and River.

TIME CARD IN EFFECT 1st OCTOBER, 1897.

Subject to Change without Notice.

Five-Mile Point Connection with all Passenger Trains of N. & F. S. R'y. to and from Northport, Rossland and Spokane.

Tickets sold and Baggage Checked to all U.S. Points.

Leave Kaslo for Nelson and Way Points, daily except Sunday, 5.45 a.m.  
Arrive Northport, 12:15 p.m.; Rossland, 3:40 p.m.; Spokane, 6 p.m.  
Leave Nelson for Kaslo and Way Points, daily except Sunday, 4.45 p.m.  
Leaving Spokane, 8 a.m.; Rossland, 10:30 a.m.; Northport, 1:50 p.m.

NEW SERVICE ON KOOTENAY LAKE.

Leave Nelson for Kaslo, etc., Tues, Wed., Thurs., Fri., Sat. 8:30 a.m.  
Arrive Kaslo 12:30 p.m.  
Leave Kaslo for Nelson, etc., Mon., Tues., Wed., Thurs., Fri. 4:00 p.m.  
Arrive Nelson 8:00 p.m.

BONNER'S FERRY AND KOOTENAY RIVER SERVICE.

\*Leave Kaslo, Sat. 4 p.m. Leave Bonner's Ferry, Sun. 1 p.m.  
Arrive Boundary, Sun. 12 p.m. Arrive Boundary, Sun. 5 p.m.  
Arv Bonner's Ferry, Sun. 10:30 a.m. " Kaslo, Sun. 10 p.m.

Close connection at Bonner's Ferry with trains East bound, leaving Spokane 7:40 a.m., and West bound, arriving Spokane 7 p.m.

\*The Alberta awaits the arrival of the International before leaving for Bonner's Ferry.

Kaslo, B.C., 12th July, 1897. GEORGE ALEXANDER, General Manager.

Change in Time Card After end of October, the SS. Alberta passenger service, leaving Nelson 8 a.m. and Kaslo 4 p.m., will be discontinued.

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 3.50 p.m.
" 8.36 " South Fork	" 3.15 "
" 9.36 " Sproule's	" 2.15 "
" 9.51 " Whitewater	" 1.48 "
" 10.03 " Bear Lake.	" 1.33 "
" 10.18 " McGuigan.	" 1.12 "
" 10.38 " Cody Junction	" 1.00 "
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.