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THE MONTH.

THE labour dispute in the Slocan is in a condition now in which its further continuation is a puzzle to those who look at the matter from a purely business point of view. The dispute has travelled far from the subject matter which engrossed the attention of the parties to it at its beginning. The eight-hour law was passed in this province at a time when such a sweeping change in the economic conditions of industry could ill be afforded. It was passed in response to a sentiment among working men in favour of reducing their hours of labour—a most praiseworthy sentiment, but one they would themselves be the last to put into practical effect, if it were clear that the result would be to greatly diminish the opportunity to work at all. It was passed without any due inquiry into the conditions of the mining industry which it affected and the lamentable result stands as a monument to ill-considered and hasty legislation. The law having been passed, however, and put in operation, it was early recognized by most people as irrevocable. It formed a new condition of affairs, a new environment to which the industry of mining must adapt itself without any hope of recurrence to the labour day of ten hours. Those who were injured by its passage sought relief in a reduction in the wages paid under the new system. The miners on the other hand claimed that having received this boon by legislation they were entitled to the same wages as they had previously received, else the boon was of no real benefit to them. Had legislation the power to take away from capital a portion of its profits and present these to labour this argument of the miners would be reasonable enough. But legislation does not possess this power. So soon as capital suffers loss it withdraws from industry and permits it to stagnate in the particular locality or trade in which its interests have been touched. Nor is there, as many people seem to think, any personal malignity involved. Capital is an impersonal and mechanical force operating under natural laws. Neither the capitalist, nor the legislator, nor the workman can affect its operation in the least, nor change by one iota the laws by which it is governed. Can one imagine the principle of gravity shedding tears over the destructive terrors of an avalanche? Capital is as little subject as the principle of gravity to considerations of a personal nature. Wisdom and prudence increase a country's store of capital, waste and extravagance diminish it. Upon an adequate accumulation the welfare of a community depends. But in its operation it is not subject to caprice whether of individuals or of legislative bodies. Therefore if legislation was passed lessening the returns to capital and reducing them below the returns it demanded from a particular industry in a particular country, the infringement could only result in the stagnation of the industry in question and the stoppage of further capital from entering it. So that, except by a return to the old conditions or a proportionate reduction in the remuneration of labour under the new, no way out of the impasse was possible, nor was it any argument against the latter to say that because the change had been inaugurated by legislation, economic necessities should lose their binding force. The fact that the mines were closed down and remained closed is proof enough that the natural law governing capital's operation in the Slocan had been interfered with, and that the industry could not revive unless the old conditions were restored, or a reduction in wages effected. The men's contention regarding legislation was simply beside the point. It was neither right nor wrong. Legislation can alter the hours of labour but it cannot effect the proportion of the product of labour which goes to the labourer as against that going as a return to capital. So long as the dispute remained on that ground it could not be adjusted. It was not susceptible of adjustment. On the other hand, if the men were wrong in demanding the old scale of wages it must be admitted that the mine owners were equally wrong in demanding a reduction of 50 cents per day on account of the eight-hour law. This involved a larger proportional reduction in wages than the law had reduced the amount of

THE EIGHT-HOUR LAW —A SUMMING-UP.

work done. Any employer of labour is of course entitled to get his work done as cheaply as he can, but he is not entitled to use a law as a lever to effect its cheapening. If $3.50 per day was as much as capital could afford to pay under the old scale of hours then the new scale of hours should have brought about a sufficient reduction to leave the unit of work costing the same as it did under the old system. But no further reduction was legitimate. Here, then, was the Slocan dispute in a nutshell, the men were trying to use the law to extract a higher rate of pay per unit of work, the owners were attempting to enforce a lower rate. It was obvious to the least instructed human being outside the area of dispute that the ultimate result must be a compromise on a basis of $3.25 per shift of eight hours. But it took eight months before the parties to the dispute abandoned the ground they took up at the beginning. Eventually, however, an offer was made to the men of a permanent settlement on a basis of $3.25 for an eight-hour shift. The acceptance of this was complicated by the fact that a number of men were working at the old scale on development work in the mines. The union's answer to this offer was unsatisfactory for two reasons, first, in only accepting $3.25 for stoping work, retaining $3.50 as the scale for drifts, shafts and raises, and second, in endeavoring to impose conditions upon the mine owners regarding the employment of union labour only. The first of these stumbling blocks could probably have been got over. The class of work for which $3.50 was demanded was all such as could be contracted for by the mine owners, and in any case the stipulation was only entered in the reply to secure the adhesion of the men at present at work. So for as the union's reply was concerned it was broadly an acceptance of the $3.25 rate, or at least an abandonment of the principle of the same wage as before the passage of the law. The owners, having abandoned the attempt to enforce a $3.00 scale, and the men having given up the $3.50 scale as a matter of principle there was nothing in the wages question which did not admit of very easy adjustment. The union's demand, on the other hand, for the employment only of union labour was not only unfair to the employers but absolutely at variance with the principles of trades unionism itself. A master should have no more to do with whether a man is a member of a union or not than with whether he is a member of a church or not. Nor should an employer be used as a lever to enforce adhesion on the part of his men to a union. Unless a union can show enough of benefits to the working man to secure his voluntary adherence it is not entitled to his support. Union men may object to working with non-union men and may, if they choose, refuse to do so. But it is merely destructive of the union's usefulness to make the masters its recruiting officers. Upon this question the dispute in the Slocan goes on. The actual matter of the dispute has disappeared. Rancor and distrust alone keep it up. Because these undesirable qualities are at the bottom of the men's demand. Surely there is common sense enough left on both sides to perceive that it only requires a little mutual confidence, a little mutual concession, to settle matters upon a firm and lasting basis and to restore the promise of the silver-lead mining industry in this country.

There are many curious things in connection with the mining law of British Columbia and even more curious things in connection with the way it is carried out. Recently a regulation has been made in relation to the issue of Crown grants which is at once petty, useless and excessively vexatious. It appears there is a clause in the Act which provides that a certificate of improvements may be issued when $500 worth of work has been done and recorded. This has lately been interpreted to mean that a certificate of improvements may not be issued unless five separate assessments are duly recorded at $2.50 per head. Let us for example take a claim staked in June, 1899. During July $500 worth of work is done, the claim is duly surveyed and the description of the work put in. The new ruling requires that five separate records must be made before the certificate of improvements can be issued. Anything more paltry or idiotic could not well be conceived. It is too much exasperation to inflict upon claim owners and surveyors merely for the purpose of enriching the Government by $10.00. The work must be split up into five parts and a solemn record made upon each. Could anything be more nonsensical? The amount of delay, expense and trouble this has occasioned in several instances is very great. The resultant advantage, except the miserable fees, supposed to be payment for registration of title not taxes, is absolutely nothing. It is the trick of a second rate lawyer's office to expand a bill of costs. The whole matter originated in the office of the Nelson Gold Commissioner, Mr. J. A. Turner, upon the 22nd of May last.

A VEXATIOUS REGULATION

Application was made by a surveyor to the mining recorder at Nelson for a certificate of improvements upon a claim on which only three records of assessment had been filed. It was refused by the recorder acting under the instructions of the Gold Commissioner on that ground. A lengthy correspondence followed during which the Minister of Mines was appealed to. The following letter gives the ruling of the Department after consultation with the Attorney-General:—

"Department of Mines,
Victoria, 11th August, 1899.

"Sir:—I beg to acknowledge your letter of the 7th inst. with respect to your application for a certificate of improvements on the ———— mineral claim.

"I regret not having replied to your letter of the 23rd June earlier, but this question has been under the consideration of the Hon. the Attorney-General.

The clauses in the Mineral Act are somewhat ambiguous as to the recording of assessment work before Form 1 can be issued, but as I understand that it has not been customary in the majority of the mining divisions to require such records to be made I have decided to instruct the mining recorder at Nelson to issue a certificate of improvements without requiring these records to be made provided he is satisfied the work has been done and the other requirements of the Act complied with.

"I am, sir, your obedient servant,
"J. FRED HUME,
"Minister of Mines."

It might naturally have been expected that this would have settled the matter. But on September the 2nd the following letter was received from the mining recorder at Nelson:—

"Nelson, B.C., September 2nd, 1899.

"Sir:—Referring to your letter of the 29th ultimo, I would say that as the above claim remains the same

as it did May 22nd last, I will have to request that the conditions contained in my letter of that date be complied with before issuing Form 1.

"Yours obediently,
"D. A. McBEATH,
"Mining Recorder."

The only explanation possible of such a letter appeared to be that the decision of the Department upon the Attorney-General's advice had not been forwarded to the Nelson office. That, however, was not the case. The Minister of Mines had communicated with the Nelson office and the Gold Commissioner had simply refused to carry out the instructions of the Department. Upon these instructions other offices were issuing certificates but the Nelson Gold Commissioner remained a source of higher authority than the Minister of Mines. The following letter from the Minister of Mines can only be regarded as a confession of weakness. He virtually admits his inability to supervise the actions of the Gold Commissioner of Nelson district:—

"Department of Mines,
"Victoria, 13th September, 1899.

"Sir:—I beg to acknowledge your letter of the 6th inst., stating that the Mining Recorder at Nelson had refused to issue Form 1 in respect of your application for a certificate of improvements for the ———— mineral claim.

"I find that the instructions with respect to your claim were sent to Mr. Turner and not to Mr. McBeath, therefore it is possible my decision in this matter may not have been brought to Mr. McBeath's notice.

"I will now write to Mr. McBeath and beg him to carry out the instructions conveyed in my letter to Mr. Turner of the 11th August in respect of your claim.

"I am, sir, your obedient servant,
"J. FRED HUME,
"Minister of Mines."

The phrase "therefore it is possible my decision in this matter may not have been brought to Mr. McBeath's notice," is delightful; and the spectacle of a Minister of the Crown, finding the Gold Commissioner obdurate in defiance, "begging" the Gold Commissioner's subordinate officer to obey the mandate of the Department, is, if sufficiently humiliating for him, intensely ludicrous to everyone else. Did this humble appeal have the desired effect? Not a bit of it. Mr. Turner prevented Mr. McBeath from carrying out the decision of the Department, and when he left for England left precise written instructions with the acting Gold Commissioner that Form 1 was not to be issued till his view of the law had been carried out in express defiance of the ruling of the Department under the advice of the Attorney-General. The result eventually was that the Department caved in as the following letter shows, dated the 29th December, 1899. The date is highly important:—

"Department of Mines,
"Victoria, 29th December, 1899.

"Sir:—In further reference to the correspondence that has taken place in connection with the record of assessments on a mineral claim before a certificate of improvements can issue, I beg to inform you that the Gold Commissioners have been instructed not to issue a certificate of improvements for any mineral claim until the books of the Mining Recorder of the division in which such claim is situate show that certificates of work amounting to $500 have been duly issued and recorded.

"I am, sir, your obedient servant,
"J. FRED HUME,
"Minister of Mines."

All that appears to be now necessary to complete the incident is a further letter from the Minister of Mines "begging them to see that their respective Gold Commissioners carry out the instructions of the Department. What a travesty of executive gov—

How the Noble Siwash Travels in the Omineca District.

ment! And what a comforting reflection for those interested in mining that the industry is subject to such capricious and vexatious rulings!

The greatest and most pressing need of Canada today is capital to develop the mines of the country. One of the best means of inducing its incoming is to publish reliable statistics of the output of the precious metals. Let us show our progress month my month and year by year. Surely if the United States finds it expedient to publish an epitome of its mineral production for the year as promptly as the 31st of December, it would also be of advantage to Canada to see that its statistics of mineral production were put promptly in the hands of the public. The Rand crushings are, or have been, eagerly looked for in reference to each month of the year. Western Australia takes the most elaborate precautions to have its monthly and yearly production accurately noted. There can be no two questions about the adantages to be derived from the publication of such facts and figures. Canada has nothing to conceal, as a matter of fact a most wonderful rate of progress to show. The mineral production of Canada in gold, silver, lead, copper and nickel has been multiplied two and a-half times in two years. About $13,000,000 in 1897, it increased to $21,000,000 in 1898, while a rough estimate for 1899 shows an output of at least $34,000,000. Canada is now as important a producer of the precious metals as Western Australia and has a future infinitely greater. But people do not know it. The mining industry of Canada is still considered by European investors as of doubtful commercial importance and the results so far obtained have been minimized in their minds by the lack of success, on the average, which has attended their particular investments. But the main trouble is that Canada has not yet awakened to a consciousness of its own future as a mineral producing country. The glory of the country is not its wheat and corn and butter and cheese, but its gold and silver and copper and lead and coal and iron. These mark it as a great manufacturing and trading conutry. The natural resources which have made great countries of Britain and the United States must equally affect the future of Canada. Still, without the power or will to attract the surplus capital of the world how comparatively slow and laborious must our progress be. As already pointed out one of the best ways to attract capital is to publish statistics of progress, and it so happens that this could be very easily done. The mineral output of Canada takes the form of either gold dust, gold bullion, lead bullion, copper matte or crude ore. None of these are retained in the country; they are all exported and their amounts, with the value of them, are entered at the various ports of entry. Now what could be easier than for the Government to get from each customs officer the amount of metal of different kinds, and its value, exported every month, to collate and epitomize these returns at a central office and publish a monthly bulletin of mineral production which could be easily and accurately summarized at the end of the year. Such a bulletin would be eagerly seized upon and published by the press; its cost would be almost nothing and its value to the mining industry would be incalculable. Of course all this information finds its way finally into the statistical year book. But there its proper significance is lost to the casual reader and has to be carefully extracted before it becomes anything of an advertisement to the country. The step suggested is so easy and so obvious that surely some one in authority might be induced to consider the expediency of its immediate adoption.

Apropos of the new basis which the American Smelting and Refining Co. has established in purchasing lead ore, our esteemed contemporary, the *Mining and Scientific Press* of San Francisco, makes some remarks which should prove interesting to owners of silver-lead mines in this country:

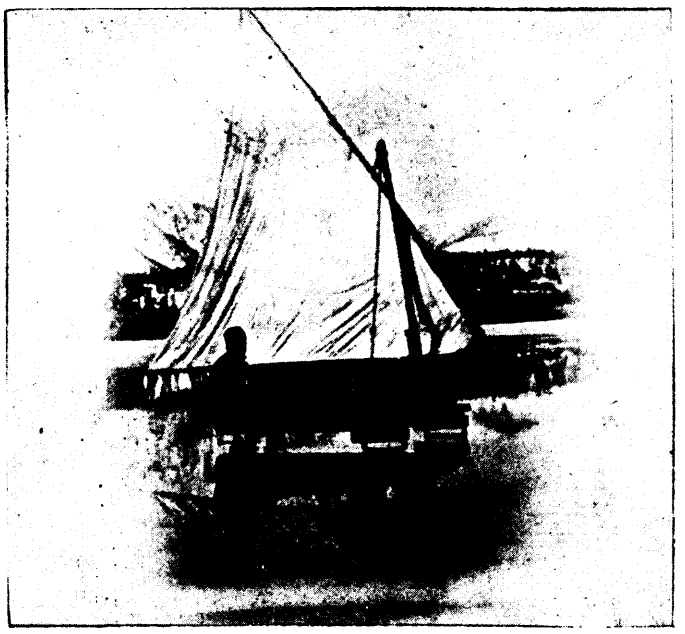
"After January 1st, 1900, the American Smelting and Refining Co. wishes to do away with the brokers' quotation on lead, and in its lieu the quotation of the average actual sales in New York for the previous week will govern the settling price of lead for the week following. The full price of these average sales will be paid, less a deduction of ½ of a cent per pound."

"The plan is to have the average price of lead which ruled in New York City during the week wired the different managers of the different districts every Monday morning, and the settlement for the current week will be on that basis—less ½ of a cent per pound: for instance, to-day's quotations, $4.70½, would make the price $4.57½. That the market will fluctuate is manifest; that the system will not induce or insure general satisfaction is equally plain; but it is deemed an improvement over the old way. The fact that the purchasers have the making of the market, the setting of the pace and price, and can arbitrarily raise or depress values, is too obvious to need more than reference. With the lead producers of Colorado, Utah and the Coast rests the final verdict. The first effect is satisfactory, in an increased price. Lead fluctuated so much, and 'brokers' quotations' have so spoiled markets as to occasion an annual loss of many hundreds of thousands of dollars. The present quotations are the best in many years. Ten years ago lead was $3.85 (and silver was $1.50¾). In August, '90, lead went to $5, and in October of that year $5.25. In January, '91, it went down to $4.05, silver being quoted at $1.03¾. January 1st, '92, lead was $4.25; silver, 94⅝c.; and in June, '93, lead ruled at $3.40, silver 62c. Lead dropped during '94 and '95, and in August, '96, went down to $2.50 per hundred pounds. On January 1t, '97, it had advanced to $2.90; January 1st, '98, $3.70; December, '99, $4.45. The quotation of $4.57½ looks well alongside the above figures. In the new deal it is understood that the National Lead Co. has got the worst of it. The result must be the stimulation of the mining of plumbiferous ores, for they are a prime requisite in the smelting of dry ores. It will also affect the present international relations in the importation of British Columbia lead ore. There is an increase in the working charges, nothing is paid for the lead in lead ores containing less than five per cent of that metal. Nevada complains: 'Ninety per cent. of the assay of lead at New York quotations is now paid, less $30 per ton, which, with the ½ of 1 cent per pound added, makes a deduction of $32.50 per ton. In the past from $23.50 to 27.50, depending on the percentage of lead, was deducted. This will make a difference of from $4 to $9 per ton on lead. We also pay $1 per ton more for treatment charges.' The Smelting and Refining Company say: 'This is the best we can do. In Utah the increased price of coke, coal and iron ore makes an additional expense to our Salt Lake smelters of $175 per day.'

"The new adjustment can not give universal satisfaction, but will tend to postpone the inevitable opposition that the combined smelting interests in the districts affected must inevitably meet."

The immediate outcome of the change in the incidence of Dominion customs as regards Canadian lead refined in the United States is the blowing in of a lead furnace at the Trail smelter, which will treat a considerable proportion of the lead ores of the Slocan and East Kootenay and give employment to from fifty to seventy-five men. This doubtless will mean an appreciable addition to the metal industry of South Kootenay, if the management of the Trail smelter, at whose instance the concession of the rebate of duty was chiefly granted, find that the programme of successfully competing with the American smelters can be carried out as promised.

The addition of the Centre Star to the dividend-paying mines of Rossland, albeit anticipated, is very welcome. The first dividend of one per cent., which it is hoped to make a minimum monthly rate of payment aggregates $30,000 but as the mine is already yielding an average of 1,000 tons a week and will do more in the early future, it would seem that there is every prospect of a long continuance of a monthly dividend of at least one per cent. on the capital of $3,000,000. The dividend, payable as it is monthly, is really almost equivalent to a dividend of 14 per cent. per annum paid in half-yearly instalments.



Boating on Lake Windermere, E. Kootenay, in Winter.

The developments foreshadowed in the Rossland camp during 1900 are such as cannot be interfered with by commercial stringency, or wars or rumours of war. It cannot be long now before adequate hoisting facilties are provided in the big producing mines. The lack of them is the only circumstance which has been retarding the output of ore. At the same time the tonnage is safely maintained at 5,000 tons a week —260,000 tons a year. It has been the unfailing experience of the camp that the lightest shipments have been characteristic of the first quarter of the year. Why it should be so it is not easy to conjecture, but so it has been in the past and there are very definite reasons for supposing that this year will prove no exception to the rule. In the first place the Le Roi has as yet received no advantage from the enormous capital expenditure in providing better hoisting and timbering facilities in the mine. Now it is obvious to anyone not specially endowed with reasoning powers that if there was not more ore to ship than is at present being shipped these improvements are wholly superfluous. As a matter of fact the Le Roi has reserves of ore wonderful in extent and of satisfactory value. It is not hazarding a wild prophecy to say that the rate of output from the Le Roi will be doubled during 1900 and that the price of Le Roi shares touch the £10 mark. The conditions making for increased production are even more marked in the War Eagle and Centre Star than they are in the Le Roi. As depth is gained it is found in both of these mines that the present rate of shipment is quite inadequate to the bodies of ore disclosed. Indications of the pressure are to be found in the steadily increasing pay roll. Month by month in a steady stream more men are engulfed in these great mines and month by month the population and prosperity of Rossland increases in consequence.

Sophie Mountain is practically assured of one railway this year if not two. A survey has been made from Rossland and the route platted has been placed at the disposal of a company prepared to build provided arrangements can be made with the mines for a certain output of ore. Mr. Hill, the president of the Spokane Falls & Northern Railway, is also seriously considering a branch to tap the valley of main Sheep Creek. As is usually the case, it never rains railways but it pours them. The hint or sugggestion that one company is going to make a new connection seems always to stimulate a competing line into overt action. Nothing is so desirable to a railway company as territory which some other company covets. A branch line from the S. F. & N. railway would open up a big mineral territory cut off at present from all access to the outside world.

The Boundary Creek district will, as we have already pointed out, be unusually well accommodated with shipping facilities, for railway spurs run to the dumps of many of the larger mines, thereby providing cheap transportation from mine to smelter. Yet, seeing that many of the ledges, although of great extent, are of so low a grade as to barely admit of profitable reduction, after paying extraction and transportation charges, would it not be wiser to concentrate them before shipping? As a rule the gold and silver values are in the iron pyrites, pyrrhotite, chalcopyrites and galena. Of course there are exceptions—consequently a somewhat close concentration is possible, without losing any material portion of the values. An experiment made recently upon ore from the Bullion mine, on Olalla Creek, Upper Keremeos, showed that when concentrated to 41 per cent. of its original bulk,

all gold and copper were saved, together with nine-tenths of the silver. Copper seems to be the great gold carrier in Boundary ores, though there are instances when this generalization does not hold good. As a rule, however, the more copper, the higher the gold values.

Where sufficient water for milling purposes is available, and the ores do not lie in the immediate neighbourhood of a railroad spur, it will be found that a concentrating plant offers the best solution as to the treatment of many Boundary properties.

We are glad to see from the audited accounts of the Lillooet Fraser River and Cariboo Gold Fields, a copy of which we have just received, that our advice to the effect that the company had lost during the past financial year the sum of £8,518 was absolutely incorrect. We much regret having published the inaccurate information in our January issue, as the statement was unjust to the management of the company both here and in London. The apparent bad showing is attributable to the writing off of £7,851 -5s. 2d., e.g. expenditure incurred in 1896 on six mineral claims. This outlay should have been debited to profit and loss account two years ago instead of to the past year's statement. As holding more than 75 per cent. of the capital of the Sunshine Company, apart from other assets which may yet turn out trumps, the Lillooet Fraser River and Cariboo Gold Fields may still prove a success, and the directors by waiving their rights to draw fees, and by cutting down expenses in various directions, are certainly now doing their part. As a matter of fact we believe that were it not that certain contracts made some four years ago have still some time to run, the administration expenses during the past year would have been less than was the case. But economy may be carried too far, and a judicious outlay of money in carrying forward certain necessary development work at the Silver Cup—(of which property we are enabled in this issue to give some particulars)—and also in exploiting the properties in Illecillewaet and Rossland, is to be recommended at the present time.

There is considerable interest, accompanied by some excitement in Vancouver, resulting from the visit of certain representative mining men of Montana, California and Washington, who are either interested or likely to become interested, in a group of copper claims known as the Britannia on Howe Sound and within thirty miles or so of Vancouver by water. The group was until recently wholly owned and at considerable cost partly developed by Mr. J. Boscowitz, of Victoria. A controlling interest in the group has, however, lately been acquired by a syndicate, included in which are Mr. H. C. Walters, of Butte, Montana, and other well known American mining men; while a leading promoter of the syndicate is Mr. J. H. Adams, of British Columbia. It is claimed that as a result of the driving of a cross-cut tunnel for 200 feet, a very large quantity of ore has been discovered, yielding six per cent. in copper. The property is being actively developed and those behind the undertaking state that a smelting and concentrating plant will be set up near the claims in the early future. Should the property prove half as good as those behind the syndicate declare it to be, its development will mean very much for Vancouver, for it is averred that 200,000 tons of ore are in sight. This is, however, a large statement and an impartial conservative estimate is that the claims constitute a comparitively low-grade copper proposition, which—should there be a continuity of a large mass of ore—will yield sufficiently good returns on moderate capitalization and good working. The margin of profit per ton, after payment of cost of mining and treating, is not, however, great. Meanwhile those behind the enterprise freely invite the inspection of their property by mining experts, which is perhaps evidence of their confidence in the venture. Although Vancouver has more than once been disappointed by misleading reports of rich finds within easy reach, the Howe Sound mine promises more than usually well.

It is generally anticipated that the coming Yukon season will prove comparatively quiet, pending a large introduction of hydraulicing on a considerable scale. To this comparative quietude the rush to Cape Nome and the recent fire, which has destroyed a very large amount of property at Dawson, will each contribute. Under the circumstances it is very generally felt that the time is specially opportune for the Dominion Government to make a considerable reduction of the Yukon gold royalty, which in its present form and extent of application, is held by most experienced northern gold mining men to be excessive and obstructive of development. Reverting to the subject of the Dawson fire, first reports of this estimate the total loss at half a million dollars. It is more than likely, though, that ultimately the damage done will be found not to exceed $250,000. First reports of fire troubles out West invariably exaggerate the direct loss. Incidently, however, reckoning detriment done by interruption of business, the loss will, of course, be larger than any ascertained by insurance assessors or other experts and in any case the fire must cause serious temporary injury to Dawson.

As a good deal of nonsense is still being talked about the value of quartz finds in Atlin, a correspondent in London, who last year examined a number of claims in this district in the capacity of consulting engineer to an English syndicate, sends us some interesting data as to Atlin ore values. The syndicate were offered options on a number of claims, on which the ore in sight was represented to be twenty million tons having an average value of $8. This representation, not unnaturally, was found to be false, but the syndicate acquired twelve claims, showing small surface values, for which the moderate sum of £2,000 was paid, instead of the fabulous price originally asked. Our correspondent writes: "In the neighbourhood of Atlin City the country rock is much metamorphosed and is probably an altered gabbro, much serpentised. Enclosed in this are immense areas of altered rock, or quartzose dikes showing great secondary action, and this appears to be generally more or less auriferous. My investigations demonstrated the rock itself to run about $1.00 or rather less; while in the joint planes and fissures one frequently finds high-grade free-milling gold ore. What the future of lode mining in Atlin may be, no one can at present foretell. But if the average values prove sufficiently high for profitable treatment, then great things may be expected. We have, meanwhile, felt that taking all the facts into account, there is in Atlin a considerable area of ground worth prospecting, and that in certain areas or zones values might be sufficiently concentrated to be pay-

able. This seems to have been borne out by our work last year, so far as we have information. Of two prospecting drifts, one has shown no values higher than $2.20, while in the other the ore averages $4.00 and is improving in grade. The ore is easily treated and by open-cast working upon a large scale the cost would not be over $2.00 per ton. In conclusion allow me to add that you deserve thanks for the plain, truthful statements which have appeared in the MINING RECORD with regard to mining in the Atlin district. Your comments are in marked contrast to the usual ridiculous screeds in which Western journals delight to revel."

Among those associated with mining enterprise in British Columbia, Mr. J. Roderick Robertson, of Nelson, whose portrait we have the privilege of publishing this month, occupies a prominent place. As general manager of the London & British Columbia Goldfields, Limited, he is the representative in this Province of very large British interests, and it affords us much pleasure to add that under his management these interests have been carefully conserved, and that it is no doubt largely due to Mr. Robertson's administrative abilities that the London & British Columbia Goldfields, Limited, enjoys the reputation of being the best managed of the many English mining companies operating in this field. The London & B.C. Goldfields, besides operating the Ymir Gold Mines, Limited, at Ymir, the property of the Enterprise (B. C.) Mines, Limited, on Ten Mile, Slocan Lake, and other properties in the Boundary Creek district and in East Kootenay, also brought out, as parent company, the Yukon Goldfields, Limited, and the Whitewater Mines, Limited. The capitaltzation of the companies are as follows: The Ymir Gold Mines, Ltd., £200,000; The Enterprise (B.C.) Mines, Ltd., £150,000; The London & B.C. Goldfields, Ltd., £200,000; The Whitewater Mines, Ltd., £125,000; The Yukon Goldfields, Ltd., £100,000.

Mr. J. Roderick Robertson.

The amendment to the Placer Mines Act, under which the Provincial Government proposes to permit the transfer of placer claims to aliens, should help to meet the requirements of the Atlin country, where in view of the fact that the consolidation and joint working of many claims by improved mechanical methods is required, it is desirable to encourage the influx of foreign capital for the purpose of prosecuting gold mining on a large scale.

That Greenwood is destined speedily to become a very important centre of the Boundary Creek district was illustrated by the expenditure in that city last year of no less than $320,000 on new buildings—an excellent showing in view of the fact that up to the present nearly all the mining work done in this camp has been that of development, only a few thousand tons of ore having as yet been produced from the mines. The advance of Greenwood last year, however, only anticipates by a few months the beginning of a very considerable output from the country tributary to it.

A correspondent from Nelson has sent us a long communication criticising the report of the Hall Mines, Limited, with the suggestion that his remarks should be published in the MINING RECORD, provided the editor of this periodical assumes all risks in the event of the Hall Mines entering an action for libel in consequence. For this reason, and also because our correspondent's criticism is in places distinctly malicious and in others shows great ignorance of smelting practice. we have suppresed it. Meanwhile we have published elsewhere the Report in full. In the Report itself there is nothing particularly warranting criticism; but the none too favourable showing for last year is simply attributable to the fact that the mine can't "keep up" with the smelter. It is high time, too, that the administration expenses in London were reduced. As matters are the Board of Directors do more to hamper than promote the interests of shareholders. To the management in Nelson we would suggest, that when in future the Company propose to purchase claims, it would be just as well to employ an "expert" who has at least an elementary knowledge of mineralogy.

Agents of American transport companies are at-

tempting in Vancouver to induce a large migration of British Columbians to Cape Nome this spring. In view of the absolute impossibility of securing valid titles to bench claims in Alaska and of the certain trouble and lawlessness which will arise in consequence few sensible people will listen to the allurements of the Cape Nome "boomers." There is moreover, no reason to doubt that the gold opportunities of that region are vastly exaggerated.

Like the eight-hour law, the Act passed last year by the Provincial Legislature excluding aliens from engaging in placer mining in British Columbia, was, as we stated at the time, an instance of ill-considered and hasty legislation—the sort of costly mistake which at the present time particularly the country can ill-afford to make. The repeal or the radical modification of the law is the only way now in which the evil it has wrought can be repaired.

THE MINES OF THE TROUT LAKE DISTRICT

THE SILVER CUP GROUP.

THESE properties are situated on what is known as Silver Cup Hill, rising up from a point called "Eight Mile" on the South Fork of the Lardeau River, distant some eight miles from Trout Lake City. They are owned by the Sunshine Limited, an English company, subsidiary to the Lillooet Fraser River and Cariboo Gold Fields, Limited. The Sunshine Limited is to all intents and purposes a private company, the stock never having been placed on the market, and being mostly held by the Lillooet company, which by means of its interest in these properties it is hoped will largely retrieve its fortunes.

The group consists of nine claims and fractional claims, viz: the Silver Cup, Sunshine, Excelsior, Mountain, Gold Bug, Silver Cup Fraction, Excelsior Fraction, Mountain Fraction and Goldseeker Fractional claims.

The feature of the properties consists in the high-grade character of the ore—which is an argentiferous galena, carrying a high value in silver and good values in gold and lead.

Development has been confined to the Silver Cup and Sunshine claims—on the former some 3,000 feet of work have been done and on the latter about 500 feet. Two veins have been opened on the Silver Cup, one known as the Silver Cup vein and the other as the Big vein. The Silver Cup vein is clearly defined on the surface, and it was upon this outcropping that the main shaft—known as the Silver cup shaft— was sunk 185 feet, a cross-cut tunnel driven in from the surface and known as the Main cross-cut connecting with the bottom of the shaft, and intersecting the Silver Cup vein after being extended 350 feet. From the point of intersecting drifts have been run on this vein about northwest and southeast some 80 feet and 210 feet respectively, and high-grade and concentrating ore has been developed, a certain amount of stoping having also been done from each drift.

Before cutting the Silver Cup vein, the cross-cut tunnel encountered, when in a distance of about 300 feet, another vein, that known as the Big vein. Drifts have been run about northwest and southeast on such vein at this level, for distances of 165 and 230 feet respectively, and considerable quantities of high-grade ore and concentrating ore have been developed and some of which has been stoped.

From the northwest drift on the level of the cross-cut tunnel, a winze was sunk in ore a distance of 50 feet, and drifts on the vein and in the ore northwest and southeast for 30 and 75 feet respectively have been run from the bottom of such winze.

The Main crosscut tunnel was extended some 65 feet beyond the Silver Cup vein and encountered what may turn out to be an ore chute—but at the point in question—where vein matter has been intersected—there is no mineral.

Some distance from the Main cross-cut tunnel, and 115 feet vertically lower down the mountain, another crosscut tunnel, on what is known as the 300-foot leel, has been driven 330 feet and has intersected a large vein which is thought at the point of intersection to be a juncture of the Big and Silver Cup veins. Drifting along this vein to a point underneath the main workings has been done, and amongst other ore chutes, one continuous ore chute for a length of 115 feet exposed. It is believed that the work now being prosecuted will show the ore chute in question to extend continuously for not less than 200 feet, being the length of the main stope immediately above.

An upraise in ore from the 300-foot level to connect with the winze sunk on the Big vein from the 185-foot level has been driven, and other raises in ore have proved that apart from the ore in sight on and above the 185-foot level, a large body of ore is available for stoping between such level and the 300-foot level. The operations now being conducted, and as far as at present prosecuted, also show the ore bodies to extend continuously below the 300-foot level.

The Sunshine claim is situated immediately below the Silver Cup. Here a tunnel, known as the Main tunnel, has been driven for a distance of 280 feet. Two bodies of ore have been passed through, and some 120 tons of ore stoped—the ore being of approximately the same grade at that of the Silver Cup.

At a point some 100 feet vertically below the main tunnel, a cross-cut from the surface has been driven about 600 feet, at which depth the vein, and mineral, were struck. It is proposed to drive at the level in question on the vein, with a view to upraising in ore to a short winze sunk in ore from the main tunnel.

The total amount of ore realized to date from the group is 810 tons, which have produced a net return at the property (all freight and treatment charges deducted) of $75,000. About 200 tons are in course of shipment, and although the ore has not been blocked out sufficiently to enable an accurate estimate to be made, it is believed there are at present time (apart from the concentrating ore in place) some 3,000 tons of shipping ore in sight. In addition to the concentrating ore in place, there are some 3,500 tons of such ore on the dumps and broken down in the stopes.

At the present time the ore is transported to the foot of the hill, about three miles, by means of rawhides, and then conveyed on sleighs to Thompson's Landing, the shipping point for all smelters. This means of transportation will, on the advent of the Canadian Pacific Railway Company's branch into the district, be much improved, as the clean ore and concentrating ore can easily, by means of an aerial tramway, be taken down to Trout Lake, where the concentrating ore can be put through a concentrator and the product, together with the clean ore, loaded on cars and transferred on scows across Trout Lake to the railway, which is expected next summer to be completed to Trout Lake City. After the line has been built shipments from the property should be considerable.

THE QUATSINO COAL MEASURES.

REFERENCE was made in the MINING RECORD last month to the promising nature of the mineral and coal discoveries in the northwestern part of Vancouver Island, in the vicinity of Quatsino Sound, one of the most remarkable sheets of water in British Columbia, and rivaling even the famous Puget Sound. With a bold and safe entrance from the Pacific Ocean in N. Lat. 51 deg., 20 min., the main arm runs for 20 miles in an easterly direction up to Limestone Island, which is 2½ miles long by 1½ miles wide, from which point an arm runs off in a south-easterly direction for 14 miles. From Limestone Island the main arm continues for 5 miles and enters into an arm running westerly 21 miles and an arm running easterly 7 miles.

Two miles from the entrance is also an arm running in a northerly direction 10 miles, so that this is an inland sea 77 miles in length by a width varying from a half to 2½ miles in width, with a depth of water of 20 to 125 fathoms.

So far does Quatsino Sound intrude into the island that Coal Harbour, or the property of the West Vancouver Commercial Company, is but nine miles south of Hardy Bay on the east coast of Vancouver Island on the inland passage. Both Coal Harbour and Hardy Bay are land-locked harbours with deep water and good anchorage.

Throughout the region in the neighbourhood of Quatsino Sound are extensive coal and copper, limestone and fire-clay deposits, accessible by deep navigable quiet water, but the means of communication are so inadequate to the needs of the rich region that prospecting is only prosecuted under very disadvantageous conditions.

For some time past the West Vancouver Commercial Company have been quietly at work developing the coal

Panoramic View Quatsino Sound, Showing the Narrows, West Rupert's Arms, with Queen Charlotte Sound and Mainland in Distant Background. This Photograph was taken from the Mountain Looking North and Overlooking Southeast Arm.

north of the west arm of Quatsino Sound. This company has opened up a number of coal seams, varying in thickness from 3 to 5 feet, extending over a track of 5,600 acres, which, according to the report of John J. Landale, C.E., M.E., "is entirely underlain with coal beds of excellent quality," and who furthermore states that the coal is "the best yet discovered on Vancouver Island," and who estimates the quantity contained in the area at over thirty-three million tons.

Dr. Dawson, in his report of a geological examination of the northern part of Vancouver Island, says that the length of the cretaceous area from east to

west is seven miles; its greatest probable width about two miles, and its approximate probable area 6,530 acres.

Mr. Harold W. Fairbanks, Ph.D., says in his report that the area of coal-bearing rocks extends for about eight miles along the north shore of the west arm.

Another geologist, Prof. Wm. P. Blake, M.E., referring to the coal in this area, states that the coal is long flame bituminous, yielding its gas readily and giving a bright clean coke. The coal is firm and remarkably free from iron and sulphur, and its ash is white and light; the different samples give 69.5 and 70 per cent. coke, 30 and 30.5 per cent. volatile and gaseous compound.

The Canadian Government Blue-book Geological Survey of Canada, March, 1899, contains the following on the Koskeemo (Quatsino) coal fields: "The approximate area, not including under-water estimate, about 5,630 acres. The coal is bituminous and of excellent quality. An analysis of the speciment made in the Laboratory of the Survey gives the following result: Hydroscopic water 1.05, volatile combustible matter 34.38, fixed carbon 54.01, ash 10.56 in 100 parts.

Excellent copper showings exist in the southeast arm of Quatsino Sound, which have been developed to some extent, and of which we gave a brief description in July, 1898. From 23 assays an average of $21.52 was obtained.

The difficulty in prospecting in a country so densely covered with vegetation as the northwest coast of Vancouver Island cannot be fully appreciated without being seen, but sufficient work has been done to demonstrate the mineral wealth of the country.

Quatsino Sound—West Arm.

The crying need of the district is a good road between Hardy Bay, on the east side, and Coal Harbour, on the west side of the Island, and a wharf at Hardy Bay. The Government has already spent some money on this road, and we do not know why the work was suspended. The Company now operating there was induced to do the work it is now doing on the assumption that the road would be completed. With such a road and wharf completed the country would settle up rapidly and taxes would come in fully many times over what are now paid begrudgingly.

The climate in the vicinity of Coal Harbour, Quatsino Sound, is mild and agreeable, and the rain-fall is not excessive.

Record of temperature and rainfall kept by Mr. Phillip Rowe, Coal Harbour, Quatsino Sound. Vancouver Island (never before published), is as follows:

1898.	RAINFALL. Inches.	TEMPERATURE. Max.	Average.	Min.
February	9.00		39	
January	8.50		38	
March	1.25	52		36
April	6.33	60		36
May	0.00	79		46
June	3.00		59	
July	0.50	87		44
August	0.25	86		50
September	2.12	76		47
October	4.25	56		38
November	12.50	52		30
December	10.75	44		30
Total 12 mos..	58.45			

1899.	RAINFALL. Inches.	TEMPERATURE. Max.	Average.	Min.
January	10.16	50		20
February	9.25	48		27
March	10.25	50		32
April	No record sent.			
May	" " "			
June	0.56	64		48
July	0.40	68		50
August	1.03	86		52
September	4.40	70		48
October	8.39	60		32
November	18.70	58		40
Total 9 mos..	63.15			

The photographs here reproduced, for which we are indebted to the courtesy of one of the officials of the West Vancouver Commercial Company, give, we think, a very fair idea of the character of the country on the northwest coast of Vancouver Island.

Cedar Trees on Property of the West Vancouver Commercial Co.—Quatsino Sound.

THE AURIFEROUS ALLUVIUM OF THE FRASER RIVER AND ITS TRIBUTARIES.

Specially contributed to the MINING RECORD.

By J. D. KENDALL, London, Eng.

I.—OUTLINE OF ECONOMIC HISTORY.

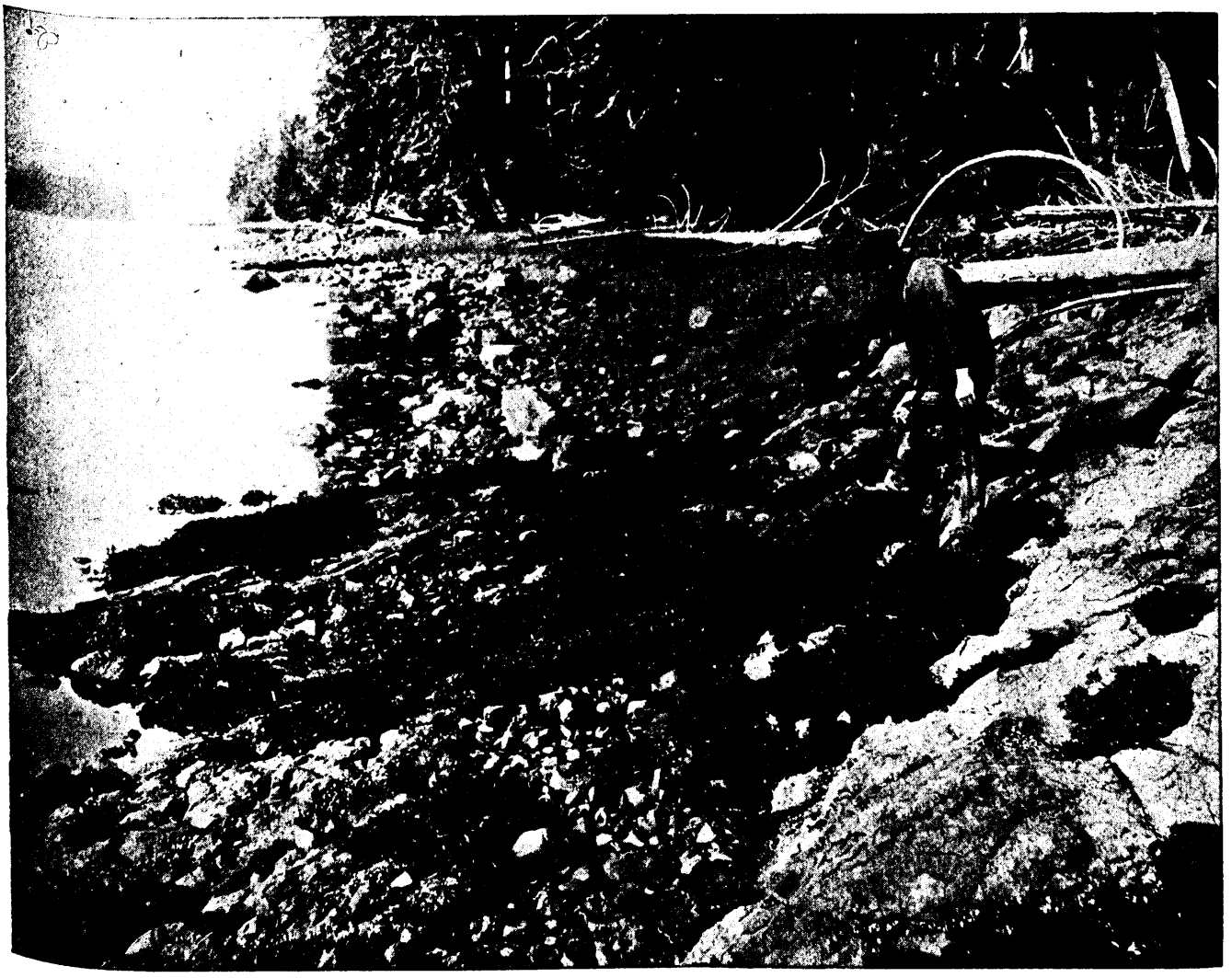
GOLD, in paying quantities, appears to have been first found within the watershed of the Fraser in the year 1857, on the Thompson River, near where it is joined by the Nicomen River. The first discovery of gold on the Fraser proper was at Hill Bar, near Yale, early in 1858. In the following year commenced that great rush of fortune-hunters towards British Columbia which formed such a conspicuous part of what is known in history as the "Fraser River Excitement," and which, in many respects, greatly resembled the recent mad rush to the Klondike. The difficulties and danger were perhaps equally great on the Fraser and the Yukon, while the reprehensible booming of interested parties was apparently quite as extravagant in the early days as that witnessed a year ago, when so many poor wretches were lured to their ruin by misrepresentations and exaggerations.

The first shipload of 450 adventurers left San Francisco on the 20th of April, 1858. To the 20th of June, Cornwallis estimated that 14,800 persons had embarked from San Francisco by steam and sail. At a later date it is said that over 20,000 persons had left San Francisco for the Fraser.

Growth of Spruce and Fir Trees—Quatsino Sound.

The first workings on the Lower Fraser appear to have taken place on the bars betwen the points now known as Hope and Yale, in March or the beginning of April, 1858. About the same time, or perhaps earlier, 150 men were reported to be working on the Fraser near Lytton. But the early summer floods, due to the melting snow, would soon prevent access to the bars until far into July. In the interval the eager crowd of gold-hunters probably occupied themselves partly in prospecting and working the gravel-benches above the level of flood water. Those rapidly assembling near Yale, most likely, would also be partly engaged in devising means of transport through the wild, forbidding canyon. Others again doubtless pushed on through the canyon in the hope of finding coarser gold in the higher stretches of the river, when the water should subside. Before the river fell,* thousands had left the country under the conviction that the water would never fall sufficiently.

In June, 1858, the miners on the lower part of the river distributed between Langley and the Canyon, 30 or 40 miles above Yale. (See Fig. 1.) By October, according to official estimates, a population of 10,000 was distributed along the river. The number between Cornish Bar and Yale, in November, was 4,000. Hope contained 400 more and Yale 1,300. In Hope district an ounce a day was said to be common wages, while some miners are reported to have earned two or more ounces per day for weeks together. During the season of 1858 most of those who had been rocking on the bars below Yale are said to have returned with $2,000 to $4,000 after paying expenses. Sluicing was also employed near Yale. The yield then occasionally rose, so it is said, to $25 per man per day. At Fountain, 100 miles further up the Fraser, miners were reported to be making from $8 to $100 per day. A notice of the extraordinary finds (boom-pans) then reported are purposely omitted.



Coal Outcropping on the Beach—West Arm, Quatsino Sound.

In June, 1858, about 100 miners were engaged on Robinson Bar, near Lillooet, and earned, it is said, from $80 to $90 per day each for the first four or five days, but afterwards their earnings became less.

In October, 1858, coarse gold was found in the benches at Yale, and the miners were with difficulty restrained from digging away the townsite.

The highest point reached on the Fraser, by pro-

*History of British Columbia, by H. H. Bancroft, to which the writer is indebted for much of the early historical information contained in this communication.

*The river reaches its highest about the 15th June.

fitable mining, in 1858 was near Fountain. Wing-damming was successfully tried at Mormon Bar that season, and the bench diggings in the same locality were said to be very rich, a party of eight persons, averaging two ounces a day to the hand with rockers, thirty feet above the highest water level. The ground there and for several hundred feet above the river was so rich that a ditch seven miles in length was built. In the first five days' washing after the ditch was completed, they are reported to have taken $1,198 out of the sluice. During this season work was also prosecuted on the Thompson, but less successfully than on the Fraser, and in later years much more erratically.

The returns for 1858, according to the Deputy Minister of Mines, were about $700,000.

In the spring of 1859 the restless, advancing prospectors, still looking for something better, explored the river as far north as Quesnelle. Then they turned up Quesnelle River. Towards the end of that season reports reached those on the Lower Fraser that the search for gold in the Quesnelle River had been successful. During the season fresh discoveries were being made at intervals on the lower parts of the Fraser, whilst work was continued on the profitable bars and benches already known.

In the spring of 1860, sixty miners were engaged on the Quesnelle River and were said to be making from $10 to $25 per day, occasionally turning up nuggets weighing from six to eight ounces.

After the disappointing returns of 1858 a period of depression and depopulation set in, although the number of miners actually employed in 1859 and 1860 was 33 and 46 per cent., respectively, greater than in 1858. The output of gold in 1859 was valued at $1,600,000. That of 1860 at about $2,228,000.

Renewed interest in the country was aroused in the fall of 1860 by reported discoveries in Cariboo—Harvey, Keithley, Grouse and Cunningham Creeks having been discovered. In January, 1861, a second "Excitement"—greater even than that of 1858—was created by the reports of the extraordinary richness of Antler Creek. About the end of May 1861 from 1,000 to 1,400 men—mostly engaged in road-making and transportation had found their way into the remote Cariboo country. Later in the season the number of miners alone is said to have been about 1,500. Individuals on Antler Creek are said to have made as much as $1,000 per day, while the yield of several sluice claims was 60 ounces a day to the man. During 1861 this Creek is said to have yielded over $10,000 a day. Grouse Creek was mined to a small ex-

Mouth of Tunnel, Nutzenuchtum Creek Coal Seam, Quatsino Sound.

tent in 1861, and then abandoned until 1864. The working of Harvey and Cunningham Creeks was postponed until about the same time.

The remarkably rich creeks known as Williams, Lowhee and Lightning were discovered in the summer and autumn of 1861. The gold output of Cariboo in that year was estimated by the Victoria daily press at $2,000,000.

In 1862 some claims on Williams Creek are said to have produced 100 ounces per day during the season, and the Cunningham claim turned out on several occasions—according to report—over 600 ounces per day. Four hundred miners were at work on Williams Creek in that year.

Below is an interesting table—partly from the report of the Minister of Mines for 1875—showing the value of the gold obtained from certain claims on Williams Creek, below the Canyon, up to the 1st of November, 1875. Also, the length of channel from which it was won and the yield per lineal foot of channel.

Claim.	Length of channel.	Value of gold produced.	Value per foot of channel.
Adams	100 feet	$ 50,000	$ 500
Steele	80 "	120,000	1,500
Diller	50 "	240,000	4,800
Cunningham	500 "	270,000	540
Burns	80 "	140,000	1,750
Canadian	120 "	180,000	1,500
Neversweat	120 "	100,000	833
Moffat	50 "	90,000	1,800
Tinkler	140 "	120,000	857
Watty	100 "	130,000	1,300
	1,340 "	$1,440,00	av'ge $1,075

Lightning Creek did not yield so largely as Williams Creek, but the output was greater whilst it lasted. The former creek was abandoned in 1864 owing to the difficulty of reaching the deep channel, but in 1870 sinking was successfully resumed. It was worked altogether for a length of about three miles. According to the report of the Minister of Mines for 1875 the claims on this creek up to the 1st of November in that year had produced the following amounts of gold :

Claims—	
Campbell and Whitehall	$200,000
Dutch and Siegel	130,000
Dunbar	30,000
Lightning	153,962
Discovery and Butcher	120,000
South Wales	141,531
Spruce	99,908
Point	136,625
Van Winkle	363,983
Victoria	451,642
Vancouver	274,190
Vulcan	56,955
Costello	20,476
	$2,179,272

From 1862 to 1874, inclusive, there is a lack of information as to the Cariboo output. For 1875, 1876, and 1877 it is given in the following table from the report of the Minister of Mines :

Claim—	1875.	1876.	1877.
Lightning	$513,527		
Burns	10,900		
Nelson	9,750	$137,306	$222,017
Cottonwood	5,000		
Swift River	3,300		
Williams	68,760		
Conklin Gulch	41,200		
		224,071	162,385
Stout Gulch	4,200		
Grouse	4,414		
Lowhee, Jack of Clubs, Mosquito, McArthur and Antler	26,400		
North and South Forks Quesnelle	40,040	82,460	
Keithley	25,515		20,370
Harvey and Snowshoe	13,162		
	$766,258	$443,837	$404,772

Year—		Year—	
1878	$380,535	1888	$250,377
1879	500,000	1889	217,892
1880	564,000	1890	158,150
1881	610,737	1891	185,050
1882	471,525	1892	194,020
1883	457,787	1893	202,000
1884	423,855	1894	192,350
1885	347,700	1895	282,400
1886	288,300	1896	384,050
1887	288,300	1896	384,050
1887	247,673	1897	325,000

The natural tendency of the richer discoveries in the Cariboo creks was to denude the main river of its workers, since which time operations on the Fraser have been of a very desultory character. The output since 1876 has been as follows :

Year—		Year—	
1876	$ 34,144	1887	$180,700
1877	12,000	1888	146,285
1878	14,000	1889	94,664
1879	73,900	1890	110,555
1880	45,600	1891	72,006
1881	99,652	1892	63,063
1882	95,520	1893	64,476
1883	122,640	1894	62,857
1884	184,034	1897	97,313
1885	168,200	1896	98,773
1886	196,700	1897	96,160

These tables will show better than many words the recent course of mining both in Cariboo and on the Fraser. The latter table probably includes some gold from Bridge River.

Since the exhaustion of the more accessible deposits —whether shallow or deep—the output has fallen away considerably and, as shown in the above tables, has for the last 25 years been, on the average, less than half a million dollars a year. The reasons for this decline are very evident, but cannot be given here without anticipating much that is to follow. The great difficulties and consequent cost of transportation are in some measure responsible. Although these were very appreciably reduced by the construction of the Canadain Pacific Railway, yet to many parts of the

area under consideration they are still a very serious hindrance to development.

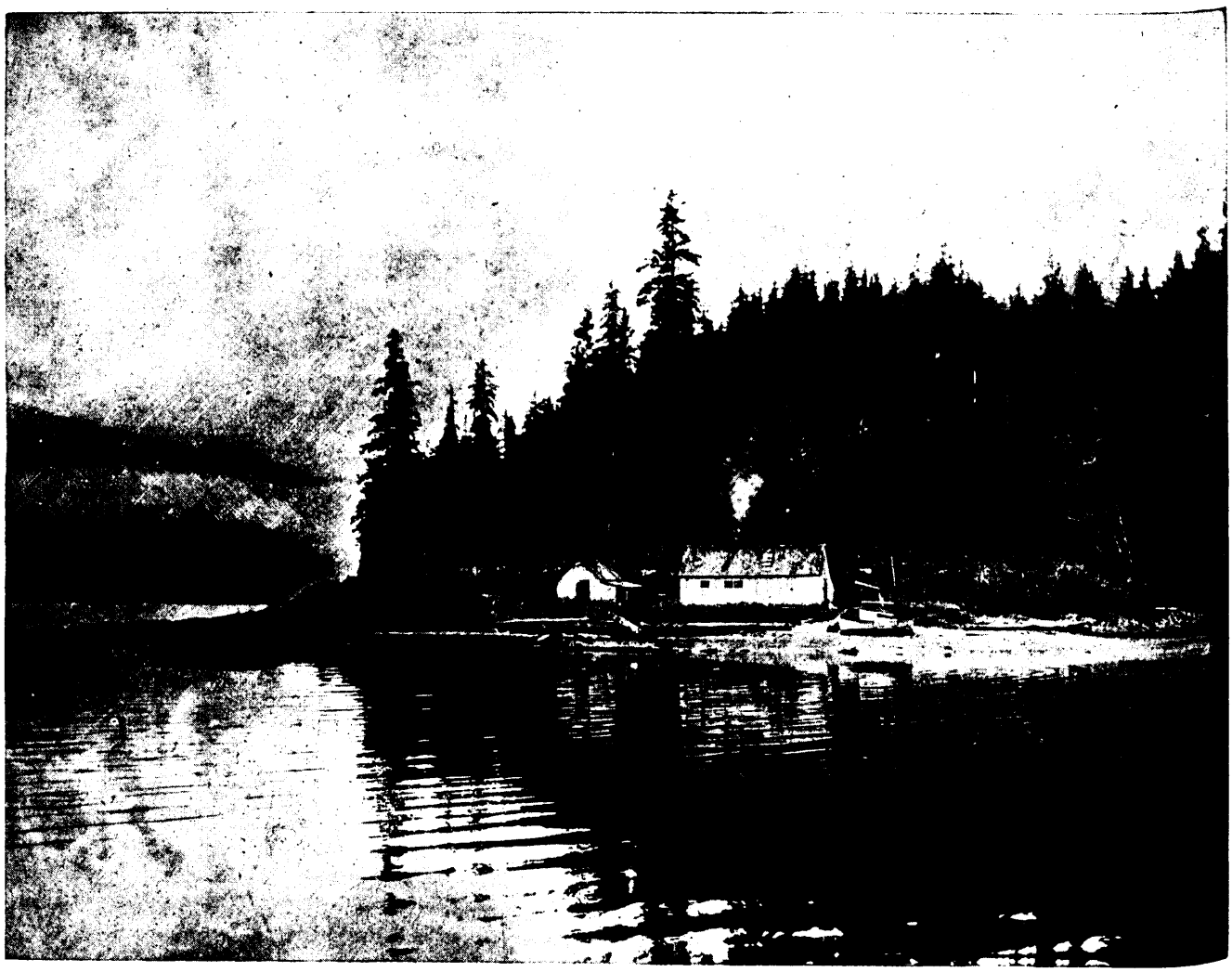
II.—HYDROGRAPHIC DATA.

The Fraser and its more important tributaries, as well as the enormous area drained by them are shown on most maps of B.C. The length of the main river between New Westminster and the Rockies is about 680 miles. Its more important branches have a united length of about 1,400 miles, and if all the creeks be included the length of the entire water-channel is probably not much short of 6,000 miles. The area of the watershed traversed by this extended ground-sluice is about 95,000 square miles. It lies largely within the area known as the "Dry Belt." Statistics relating to the fall of snow and rain are very meagre. At three points only has any systematic record been kept. The average annual fall of snow and rain at those stations is as under :

	Rainfall, inches.	Snowfall, inches.
Barkerville	21.03	170.4
Spence's Bridge	6.73	24.4
Nicola Lake	7.36	34.6

The western boundary of the drainage area is formed by the mountain-summits of the Coast Range, whilst part of the eastern boundary follows the crest of the Rockies. In both these areas the precipitation is very much higher than on the "Dry Belt." If we assume the average annual precipitation over the entire watershed as equal to 16 inches of rain the average outflow of the Fraser, making due allowance for evaporation, must be near 2,000,000 cubic feet per minute. During the early summer floods more than double this quantity flows off. But even that is probably small compared with what must have passed down the river in the days when the valley-gravels were formed.

The gradient of the river is variable. Between Lillooet and Lytton it has an average fall of about 5 feet per mile. From Lytton to Yale it falls 6 feet per mile—though it is doubtless much steeper than that in the Canyon. Between Hope and New Westminster the river is much wider than at any other part, and the inclination between those points is only 1.4 foot per mile. The Thompson, between Ashcroft and Lytton, falls 10 feet per mile. Below is given the inclination of the more important creeks in Cariboo, which yielded much coarser gold than the main river :



Coal Harbour, Quatsino Sound, with the West Vancouver Commercial Co's Boarding House in foreground.

Creek—	Inclination Feet per mile.
Williams (upper part of)	139
Williams (richest part of).....	227
Lightning	158
Harvey (lower part)	352
Keithley	235
Cunningham	200
Grouse	480
Antler	64

(To be Continued)

REPORT OF THE HALL MINES.

THE DIRECTORS' REPORT.

THE directors beg to submit to the shareholders the statement of accounts and balance sheet for the year ending 30th Sept., 1899, duly certified by the auditor, being the sixth balance sheet issued since the formation of the company.

This balance sheet shows a gross profit of £28,873 8s. 11d., which, with £1,245 13s. brought forward from 1898, makes a sum of £30,119 1s. 11d., from which has been deducted £640 8s. 6d., being 6 per cent. interest to 30th September on £24,560, which was the total subscription, of which amount £10,450 was subscribed by the seven directors, £8,760 by 43 other shareholders, and £5,350 by eight non-shareholders.

Having made this deduction there remains the sum of £29,479 13s. 5d., from which the Board propose that £6,367 16s. 7d. be written off for depreciation on building, plant and machinery: £10,277 5s. 5d. for cost of development and prospecting work prior to 1st October, 1898, and £3,470 7s. 10d., the amount expended on the True Blue and other copper claims, the results from which have failed to bear out the expectations of the company's mine superintendent, and which have therefore been abandoned.

After writing off these amounts and £335 14s. 2d., being the year's proportion of the cost of the debenture issue, there remains the sum of £9,027 9s. 5d. to carry forward.

In reviewing the business of the past year there are two points which it is essential should be borne in mind, as they have been most important factors in controlling and limiting the progress of development, viz.: first, the protracted length of the winter, and secondly, the disorganization of the mining labour market in British Columbia consequent upon the passing by the Provincial Government, of a law which restricts the hours of underground labour in a mine to eight instead of ten hours as formerly.

The rate of miners' wages in British Columbia having been already so high, mine owners were compelled, in self defence, to make a proportionate reduction for the eight hours' day, which the miners, backed by their union, have refused to accept, and the result has been that most of the mines have closed down, whilst those that have continued to work have done so under great difficulties, as the majority of the best miners have left the district.

In face of these labour troubles, work at both our mine and smelter has necessarily been of an intermittent character, and consequently it has been impossible to carry out the plans sketched out by Mr. Hardman as closely as the Board intended to have done, but as will be seen from the accounts the sum of £13,223 11s. 11d. has, nevertheless, been expended on account of development work in the past year. The mine superintendent's report shows that only a comparatively small amount of ore was taken from below the main tunnel No. 5, and further, that his anticipations of the output of the Kootenay and Bonanza were far from realized, the amount actually taken out having been restricted, in consequence of the protracted winter preventing surface mining, to 3,000 tons, which, however, materially aided in the carrying on of development work in other parts of the mine.

Having regard to these unforeseen contingencies, and especially the complications in the labour market, which have caused the closing of so many mines in the district, the Board are of opinion that it is a matter for congratulation that work has been kept going on, although in so restricted a measure at our mine, and that the result of the year's working, as a whole, is by no means unsatisfactory.

Lead smelting promises to be an important branch of the company's business in the near future, and the Board have therefore had alterations made in the large smelter which will admit of its being used for that purpose, as well as the smaller one if required, and when the mines in the district resume work it is confidently expected that a large and profitable smelting business in this direction will be done by our works.

The large furnace was in blast for 80 days and the small furnace 104 days on copper ore, while the latter was also in blast for 92 days on lead ore.

The wire tramway has continued to work satisfactorily, the average cost per ton of ore brought down having been 40 cents; the rope, however, will not last much longer, and a new one has therefore been ordered, which can be put in place when necessary while the large smelter is closed down.

The Board has not lost sight of the desirability of opening up the Koh-i-noor, Daylight and other claims on Toad Mountain, but without more capital at command that work must perforce remain in abeyance until the development of the Silver King to the 10th level has been accomplished.

The Nelson Coke and Gas Company having applied to purchase part of the company's land at Nelson, on which to erect their works, and having as an inducement offered to supply the company with cheaper coke, the Board decided to sell to them a block of land containing about two acres for $5,000, a portion of which sum the Board will, with the consent of the trustees for the debenture holders, invest in the purchase of adjoining land from the Canadian Pacific Railway Company which we now hold under lease from that company and have the option of buying at the rate of $500 per acre, within a prescribed period, and which, in the opinion of the Board, it is now desirable to acquire the freehold of as soon as practicable.

Mr. M. S. Davys, for private reasons, voluntarily resigned his office of mine superintendent at the end of September, and the Board have since appointed Captain J. R. Gifford, who was favourably recommended to them to fill his place.

An appendix is attached to the balance sheet, detailing the various items summarized in the accounts.

The auditor's report is hereto annexed.

In accordance with the Articles of Association, two of the directors, Mr. Flint Ramsay and Mr. Robert Ward, retire, and being eligible, offer themselves for re-election.

The auditor, Mr. Harry Barker, F.C.A., also retires, and offers himself for re-election.

GENERAL MANAGER'S REPORT.

Nelson, B.C., November 8th, 1899.

To the Board of Directors of The Hall Mines, Limited, London, E.C.

Dear Sirs:—When the affairs of the company were last under annual review a comprehensive scheme of development work for the mine was recommended by Mr. Hardman, and approved of. A portion of this work has been carried out during the past year, amounting in all to some 4,200 feet of drifting, sinking and raising. Part of this work was done on the Kootenay Bonanza, where, however, the efforts to find the north vein in place were unsuccessful; a large area of disturbed ground apparently exists at No. 4 tunnel level eastward of No. 6 cross-cut and to and beyond the Kootenay Bonanza shaft, and no body of ore of any consequence has been proved to exist in this area.

The work done towards exploiting the Silver King ore bodies has been more encouraging. The main vein, which from the 120-foot level upwards gave us the fine ore body that was stoped out in 1896-7, and which in one place was 30 to 40 feet in width, has been proved to continue down to the No. 7, or present lowest level, with well defined walls, though greatly reduced in width, being only some 3 and 5 feet across. The continuance of this vein in depth, however, is a most encouraging and important indication, and the opinion of experts is that it will eventually connect with ore bodies as large or larger than the one above. The western portion of the south vein appears to be making into a strong ore body, and will shortly be proved at the No. 7 level. The north vein west of the disturbed area above referred to has given a good yield of ore, and this is now being opened up to a greater depth, and a cross-cut run to prove it further west and north of what used to be the main ore body.

I may point out that while Mr. Davys in his report for 1898 placed the actual reserves of ore at 9,000 tons, and Mr. Hardman at some 6,000 tons, there have been mined and smelted about 30,000 tons of ore during the past year.

The development of the mine would have been much further advanced than it now is but for the difficulty in getting good miners during the last four months of the year. During that period sinking the main shaft had to be stopped, and but little drifting work was done at the lower levels owing to the available men being required to maintain the output of ore at as high a tonnage as possible.

The difficulty in obtaining men was brought about by an ill-considered Act that was rushed through the Provincial Parliament during the last two days of the last session. By this Act men were prohibited from working underground for more than eight hours in the twenty-four in metalliferous mines in British Columbia, although the hours for work underground in the coal mines and in railway and other tunnels were unrestricted. This legislation was unasked for and unwished for by the vast majority of the miners in the province. The mine owners and managers in the Nelson and Slocan districts declined to pay the same wages for eight hours as they previously paid for ten, while the men demanded the old wage for the shorter day, and stopped work in most of the mines in these districts on the 1st of June. At the Silver King mine we were able to keep steadily at work, though during June with a reduced force, which, however, gradually increased in numbers; but it was found impossible to get sufficient good machine-drill men to carry on development work while maintaining the output.. Owing to these labour troubles and the formation of miner's unions many of the best men have left the country, and it will be some time before we can expect the mines to have a full supply of competent labour.

At the end of September Mr. M. S. Davys left the service of the company, and about the middle of October Mr. J. R. Gifford took charge of the mine. Mr. Gifford has had much experience in developing large properties, and may be confidently relied upon to press on development work speedily and judiciously.

Efforts to secure other copper producing properties, as advised by Mr. Hardman, were continued during the first part of the past year, but the prospect work carried on has not proved successful. The True Blue, which yielded on the surface a most valuable ore for our smelting operations, carrying some 12 per cent. of copper, proved most disappointing with depth, and we only obtained some 41 tons from it, the cost of transportation being too high to justify mining more of the small quantity of ore in sight, which would have been of a much lower grade. Work on this property was stopped in the spring, and upon the advice of Mr. Hardman it has now been abandoned. The Lone Star group in East Kootenay, in which the company still owns a one-third interest, did not give any encouraging indications for the work done, and further work was therefore stopped. No copper mines have been developed in Nelson or the neighbouring districts during the past year, and for copper smelting we have still to depend almost entirely on the product of our own mine. It is, however, possible that with railway communication into the Boundary district, lying over 100 miles further west, that we may get a small supply for the smelter.

The aerial tramway has worked most satisfactorily during the past year, and the rope that was placed in position in May, 1898, is still in use and will probably do the work during the coming winter.

The smelting operations of the company during the year have been greatly interrupted for want of ore. A second trial run was made on lead ores, commencing on the 13th of April and lasting until the 17th of June. The run proved highly satisfactory, and contracts have been entered into with silver-lead producing mines, and steps taken to ensure continuous smelting of lead ores in at least one of our blast furnaces so soon as the Slocan mines resume work, but nearly all the producing mines of that district are now closed down, owing to the labour difficulties before referred to.

The outlook for a good supply of lead ores in the future is most encouraging and fully justifies the company taking up this branch of the smelting business. The Slocan district, which in 1894 only produced 2,568 tons of lead, produced in 1897 17,618 tons, and the estimate made at the beginning of this year, of the production for 1899, before labour troubles were anticipated, was 25,000 tons. More lead mines are yearly being discovered and more producers yearly coming into operation.

Within the last few weeks the Dominion Government have passed an order-in-council removing the duty on pig lead manufactured in Canada, but which has been shipped to the United States to be refined. The removal of this duty only affects at present some 3,000 tons of pig lead consumed annually in Canada, but it is hoped that the Canadian Government, by in-

creasing the duty on manufactures of lead, will give a further stimulus to the smelting industry in Canada.

The approval given by the Board to the erection of a mechanical roaster will enable the calcination of lead ores to be effected much more economically, and will lead to less handling and will reduce the cost of moving material to the furnaces. The excavation for this furnace has been completed and the bricks purchased, so that construction can be proceeded with directly the winter is over.

During the past year the officers and staff of the company have faithfully and ably performed their duties.

Yours faithfully,
(Signed) HENRY E. CROASDAILE,
General Manager.

SMELTER SUPERINTENDNT'S REPORT.

Nelson, B.C., November 9th, 1899.

I would be better pleased could I defer writing you on the smelting operation for the year till all returns for shipments are in, in order that I might present to you a complete statement, the accuracy of which could not be questioned. There is outstanding yet some of the reverberatory product from August and all the matte from September. I am therefore, obliged to submit to you a general statement of blast furnace work for twelve months, covering 184 days smelting, of which 80½ days were with the big furnace. In this, all values of products are figured on assays of daily samples. You are aware that I have always considered this inconclusive; but, taken as it stands, we show a gain of 296 ounces, with a silver loss of 42,828 ozs., and copper 98,000 lbs., equivalent to a slag carrying somewhat less than daily assays show.

Last year, each ton of ore cost us $3.66 to smelt; this year the cost is but $2.96, despite the fact that 55 per cent. of the time the small furnace was in service. The matte produced during the year has averaged 45.7 per cent. copper, 290 ozs. of silver, and 0.77 ozs. gold per ton, while the total furnace product, including metallic copper, averages 45.5 per cent. copper, 300 ozs. silver, and 1.65 ozs. gold per ton. Without prejudice, this may be regarded as good work, considering the fact that our charge, including flux, has averaged for the whole year but 2.25 per cent. of copper (wet assay), and has at times dropped as low as 1.75 per cent. copper.

Likewise, in lead smelting, the metallurgical results have been exceptionally good, all operations during the year accounting for fully 98 per cent. of the total values charged to the furnace.

In the reverberatory work you have a full report to January 31st, but little has been done since. During my absence, No. 1 furnace was lengthened and repaired. It was then found that the last brick bottom was extremely thin—in places but 2½ inches of the original 9 inches remaining. In other respects the bottom below was good. After 20 days' work smelting base metallic, with very poor results, we thought it advisable to tear out this bottom, finding therein, after very careful sampling, about 25 tons of copper, 20,000 ozs. of silver and 400 ozs. of gold, part of which had been accumulated during the last campaign.

(Signed) ROBERT R. HEDLEY,
Smelter Superintendent.

Nelson, B.C., October 31st, 1899.

I am submitting to-day a statement covering lead-smelting operations for 48½ days' actual work during September and October. The result, as shown by this statement, should be very gratifying to the Board, in spite of the low tonnage.

The extremely low tonnage is due directly to the physical character of the charge being excessively fine. I have done all in my power to improve this, using 25 per cent. more blast pressure than I ever used before, or ever heard of being used in lead smelting. The result has been a very large proportion of flue-dust, which, however, is shown as recovered. This is unfortunate, as it mars an otherwise very creditable campaign. Low tonnage means increased cost both in labour and fuel.

During the latter days of smelting we handled a very large quantity of foul slag and barrings, reducing ore.

The smelting cost figured on 1,470 tons of actual ore has been as follows:—

	Per Ton.
Fuel	1.96
Flux	.74
Calcination	1.78
All labour, etc.	3.73
	$8.21

Adding 150 tons matte and 350 tons other flux, making 1,970 tons charge, the cost is $6.12 per ton.

Closing on September work the cost was 46 cents lower per ton of ore figuring thus:—

Fuel	1.79
Flux	.75
Calcination	1.48
All labour, etc.	3.72
	$7.74

The shortage in copper will not, I hope, prove to be actual. There is an indefinite quantity tied up in the crust which forms over the crucible and which will not be removed at present.

(Signed) ROBERT R. HEDLEY,
Smelter Superintendent.

MINE SUPERINTENDENT'S REPORT.

Nelson, B.C., October 3rd, 1899.

I herewith beg to submit my report of the progress of work at the company's mine for the year ending September 30th, 1899.

Mine Development Work.—This during the past year consists of: Drifting, 3,039 feet; sinking, 358 feet 6 inches; raising 917 feet 6 inches. Total, 4,215 feet.

The attached schedules describe the several places where this class of work has been carried on, showing number of feet. Of this work the most important has proved to be that at No. 5 tunnel and the levels underlying No. 5 tunnel and reached by way of the main shaft, particularly, in my opinion, the west drift on No. 6 level south vein, connecting with winze "K" ore body, which body is the faulted western portion of the south vein, and found on the south side of the dyke. In drifting this level, on reaching the dyke ore seams were met on both sides of the dyke of between three and four feet in width, and showing more copper ore than has been previously found associated with this vein. Present appearances lead one to believe these to be the upper portion of an ore body, and taking the course and dip of these seams with that of the winze "K" ore body and the dip and course of the dyke into consideration, there should be a larger ore body found in the No. 1 cross-cut No. 7 level, which

is at present being driven towards this body. Apart from this the No. 6 levels on main and south veins have not proved any extensive ore bodies or high values, the veins being narrower and lower in values. At the eastern end of the south vein, and connecting with winze "L," a body of low-grade vein matter was passed through for some 15 feet, and, when connection was made with winze "L," drifts were started east and west on the footwall of vein stuff, expecting to catch the ore chute in No. 5 tunnel above this point. This ore chute at the present time has not been met with, and I am of opinion that the true footwall of the vein has not yet been reached, and that a cross-cut driven to the north from the western drift will yet prove the existence of this body.

No. 5 Tunnel.—This has been driven ahead following strike of north vein after passing through dykes east of winze "L". A small ore seam in the vein has been followed the entire distance, and at present shows stronger in face of tunnel. This ground should, however, be further prospected by cross-cutting to both the north and south.

East drift in north vein at No. 4 level was driven on the vein connecting with raise "X." A good ore body was proved by this, and the ore still shows in face of drift.

Above No. 4 Tunnel.—In connecting raise "X" from No. 6 cross-cut with No. 1 tunnel, after passing through No. 3 tunnel level and the course of the raise southerly to connect No. 1 tunnel, a seam of ore of four feet in width, showing a good deal of gray and peacock copper, was met with. No prospecting of this was, however, done, as the raise was needed for passing down ore when completed. This ore chute may prove of some importance when further prospected.

Kootenay Bonanza.—A raise was put up from the 130-foot level cross-cut, connecting with the 50-foot level, from which point two raises were put through to the surface connecting the north and south vein outcrops, from which surface stoping has been carried on and ore passed through to No. 4 tunnel level. The north vein was found on opening out the stope to be faulted by two dykes and ore was stoped to point where dyke cut the vein out. On the south vein stoping was carried downward from surface, and the vein was found to have a northerly dip in place of to the south as found elsewhere in the mine; this has been followed and at the present time the pay chute appears to have also an easterly dip, going under the low-grade surface croppings immediately above. Further prospecting by following these pay chutes will alone determine extent and values of these deposits, as dips, courses, etc., are at present unreliable.

During the past year the total amount of ore mined and shipped to the ore bins consist of 32,700 tons, made as follows: Main and north veins, 24,835 tons; south vein, 4,669 tons; Kootenay Bonanza, 3,196 tons. Total, 32,700 tons.

On the accompanying tracing of mine workings, showing position of the several stopes, I have shown tonnage by the stopes and average assay values obtained from daily sampling, and on the sectional plan is also shown the area of caved ground which occurred in the earlier part of the spring, a block of ground lying between the big stope of the main vein and the hanging wall vein having broken away, extending from the surface to No. 3 level, caused, no doubt, chiefly through action of the frost and water slacking the lime contained in the country rock. This caved ground will have to be filled with waste rock, which would in any case have had to be done; the ore has all been worked out from this portion of the mine with the exception of some of the hanging wall vein which can be taken out after the cave is filled, and when this is worked out this portion of the mine will be closed up and abandoned as worked out.

Ore Reserves.—From present positions of the workings the estimated tonnage available for stoping is as follows: Above No. 4 tunnel, 9,000 tons; between No. 5 and 4 tunnels, 5,700 tons; below No. 5 tunnel, 4,000 tons. Total, 18,700 tons.

The estimate of ore reserves below No. 5 tunnel includes only the ore body at winze "K," which is at the present time the only block sufficiently opened out to obtain measurements from. When the south vein has been more fully explored at the No. 6 level, so as to obtain more reliable data, a reserve of some value should be located.

Future Development.—In outlining this I consider the most important ore bodies are to be met below the No. 5 tunnel, and would suggest that development be allowed to be continuously carried along both in the nature of prospecting and actual development work. The main shaft should be sunk to a depth of 300 feet further, cutting out the several stations at every 100 feet, when cross-cutting to the vein could be carried along. During progress of this work the different levels at No. 7 level would have been driven and the vein explored at these points, giving further information as to strike, dips, values, etc., of ore chutes. No. 5 tunnel should be further prospected by driving ahead on present ore seams and also cross-cutting both to the north and south.

No. 6 Level.—Ore body below No. 5 tunnel at foot of winze "L" should be located and drift east under No. 5 tunnel carried easterly into north vein.

During the past summer much delay in carrying on certain important works has occurred through scarcity of capable miners, and the compulsory shortening of the working hours by legislation to that effect.

Yours faithfully,

(Signed) M. S. DAVYS,
Mine Superintendent.

THE AUDITOR'S REPORT.

8 Old Jewry, London, E.C.,
28th November, 1899.

To the Members of The Hall Mines, Limited, London.

I have examined the accounts of the Hall Mines, Limited, for the year ending the 30th September, 1899, and find the profit and loss account and the balance sheet annexed correct.

The profit and loss account shows the financial result of the company's operations during the year ending the 30th September, 1899, viz., a profit of £28,873 8s. 11d., which is subject to depreciation and other deductions stated on the balance sheet. This result is arrived at after bringing to account every item of expenditure fairly chargeable against the year's income, as shown by the accounts received from British Columbia.

The balance sheet annexed sets out the position of the company at the end of the year, and shows a surplus of assets of £9,027 9s. 5d.

The amount written off the profit for depreciation of buildings, plant and machinery, is in accordance with the computation of the general manager in Nelson.

The books of accounts are well kept.

HARRY BARKER, F.C.A.,
Auditor.

SMELTING FOR COPPER MATTE DURING YEAR

OCTOBER 1st, 1898, to SEPTEMBER 30th, 1899.

CHARGED.	Tons.	Contents by Assay. Ozs. Ag.	Ozs. Au.	Lbs. Cu.
Silver King ore..	29666.2125	477615.62		1590091
Custom ore... ..	10978305	22639.23	752.814	46453
Trail matte	71.325	2718.40	1188.090	55356
By-products	1034.2525	29863.55	477.143	168563
	31869.6205	532836.80	214.047	1590001
Limestone	3650.5325			
Quick lime	35.25			
Iron ore..	7.12			
	35562.523			

PRODUCED.				
Matte	17.60.8565	487471.24	1646.584	1518775
Metallic	106.3455	43945.80	1543.840	93465
Bot'm No. furnace	.25	546.00	6.110	1560
	1870.4520	531963.05	3186.356	1613800
Less matte rech'g'd	232.2235	41954.28	482.528	121735
	1638.2285	490008.76	2714.006	1492065

Content of Silver King ore.... ..	16.1		2.22% Cu.
Content of all ore, etc	16.75	0.075	2.49% Cu.
Yield of all ore, etc....	15.37	0.85	2.34% Cu.

Cost per ton.	Ore, Etc.	Charge.
Flux..	0.196	0.175
Fuel..	1.445	1.296
Labour, etc...	1.322	1.185
	$2.963	2.656

(Signed) ROBERT R. HEDLEY.

LEAD SMELTING DURING SEPTEMBER AND OCTOBER, 1899. IN BLAST 48½ DAYS.

CHARGED.	Tons.	Contents by Assay. Oz. Ag.	Ozs. Au.	Lbs. Pp.	Lbs. Cu.
Silver King ore	307.685	4400.10			12,832
Dandy ore..	59.751	642.73			2,078
Calcines	540.685	9586.32	615.171	242.133	9.012
Carbonates	399.745	12160.93	1139.799	238.518	
Galena	109.429	8324.22		143.286	
Idaho Tailings..	51.105	784.88			
Enterprise	52.645	4753.44		13.359	
Matte	99.099	6599.82	8.684	23.053	16.228
Barrings from shaft	65.112	1790.91	65.712	24.617	1.045
Bullion and scrap	14.250	3080.75	27.423	28.287	
	*1699.506	52106.10	1847.789	713.853	41.195
PRODUCED.					
Lead bullion	318.101	39468.33	1625.017	632.665	
Matte..	146.048	6435.63	11.902	33.084	24.152
Flue dust	75.	2345.50	88.1	17.400	1.500
Lead in crucible	5	750.25	25	10.000	
Barrings from shaft	60.	1690	80	25.000	1.209
		50599.71	1830.019	718.148	26.852

Fifty-one tons matte included in calcined ore, making 1,470 tons ore, 150 tons matte, 70 tons by-products. Total *1,699 tons. 350 tons flux.

(Signed) ROBERT R. HEDLEY.

THE HALL MINES, LIMITED.

BALANCE SHEET, 30TH SEPTEMBER, 1899.

DR. CAPITAL AND LIABILITIES.

To SHARE CAPITAL—

AUTHORIZED.

	£ s. d.	£ s. d.
50,000 Cumulative Preference Shares of £1 each	50,000 0 0	
300,000 Ordinary Shares of £ each	300,000 0 0	
350,000 Shares	£350,000 0 0	

ISSUED.

25,000 Cumulative Preference Shares of £1 each, called up	25,000 0 0	
175,000 Ordinary Shares, issued as fully paid	175,000 0 0	
75,000 do of £1 each, called up	75,000 0 0	
275,000 Shares	275,000 0 0	
Deduct calls in arrear	2 10 0	
		274,997 10 0

To DEBENTURE LOAN—

Issue of £50,000 Six per cent. First Mortgage Debentures, secured by a Mortgage on the Company's mines, lands, buildings, plant, machinery, etc., to be paid off at 105 per cent. (by the operation of a Redemption Fund) within a period of 13 years from the 31st March, 1899, or at ony earlier time after the 31st March, 1902, at the option of the Company on six months, notice.

SUBSCRIBED AND ALLOTTED.	£ s. d.	£ s. d.	
66 Debentures of £5 each	330 0 0		
138 Debentures of £10 each	1,380 0 0		
69 Debentures of £50 each	3,450 0 0		
194 Debentures of £100 each	19,400 0 0		
		24,560 0 0	
TO CREDITORS—			
BANK—Overdrafts and special advances for purchase of ore (secured by floating charge on all the ores and other products owned by the Company)	32,627 18 5		
Unclaimed dividends	59 13 10		
Sundry Creditors	1,602 17 10		
		34.290 10 1	
TO PROFIT AND LOSS ACCOUNT—			
Balance at 30th September, 1898	1,245 13 0		
Add Profit for the year ending 30th September, 1899, as per account	28,873 8 11		
DEDUCT.			
Interest on 6 per cent. Mortgage Debentures to 30th September, 1899	£640 8 6		
Amount written off for cost of development work in "Silver King" mine during the year ending 30th September, 1898	10,277 5 5		
Amount expended on the "True Blue" and other claims since abandoned	3,470 7 10		
Amount written off for one-fifth part of expenses of issue of debentures	335 14 2		
Depreciation and maintenance written off buildings, plant and machinery, tramway, smelter and office furniture	6,367 16 7		
	21,091 12 6		
		9,027 9 5	
TO CONTINGENT LIABILITIES—			
Preference dividend for year ending 30th September, 1899	£1,750 0 0		
Directors' Fees	126 17 6		
	£1,876 17 6		£342,875 9 6

CR. PROPERTY AND ASSETS.			
BY MINES COST ACCOUNT—			
As at September 1898	220,024 12 11		
ADD			
Expenditure during the year ending 30th September, 1899:—			
Assessment work, etc., on old claims	£118 8 1		
Cost of prospecting and developing new claims	1,970 9 8		
Cost of development work in the "Silver King" mine	13,223 11 11		
	15,312 9 8		
	235,337 2 7		
DEDUCT.			
Cost of development work in "Silver King" mine to 30th Sept., written off.	10,277 5 5		
Expenditure on "True Blue" and other mineral claims written off	3,470 7 10		
	13,747 13 3		
		13,747 13 3	
BY BUILDINGS PLANT AND MACHINERY—			
As at 30th September, 1898	18,234 0 6		
Additions during year ending 30th September, 1899	z,507 1 0		
	20,741 1 6		
Deduct depreciation written off	1,440 6 7		
		19,300 14 11	
BY SMELTER ACCOUNT—			
As at 30th September, 1898	35,789 6 8		
Expenditure during the year ending 30th September, 1899	6,400 8 6		
	42,189 15 2		
Deduct depreciation and maintenance written off	3,457 19 2		
	38,731 16 0		
BY LANDS PURCHASED—			
As at 30th September, 1898	1,873 14 11		
Purchase of timber lands during the year ending 30th September, 1889	2,236 17 9		
	4.110 12 8		
Deduct amount written off for timber cut during the year	875 0 9		
		3,235 11 11	
BY OFFICE FURNITURE IN LONDON—			
As at 30th September, 1898	185 4 0		
Deduct depreciation written off	18 10 5		
		166 13 7	
BY STOCK OF SUPPLIES ON HAND—			
Per inventories received from British Columbia		12,133 10 6	
BY ORE, METALLURGICAL PRODUCTS AND FLUXES IN STOCK—			
Per valuation of Smelter Superintendent in British Columbia		26,463 7 5	
BY OPEN SHIPMENTS of copper, matte and lead bullion		2,469 2 9	

	£ s. d.	£ s. d.
By Debtors—		
Government of Canada for balance of bounty on ore smelted to 30th June, 1899	3,431 17 10	
Sundry debtors	1,000 12 7	
		4,432 10 5
By Expenses of Issue of Debentures (to be written off in five years)	1,678 10 9	
Deduct one fifth part written off	335 14 2	
By Cash at bankers and in hand		200 0 0
		£342,875 9 6

I have examined the above Balance Sheet with the accounts and vouchers of the Company in London and the accounts received from British Columbia, and in my opinion, the Balance Sheet is a full and fair Balance Sheet, properly drawn up so as to exhibit a true and correct view of the Company's affairs as shown by the books of the Company.

8, Old Jewry, London, E.C., Nov. 28, 1899.

HARRY BARKER, Chartered Accountant. } Auditor.

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING 30th SEPTEMBER, 1899.

	£ s. d.	£ s. d.
To Expenditure in British Columbia—		
At the mine	30,937 8 8	
At the aerial tramway—		
Tramming contract and sundry expenses	2,709 14 1	
At the smelter	35,092 3 4	
At the Nelson office	2,553 19 0	
Insurance	506 7 2	
Law charges and claims for injuries, settled	767 3 6	
Interest	2,052 12 11	
Taxes	590 18 5	
		75,210 7 1
To expenditure in London		3,269 8 7
Hardman's report on the mine, 1898		302 8 0
Loss on exchange		113 16 5
Balance, being profit for the year carried to balance sheet		28,873 8 11
		£107,769 9 0

	£ s. d.
By production	101,645 4 2
Government bounty on ore smelted to 30th June, 1899	3,821 13 7
Sundry profits, including rents and assay charges received	2,229 17 6
Transfer fees	72 13 0
	£107,769 9 0

MINES COST ACCOUNT AT 30th SEPTEMBER, 1899,

Comprises the following Expenditure (omitting all expenditure written off):—

	$ c.	£ s. d.	£ s. d.
Charges prior to 30th September, 1898—			
Purchase price under terms of agreement		215,000 0 0	
Deduct value of tools and ore included therein		9,262 6 2	
		205,737 13 10	
Add expenditure on the following claims subsequently taken up—			
Kohinoor	124 00		
Daylight	79 13		
Jessie	1,005 00		
Lakeside	573 50		
Bid	1,299 00		
Britannia	550 00		
J. M. B.	422 27		
Iron Hand	1,500 00		
Grand	552 50		
Surveys, etc	446 00		
	6,551 40		
And on the following works—			
Grohman Creek Water Works	372 15		
New Waggon Road	699 59		
$525.40 at $4.83 : $7,097.44 at 4.86	$7,623 14	£1,569 4 4	
Cost of Prospecting and Developing New Claims—			
"Big 3"	$1,560 00		
"Big 4"	1,093 25		
Fort Steele Claims	853 10		
	$3,506 35	£721 9 5	
Assessment Work, etc., on Old Claims	$1,064 75	219 1 8	
			208,247 9 3

ADD EXPENDITURE DURING THE YEAR ENDING 30TH SEPTEMBER, 1899—		£ s. d.	£ s. d.
Assessment Work, etc., on Old Claims	$575 44	£118 8 1	
Cost of development work in Silver King Mine as detailed on next page	$64,266.68	£13,223 11 11	
			13,342 0 0
			£221,589 9 3

BUILDINGS AND MACHINERY—

Additions during the Year ending 30th September, 1899:

	Wages.	Supplies.	Totals.
Additional Compressor House	$ 50 75	$ 49 52	$ 100 27
Ore Bins	1,405 85	219 66	1,625 41
Unloading Station and Tramway	268 06	255 62	523 67
Coal Bins and Unloading Station	159 75	107 12	266 87
Stable under " "	.....	40 11	40 11
Dandy Tramway	395 49	8 92	344 41
Cribbing Dump	408 50	30 89	439 38
Flume from No. 5 Tun. to end of Ore Bins	79 50	32 13	111 16
Give Out Creek Flume	352 60	2 25	354 85
Improvements to Cottages and Dwellings	183 62	69 03	252 65
" Assay Office & Weigh Office	9 40	14 88	24 28
" Engine Room and Magazine	108 80	2 86	111 66
General Construction	675 20	842 77	1,517 97
One 8¼ in. x 10 in. Single Drum Hoist	.....	1,030 00	1,030 00
One 7 in. x 3½ in. Cameron Sinking Pump	.....	328 91	328 91
One No. 9 Bolt Cutter	.....	178 70	178 70
One Ingersoll-Sergeant Drill	.....	261 72	261 72
Pipe and Fittings	.....	641 88	641 88
Rails and Chairs	.....	446 24	446 25
Steel Rope	.....	80 89	80 89
Smoke Stack, Shaft Bars and Sundries	.....	98 31	98 31
Gallows Frame, Cages, &c., for Main Shaft	165 60	45 21	210 71
Ore Cars	171 32	849 00	1,020 32
Coal Cars	28 22	.....	38 22
Tools	.....	1,303 90	1,303 90
Sundry Plant	315 98	1,879 11	2,185 09
	$4,728 53	$8,819 53	$13,548 06
Deduct Tools discarded	.....	1,363 80	1,363 80
£2,507 1 0	$4,728 53	$7,455 72	$12,184 26

AERIAL TRAMWAY—

Expenditure during tpe Year ending 30th September, 1899:

	Wages.	Supplies:	Totals.
Automatic Loaders and Sundry other Improvements	$ 466 80	$2,004 38	$2,471 18
Deduct Sales of Gld Cable	.....	.....	344 60
£437 11 3			$2,126 58

SMELTER—

Expenditure during the year ending 30th September, 1899:

	Wages.	Supplies.	Totals.
Grohman Creek Water Power	$ 194 75	$ 106 31	$ 301 06
Sand Creek Flume and Dam	174 35	2,251 78	1,426 13
Slag Flumes	140 50	218 51	259 01
Cordwood Flume	91 80	349 73	441 53
Cordwood Tramway	83 70	.....	83 70
Coal Tramway	9 10	161 43	170 73
Coal Bins	99 80	82 81	182 61
Limerock Bins	195 00	.....	195 00
Ore Bins	47 50	60 08	107 58
Roasting Stalls	203 98	244 02	447 97
Mechanical Roaster (preliminary expenses)	100 05	352 00	452 05
Matter Sheds	330 11	90 92	421 03
Superintendent's House, Boarding House, Office, and General Construction	45 40	44 00	89 40
Blast Furnace	1,483 46	4,839 97	6,323 43
Reverberatory and Calciner	1,215 69	3,076 69	4,392 38
Engine Room	1,095 30	4,291 31	5,387 11
Elevator	737 60	3,631 33	4,378 98
Sampling Mill	174 08	692 93	867 01
Assay Office	76 72	355 41	432 31
Ore Bins and Gravity Tramway	104 24	139 88	244 23
Railway Spur	1,209 82	354 42	1 564 24
Lime Kiln	19 48	.....	19 48
Sundry Smelter Plant	1,533 39	1,395 88	2,825 27
£6,400 8 6	$9,366 39	$21,739 67	$31,106 06

EXPENDITURE IN BRITISH COLUMBIA.

MINING COST—	Wages.	Supplies.	Totals
General—Superintendent, Foremen and Clerical Staff, Weigh Office, Assay Office, Powdermen, Steelmen and General Expenses	$13,799 64	$ 2,979 34	$16,778 88
Odd Jobs—Track-Laying, Carpentering, Clearing and Sunday Labour	4,468 72	123 11	4,591 83
Maintenance of Bonds, Buildings and Plant	1,466 20	94 30	1,560 50
Machinery Running and Blacksmithing	10,776 53	21,375 83	32,252 35
Stoping and Timbering and Handling Ore	79,440 38	12,842 96	82,283 34
Crushing and Sorting	2,729 73	159 18	2,888 92
£35,092 3 4	$112,781 20	$37,574 72	$150,355 92

SMELTING COST—			
Tramming from Lower Terminal of Aerial Railway	5,514 73	45 62	4,560 15
General—Superintendent, Foreman, Storekeeper, Clerks, Sundry Labour and General Expenses	12,427 94	639 25	13,067 19
Engine room	6,649 77	1,010 12	15,461 22
" " fuel	.....	7,981 33	
Sample mill and crusher	6,683 23	1,322 73	8,005 96
Assay office	2,764 70	1,850 57	6,020 37
" fuel		405 70	
Blast furnace	27,799 92	2,119 06	87,088 00
" fuel	.....	46,791 92	
" finxes	.....	10,377 10	
Calciner and reverberatory	17,531 11	1,626 21	35,164 45
" " fuel	.....	15,324 98	
" " fluxes	.....	682 15	
£35,092 3 4	$80,371 40	$90,176 54	$170,547 94

£13,223 11 11	$58,766 72	$5,499 94	$64,266 66

NELSON OFFICE.	$ c.
General manager and clerical staff	8,145 00
Office, travelling and general expenses	4,267 10
£2,553 19 0	$12,412 19

EXPENDITURE IN LONDON.	£ s. d.
Directors' fees	1,273 2 6
Consulting engineer's fee	120 6 10
Rent, salaries and travelling expenses	1,349 1 1
Printing and stationery	137 0 10
Telegrams, postage and general expenses	230 15 11
Law charges	106 11 5
Auditor's fees	52 10 0
	£3,269 8 7

ORE, METALLURGICAL PRODUCTS AND FLUXES—

On hand 30th September, 1899—

	$ c.	$ c.
Ore—Silver King	14,018 07	
Ore—Purchased	22,559 81	
Ore—Purchased (Calcined)	16,292 08	
		52,869 96
Matte	10,851 39	
Lead bullion	5,732 12	
Metallic copper, furnace bottoms, etc	51,507 22	
Flue dust	4,044 22	
		72,134 89
Fluxes		3,697 14
£26,463 7 5		$128,611 99

VERBATIM EVIDENCE IN THE IRON MASK-CENTRE STAR LITIGATION.

HAVING been requested by many of our readers throughout the Province to publish in these columns a verbatim report of the evidence in the Iron Mask-Centre Star litigation, Mr. H. F. Evans, our Rossland correspondent, was enabled through the kindness of Mr. J. B. Hastings to carry out our instructions to copy the official report of the proceedings and evidence taken, and which are in consequence enabled to publish in serial form.

(Continuation of Counsel's Argument, from last month's issue.)

The Court—All I have to decided now—I don't know what view they might have taken of any amendments in the pleadings or anything else, if that took place—all I have to decided now is whether your veiw is right or not. That is, you say the Full Court decided the point. Now, I would like to read that judgment for myself. I keep saying I wonder they never decided the point at issue, and you were answering me —that is, in Mr. Davis' argument—that it had been done, and the two points covered. Now, I would like to look at it, and I don't think you would gain anything by going any further to-night. It is not that I am unwilling to sit. I would like to see Barringer and Adams.

Mr. Davis—I wish to reply to my friend's argument. Shall I reply now?

The Court—Oh, well; go on.

Mr. Davis—Shall I go on now. I thought your Lordship wanted to adjourn.

The Court—I would rather have the thing finished consecutively. I do not understand you, at all.

Mr. Davis—I will only be a moment.

The Court—The main point in the dispute between you just now is about the judgment and the effect of it.

Mr. Davis—Yes; because my learned friend has not argued (although he stated during my argument) that the Full Court had not jurisdiction.

The Court—In a matter of this kind, I would be only too glad to hear all of the argument at this time. I ought to get all the enlightenment I can from counsel.

Mr. Davis—He has not argued that, so I will not refer to it again. All he has said is that the Full Court has considered all the facts and given a judgment on these facts which makes the question re-subjudicated, and your Lordship is not in a position now to make any order permitting work to be done unless there are new facts established. Now, that is his position.

The Court—Yes; that is his position.

Mr. Davis—Now, what I say is this, that what the Full Court decided upon was in view of the fact that your Lordship had a more intimate knowledge of all these facts.

The Court—They don't say so, though.

Mr. Davis—Than any one else; we will leave the matter to you at the trial.

The Court—They ought to have said so.

Mr. Davis—My learned friend argues that, "at the trial"—necessarily means after all of the evidence has gone in. Now, it does not; they left that to your Lordship's discretion.

The Court—I think so, but I want to see it.

Mr. Bodwell—That is one point I intended to refer to and I missed it. As I will have no reply I would like to state it.

The Court—Yes; go on.

Mr. Bodwell—At the time the Full Court gave that judgment, the date of the trial had not been fixed; no order for trial had been made, and I think my friend is going beyond the record when he says that it was definitely decided that your Lordship would try the case, because that was not fixed until some time afterwards.

Mr. Davis—It was fixed, and the Chief Justice told us before the special sitting of the Full Court was called—my learned friend will remember when I recall it to his attention—I applied for a postponement of the trial, on the ground that we had to have this appeal heard first. My learned friend and Mr. Bodwell went before the Chief Justice to request a postponement, and we argued it in his private chamber, and he told us at that time that your Lordship was going to take that trial, and I think my learned friend will remember it now, when I call it to his memory, and that was before the sitting of the Full Court. He said at the same time he would have the sitting of the Full Court called for a certain——

The Court—I happened to know both of them said they would not take it up; that is not conclusive.

Mr. Bodwell—What I would like to say to your Lordship is, I don't recollect the circumstances, but that does not make any difference.

The Court—No.

Mr. Bodwell—What I was going to say was, that the judgment of the Full Court does not go on in that way, but that the Judge at the trial, from the peculair facilities which he would have at the trial, and from hearing all these people would be in a better position, and it would not matter in that view whether it was your Lordship or anybody else sitting in the case. That is the point.

Mr. Davis—The point I have made, and am making, is simply this: We have a reference by the Full Court; the matter is referred to the Judge at the trial, it does not matter whether the reasons appear or not, they referred it to that Judge. I have a right to urge—I think I am correct in it, too—that the reasons which influenced them in making such an order as they did was because they knew your Lordship was going to take that trial. They knew that at that time. It does not say it is true—it was not necessary that they should say it, but whether it was so or not, that is the effect of the wording.

The Court—I was very anxious to get rid of it; that is, from what I know.

Mr. Davis—Yes, I can easily understand it. It was a very long case.

The Court—No; it is the responsibility.

Mr. Davis—Your Lordship was in a great deal better position than anybody else, because the matter came before your Lordship. Now, as to what they have done—it really is not of very much importance, whether they knew you were going to take the trial or not—but I think that is the reason they left it in the shape they did. Whether they did or not is immaterial.

The Court—What I intend to do is to read the language as it is stated there, and as it is printed, and no other way. The judgment of the Judge is supposed to be—well, open to the general public, and the construction given by the general public, even by illiter-

ate men, sometimes is the proper construction. They ought to be such as an illiterate man could construe.

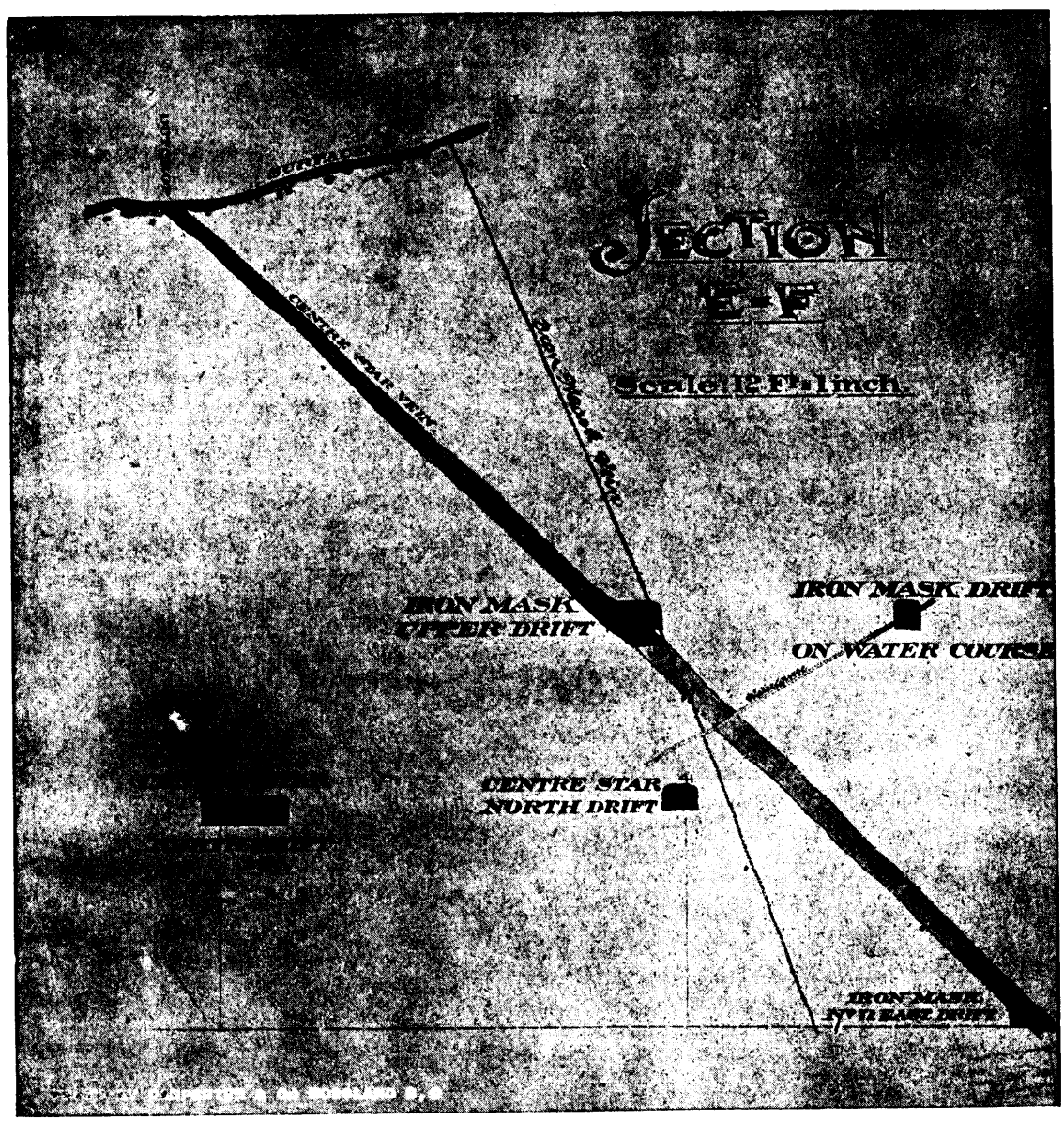
Mr. Davis—Yes.

The Court—Yes; I am going to read it as it is there and, of course, I was not decided at first, but I don't say which way I am disposed now, because I have not made up my mind either one way or the other. I thought at first the Full Court evaded the question. Frankly, I do not like to use that language, and I say so with the greatest deference to the Full Court, because everything was before them. Mr. Bodwell says they have not evaded the question; they have decided it. You think otherwise. It is a question certainly that arises with me, and aside from the decision of mine which was taken up to the Full Court, on the ground that I was wrong. The Full Court decided I was right.

Mr. Davis—The language which they used is this. (Reading):"I think it should be left to the Judge at the time to say whether or not actual work should be done for the purpose of elucidating any particular point wtih regard to the issues raised. I think that language is very clear.

The Court—I am really with you this far, that this is at the trial, because I called the case on, not knowing anything about this argument, so there is nothing preconcerted.

Mr. Davis—Now, what did they leave for the trial? It being at the trial, and an application being made to leave it to the Judge, what is it they left to the Judge? Because it will not do for my learned friend to argue



that the Full Court settled the case and referred it to the trial Judge. They left somthing to the trial Judge, sure. What was it? It is not a question of when further evidence is in or is not. They don't say that it is to be left to the Judge at the trial upon hearing the evidence, or some portion thereof; they do not suggest that. That is all left to his discretion, as it should be, because, if he comes to the conclusion that it is going to facilitate matters to have this dork done while the trial is going on or before, as in this case, as there is an adjournment arranged, as I understand it, be-

tween my learned friend and myself—at least my learned friend spoke to your Lordship of an adjournment until Thursday, that the work should be going on in the meantime, that the trial Judge has a discretion to do that, he has the discretion to make any order about the doing of actual work which will tend to elucidate any particular point. Now, what I say is this: it is utterly immaterial whether the material before your Lordship is the same.

The Court—It does not say that in the judgment there.

Mr. Davis—It does not say it.

The Court—It does not say that he has discretion to make any order that will elucidate any particular point that may embarrass him; that is the point.

Mr. Davis—Yes, that is what it says; not in those exact words, but almost in these exact words: "I think it should be left to the Judge at the trial to state whether or not actual work should be done for the purpose of elucidating any particular point with regard to the issues raised.

Now, I don't know any way in which that question could be left more broadly to your Lordship. It seems to me, with all deference to my learned friend, it is a queer sort of a contention to make that the Full Court decided that no order can be made for work to be done, and wound up the judgment, and the only definite thing they did decide was that the whole thing should be left to the trial Judge, and if he thinks it necessary, or thought it necessary, to order any particular work to be done, for the purpose of elucidating any point, it should be left to him to do so. Now, English is plain when it is plain, and this is about as plain as any language could be that they could use. The application was a general application for doing work—running tunnels and so on—which would pass through the vertical fault and the flat fault. There was no specific point mentioned. It was a general application to do experimental work for the purpose of having evidence for the trial. Now, that was the application. My friend says it is not going to be a question of opinion, but a question of credibility of the witnesses. That clearly cannot be so.

The Court—No; that cannot be so.

Mr. Bodwell—I don't know why my learned friend cannot understand my argument. What I said was this, that it does not necessarily follow that it is going to be a question of credibility of witnesses, and that is what the Full Court says.

Mr. Davis—We will take it that what my friend said was that it does not necessarily follow that it is a question of opinion, but that it may be a question of the credibility of witnesses. That is what he says now.

The Court—I know something about this case, and could almost express an opinion about it now on pretty nearly what I said on a former occasion: Twenty affidavits on one side, sixteen on the other; these gentlemen of such standing on either side, and on both sides, for that matter, that to impeach their evidence—

Mr. Davis—And the explanation of it is, that they are swearing to what they think, and not what they saw, and if we run the work through we will do away with that. My learned friend said the effect of it was this, that we would not be in a better position after we have gone through that, it would still be a question of the credibility of the witnesses. That cannot be, because they will then be swearing to what they see instead of drawing inferences from what they see outside as to what is in that fifteen feet; they can go in and afterwards swear to what they saw in that fifteen feet.

The Court—Has anything been done in the ground since I made my decision? There was no point mentioned or specified at which it was suggested work should be done, or which it was asked that an order should be made to allow work to be done. This application is a specific application to do that certain work at a certain point, to have fifteen feet of a winze sunk. I submit that it does not make a particle of difference whether the material is the same here as it was there or not—although it is not the same. We do come exactly within the language that Mr. Justice Drake used—I don't care whether it could have been inferred from Mr. Hastings' former affidavit—that the facts were as they are now shown to be by his present affidavit or not, because Mr. Justice Drake did not so consider it, and the proof of that is in his own language, and the judgment in which he said this: "If they had actual evidence of a vein both above and below a certain spot, and sought to explore the intermediate ground, they would have a stronger case." Mr. Justice Drake did not seem to think, evidently did not think, that the case is such as it is shown to be in Mr. Hastings' affidavit that we have read to-day.

(To be Continued.)

THE MONTH'S MINING.

SHOAL BAY.

(From Our Own Correspondent).

THERE is very little news mining this month (January) to record from this district, practically nothing having been done with an exception of a prospect tunnel driven on the Monte Cristo, which disclosed the lead previously worked on the Bonaparte. It is rumored that the Ajax has been bonded, the figure mentioned being $25,000. The tram-line and all machinery is shortly to be taken away from the Dorotha Morton. It might also be mentioned that a mining expert representing Mr. Rockefeller of Standard Oil fame, recently visited some of the mining properties of this district.

KAMLOOPS.

We are requested to state that for reasons of a purely personal character, Mr. W. C. Nichol has withdrawn from the vice-presidency and directorate of the Copper Mines, Limited, of Kamloops.

BOUNDARY CREEK.

As the review of the year's progress in this district published in the January number of the MINING RECORD had to be written in December it was not practicable to then supply the following comparative statement showing the statistics for the years 1898 and 1899 respectively of the Kettle River Mining Division. These figures having been obtained at the office of the Mining Recorder, Midway, are accurate. They exhibit the mining records and revenue as under:

	1898.	1899.
Free miners' certificates	700	1,467
Free miners' certificates, special		12

Mineral location records	581	791
Certificate of work records	542	712
Conveyance and agreement records	403	497
Certificates of improvements	44	57
Abandonments	57	50
Water grants	5	15
Permits to re-locate	3	...

The totals of the revenue received at the Midway office were for 1898, $11,059.20, and for 1899, $22,101.78. The proportion of revenue from mining was:

	1898.	1899.
Free miners' certificates	$4,750 10	$6,968 98
Other mining receipts	4,333 10	7,276 45
Totals	$9,083 70	$14,245 43

These figures show a general and very satisfactory advance all round.

Although the past month has been marked by steady progress, there is not much besides to chronicle. From Phoenix Camp the cutting of a body of good ore at the 300-foot level in the Old Ironsides mine has been recorded. Much activity continues on this property and the adjoining Victoria and Knob Hill, which are being worked in conjunction with it. Operations on the Brooklyn and Stemwinder will not be extended until after the new and larger mining plant shall have been received and installed, which will probably not be until well into spring. The Snowshoe, Gold Drop and War Eagle, also in Phoenix Camp, are likely to have development work continued on them steadily and to make an excellent showing later in the year.

PHOENIX CAMP.

In Wellington Camp the two leading properties, the Winnipeg and the Golden Crown, are getting into shape for shipping regularly. On the latter drifting at the 150-foot level and cross-cutting at the 300-foot level are being proceeded with for the purpose of opening up the ground, so that when shipping shall be commenced the output of ore may be regularly maintained. The Winnipeg lately sent out one carload of ore and is now loading two more cars. In this mine stoping is the chief work now in hand. Both the Winnipeg and the Golden Crown may be regarded as prospective regular shippers, but for the present the ore shipments from Wellington Camp will be intermittent and comparatively small.

THE WINNIPEG AND GOLDEN CROWN.

The B. C. Summit Camp has already sent several carloads of ore to the smelter and is probably just now better prepared to keep up shipments than any other mine in the district. As mentioned last month, there are on the dump 10,000 or 11,000 tons of ore, and the cross-cut at the 250-foot level is being advanced. With three shoots of pay ore continuing to the surface, there is a lot of productive stoping ground available for supplementing the ore already on top as the dumps are drawn on by shipments to the smelter. The Oro Denoro, also in Summit Camp, is being developed with the intention of making it a regular shipper, following the trial carload shipment already made to Trail.

SUMMIT CAMP.

The Mother Lode, in Deadwood Camp, is holding its own as one of the leading mines in the Boundary District. The upraise from the 200-foot level of the new workings to the old workings above has been completed and now preparations are being made to stope out ore with as many men as can be employed to advantage. The stopes will not be fully worked until after the cage ordered from the Wm. Hamilton Manufacturing Co., Ltd., and now on the way in from Peterboro, Ont., shall have been received and put into running order. The cross-cuts east and west from the 200-foot level, to prove the width of the big shoot of ore that the drift is in for 120 feet, are, like the drift, all in ore which it is estimated will run about $15. A drift has been started from the station at the 300-foot level, so that it will not be long before it will be practicable to block out ore down to that level. When this shall have been done there will be between 500 and 600 feet of backs, the greater part proved to contain ore known to give values that will return a good margin of profit above cost of mining and treatment.

THE MOTHER LODE.

The plant for the Sunset is being installed and mining work on a larger scale is projected, so that this promising property should soon begin to show up well. It adjoins the Mother Lode and is believed to be on an extension of the big lead that is opening out so satisfactorily in that mine. The Morrison, in the same neighbourhood, is not working just now, but it is stated that more capital is being obtained to develop the ore bodies already discovered on this claim. The Buckhorn now has a compressor plant and hoist at work and is sinking a vertical double compartment shaft. From the Gold Bug, one of the Boundary Creek Mining and Milling Co.'s claims, a second carload of ore has been sent to the Trail smelter. The returns from the first carload were stated in last month's RECORD to have been at the rate of $111.55 per ton. The second carload returned $157.20 per ton, in the following proportions: Gold 3.72 ounces, $74.40; silver 130 ounces, $75.40; lead 12 per cent., $7.40. Total values for the carload, $2,358.

Arrangements have been made to disincorporate the Republic Gold Mining Co., of Spokane, Wash. In its stead the Republic Gold Mines, of Greenwood, has been organized and incorporated. It is understood that Eastern Canadian capital has been interested in this organization, which will acquire from the old company the Non Such, Republic, Last Chance and Hidden Treasure claims in Smith's Camp, near Boundary Falls. Quite 1,000 feet of work, chiefly drifting, has already been done on the Non Such whilst a 100-foot shaft has been sunk on the Republic and one to a similar depth on the Last Chance. The ore is quartz, values being chiefly in gold, with more or less silver. The work to be done under the new company has not yet been definitely arranged, but it is very probable that development will be vigorous and continuous until the value or otherwise of the properties shall have been satisfactorily demonstrated. The Golconda, also in Smith's Camp, is being worked and there is a report that the Boundary Falls claim is to again have attention. It was stated when work was in progress, in 1898, on this last-named claim that at the bottom of a 100-foot shaft there was an eight-foot lead of quartz carrying gold.

SMITH'S CAMP.

New strikes on both the City of Paris and the Lexington, in Central Camp, have lately been reported, but particulars of these have not yet been received by the writer. From all accounts the City of Paris is developing very well, payable ore bodies

having been opened up in several different parts of the mine. The Norfolk, in the same camp, is now down 100 feet, at which depth cross-cutting has been commenced. It is likely the No. 7 adjoining the Norfolk will resume work shortly. If so it will help to attract the notice to this camp it merits, by reason of there occurring in it ledges carrying good values in gold and silver.

It may be of interest to note that a commencement has been made to use in the district coal from the Crow's Nest Pass coal mines. Three carloads—almost 80 tons—have been received at the Mother Lode mine where the coal has been substituted for wood in one of the furnaces, with very satisfactory results. Another order for 100 tons is being sent out, and shortly after suitable fire bars have been obtained coal will be used for the second boiler. Mention was omitted earlier of the fact that 100 tons of ore from the Mother Lode mine were sent to Trail recently and that a similar shipment may be made to Northport shortly.

COAL FROM CROW'S NEST.

Work is being steadily prosecuted at both the British Columbia Copper Company's smelter near Greenwood and that of the Granby Company near Grand Forks. Neither is likely to be ready for the treatment of ore until next summer; in fact they will do well to be in running order by then. The Columbia and Western Railway has been extended to Midway, which for some time to come will be the western terminus of this road. Already preparations are being made to ship ore over it from Midway, whence concentrates from Camp McKinney and from one or two mines in the Okanagan country south of the international boundary line will be forwarded to either Trail or Nelson for reduction. It is contemplated, too, to send out ore from Sheridan and other camps situate between Midway and Republic. A large construction gang is engaged in putting in sidings and otherwise preparing for the freight traffic that it is expected will have to be handled at Midway, which will be the distributing point for the numerous mining camps lying to the south and west of that town.

THE SMELTER.

Midway, B.C. PERCY VERENS.

ROSSLAND.

(From Our Own Correspondent).

The revised figures showing the production of ore from Rossland mines for the year 1899 are now available. These are tons of ore produced: 183,000; ounces of gold won from the same, 103,000, value $1,957,000; ounces of silver 275,000, value $170,000; copper, 7,800,000 pounds, valued at $1,115,000; total value, $3,242,000, and the total quantity of ore, etc., for the sextile period beginning with 1894 and ending with 1899 from the same mines amounted to 422,710 tons, from which were produced 377,862 ounces of gold, valued at $7,411,361; 496,716 ounces of silver, valued at $411,425.40; 17,378,890 pounds of copper, valued at $1,998,644.44, with a total value of $9,741,330.64. These figures measure the rise and progress of the mineral industry of Trail Creek division for the six years beginning in 1894. The figures given in a previous report were incomplete and fairly estimated. The rapid increase of the industry since 1894 is obvious. Since the first of the present year there have been shipped from Rossland mines about 15,000 tons of ore valued at approximately $270,000 gross, made up as follows: Le Roi, 5,300; War Eagle, 5,200; Centre Star, 3,300; Iron Mask, 600, Monte Christo, 275; Giant, 50; I. X. L., 50; Evening Star, 25; miscellaneous, 200.

STATISTICAL DATA.

At this season it must not be expected that unusual activity can be reported, especially now that there are so many distracting events claiming attention. Foremost here of local importance is the question "What are the prospects for the immediate future?" The way in which this question is asked shows the anxiety which prevails. The air has been filled with rumors of a strike—as a further result of the eight-hour law.

The petition which was presented by Mr. J. M. Martin, the member for Rossland, in the Legislature the other day asking for a repeal of the eight-hour law on the grounds that the law is unconstitutional and should be repealed because as it is alleged it is an interference with the right of private contract and that it is not working well here, has evoked a counter petition from the labour side of the question. The petition asking for a repeal of the law was, as your readers doubtless know, signed on behalf of the leading producers of the camp and a number of companies whose status is yet to be defined. But the presentation of this petition undoubtedly creates much stir in Rossland. It was reported in some quarters that Mr. Martin had introduced a bill to repeal the law, but it soon became evident that Mr. Martin presented only a petition that was sent to him and in this respect had merely discharged a legislative duty. It is well known here that the mine managers are more or less opposed to the law, and threaten to pay only an eight-hour wage if the law is to continue in operation. The petition asks for a repeal of the law or amendments which it is presumed will be explained later. On the other hand those that take a different view are circulating a counter petition praying that no interference be made with the existing law. This petition, I understand, is to be forwarded this week, and in the meantime it is expected that the Government will make the necessary investigation into the entire question so that it will be better able to decide on what is best to be done.

THE EIGHT-HOUR LAW IN ROSSLAND

SANDON.

(From Our Own Correspondent.)

The Payne imported thirty miners on the 14th inst. by special train and boat. Demonstrations were made by the union both on the arrival of the train and three days later at the mine, the result being that the secretary of the union is now under bonds to appear to answer the charge of unlawful assembly. The union has lost the sympathy of many of its best members through this action and also for not accepting the compromise of $3.25. The Payne mine is now employing about 55 men and is shipping 30 tons of ore daily. An air drill in No. 5 tunnel is to be installed. On the Vulture eight men are employed driving a lower level. When the ore below is struck the mine will be in a position to ship regularly. An additional 100 feet of driving will reach a spot immediately beneath the upper ore showing.

The Florida, situated in the Jackson Basin, has shipped two cars from Whitewater and will shortly ship another. They have six men engaged in development work.

The American boy is looking very well and has about fourteen men at work. They are shipping about a car every week.

The aerial tramway was running on the Wakefield this week and worked very well. The water will be turned on in the mill on the first of next month. The mine has 12 miners under contract in the mine, but would put on 100 men if the labour trouble was settled.

Development work is progressing favourably on the Marion and the ore-chute continues to improve. The management will not attempt to ship this winter, but active development work will be prosecuted.

The Madison has just installed a gasoline hoist, from Fairbanks, Morse & Co. Crouse & Williams have just finished the 700-foot tunnel contract in the Sovereign which belongs to the same company.

The Queen Bess is working about 22 men who are operating machines and working on contract. The lower tunnel being driven by steam drill is in about 350 feet. The mine has shipped about 150 tons this month. Things would be very active in the Slocan now if it were not for the eight-hour law and fully 1,000 more men would be employed in our mines. No miners are at work except machine men, men on contract labour and those who the old scale of wage does not affect.

OREGON VS. BRITISH COLUMBIA.

Below you will see the differences in mining in British Columbia and Oregon and are facts taken from a letter from a well known mining man in Baker City, Oregon, and who also has very considerable interests in the Slocan. My correspondent is an Eastern Canadian:

Oregon.—Labour ($3.50) for ten hours; powder, 12 cents per pound; duty on lead, nil; Government tax on output, nil; no tax on mine.

British Columbia.—Labour ($3.50) for eight hours; powder, 17 cents per pound; duty on lead, $30.00 per ton; Government tax on output, 1 per cent. and said to be going to be increased; tax on mine and improvements.

In the face of the above great disadvantages for mining in this country surely the Government ought to go other countries one better by trying to encourage mining rather than putting obstacles in its way. Good men are leaving this section for the American side and the ones already here would sell out if they could reasonably. The public have so very little faith in the laws of this section now, as the Legislature are changing them every session and consequently none of us "know where we are at." I trust that the above figures will in some measure interest the readers of the MINING RECORD.

RAWHIDER.

REVELSTOKE.

(From Our Own Correspondent.)

Now that the annual festivities are over, tempered as they were by the deplorable war in the Transvaal, people are beginning once more to turn their attention to business; and business in this district means mining. Everyone is talking about the work that will be done this year, and of the great strides that our chief industry will make, especially in the way of attracting more outside capital to the country, which indeed is the main thing necessary. We have the mineral in abundance, but as a rule are sadly lacking the means wherewith to make it profitable, whilst the far too frequently mismanaged English companies who have invested heavily here, by their failures (which in other hands might have been successes) have considerably damaged our chances of getting as much assistance from outside capital as our remarkably rich district deserves. So true is this that many old-timers look doubtfully on any English company proposing to take up mineral claims here, as from experience they know that the result will probably be failure, and a blackeye to the country. It is very certain that mining must always from its very nature be a good deal of a gamble, but the small companies which are by far the safest investment, as a general rule know a great deal about their properties before they are stocked,and manage them with the idea that every man about the place should be worth his pay, no ornaments being required or allowed.

There is in all camps, far too little attention paid to sanitary arrangements, all kinds of kitchen refuse, the inevitable tin cans, old clothing, and slops are usually deposited as close as possible to the cabin.

SANITATION IN MINING CAMPS

This matter has been referred to before this, but it is quite of sufficient importance to be "rubbed into" those in control; and a few more conveniences such as a place for a bath, could as a rule be arranged without much difficulty, and with much benefit to the public health and comfort of those employed.

Just in this immediate vicinity, mining is extremely quiet. Some unfortunate trouble has occurred with the Boston & B. C. Co., and the men are all laid off at present; but it is stated on the very best authority that the trouble, whatever it was, has been adjusted, and that work in the Standard Basin will be continued immediately just as was intended. The mine is said to have been working very well indeed when work ceased. But though the Big Bend is unexpectedly quiet, a very different state of things holds in the Lardeau, which is all work and bustle. The unusually mild winter has interfered seriously with the rawhiding and freighting arrangements, but notwithstanding the difficulty of transportation the Nettie L. amongst others has got a large pile of ore sacked at Thomson's Landing (the nearest point to the river) and very much more at the mine and at Ferguson. This is just an illustration of the small and good investments referred to above; the ore extracted will prove a most valuable source of income, and it has not been the policy of the managers to get out ore at the expense of development, that work has been steadily prosecuted the whole time to the great advantage of the property. At the Silver Cup there was some temporary trouble recently, when most of the men were laid off, but that also has been satisfactorily arranged and work is proceeding as usual. Many other claims are being worked this winter in the Lardeau district; on First Creek operations will be commenced forthwith on the Moscow, which is said to have a wonderfully fine surface showing, and a tunnel of at least 50 feet will be driven on the vein. It is impossible to enumerate all the prospects and partly developed mines that are keeping from two to thirty or more men employed, but busy as the district is this winter, it will surely be a very hive of industry next summer, when the long expected railroads which are already partly finished shall at least enter into and open up this wonderfully mineralized region, and render those claims comparatively easy to approach which have hitherto been almost inaccessible.

H.

TROUT LAKE.

(From Our Own Correspondent.)

Greater activity exists at the present time in this district than in any previous winter. A force of 18

men is employed at the Nettie L. property, near Ferguson, some of the men being engaged on development work and the balance taking out, sorting and sacking ore. So far about 80 tons of ore have this winter been rawhided to the foot of the hill, from which point the ore is taken on sleighs to Thompson's Landing to await trans-shipment to some smelting point. The property is looking well, and a steady output is expected to be maintained all winter. Since about the middle of December about 160 tons of ore have been shipped from the Silver Cup and Sunshine group, about half of the tonnage coming from each property. About 50 tons of ore are now ready for market, and ore is being sacked at the Silver Cup at the rate of four tons per day. There can be no doubt that there is more ore in sight to-day at the property than at any previous period, and the management is to be heartily congratulated on the appearance of the mine. Work is proceeding on the St. Elmo property, from which a small shipment should shortly be made. The ore at this property is of a high character. Work on the Ethel group, near Trout Lake City, has been temporarily stopped owing to an adjustment of the terms of the lease being necessary. It will be remembered that the property was being developed by certain lessees who engaged to hand to the owners a certain percentage of any smelter returns. A small force is still at work on the Mohawk, in the Fish River District, where development is proceeding satisfactorily. Freighters are busy rawhiding and sleighing ore from the Beatrice property—from which not less than 200 tons of high-grade ore should be shipped this winter.

A BUSY WINTER.

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.

DISCOVERIES OF BESSEMER STEEL ORE AND THE SOURCES OF THE PLACER GOLD OF THE FRASER RIVER.

TO THE EDITOR:—Referring to the article in your issue for last month I have great pleasure in affording you further information of the important discoveries which I have recently made in this part of British Columbia.

I have discovered in the upper Fraser Valley the very sources from whence the placer gold of the Fraser River originates—the source of the fine as well as the source of the coarse gold. Further, I have discovered in two different localities in the vicinity of Fort George Canyon immense beds or strata of soft red hematite and micaceous iron ore—the well known bessemer steel ore.

It is a well known fact that the Fraser River is rich in fine placer gold. So far, however, the source of that gold has not been known. I claim to have discovered that source in the huge irregular masses of conglomerates which are imbedded in the black slates of the Archaean. These slates occur, as far as my observation reaches, at three different localities in the Fraser Valley between the mouth of Blackwater River and Fort George Canyon.

Their lateral extension is quite unknown yet. The whole country is so thickly covered by drift—immense deposits of gravel—that prospecting and exploration work is very expensive and uncertain in its results. Only on the top of high hills and in the deep valleys of the great rivers can the bedrock be seen and examined.

These conglomerates are intersected and interlaminated by true quartz veins and dikes of every description. The composition of the conglomerates consist of sharp cornered pieces of quartz, slates, traces of mica, imbedded in a yellowish, whitish or greenish mass of tale of great resistance. These ingredients vary in size from one inch diameter down to so fine a state that they appear before the naked eye as one homogeneous mass. They form on surface low ranges of hills, knobs, hogbacks, cliffs, reefs and banks on or near the river. Their colour is mostly bright orange, yellow, brown and white, attracting the eye of the traveller and contrasting with the gray and green of their monotonous surroundings. These conglomerates are full of iron pyrites and little globules and flakes of native gold, easily to be detected by a powerful lense at bright daylight or by the light of a lamp.

Rarely or only exceptionally can the gold be detected by the naked eye; and only pieces of ore which are quite dry show the abundant presence of the gold. It is almost useless to examine pieces of ore which are wet or moist. When in this condition the contents of the talcose matter, always accompanying the gold here, probably swells up and hides the gold. This may be one of the reasons why these treasures have not been discovered long ago. Another reason may be found in the fact that geologists, miners and prospectors invariably are travelling on this river up stream at the time of high water when the river banks are inundated and the traveller returns home down stream in such a hurry that he pays but little attention to his surroundings.

It happened that I came here after the time of high water and I have had plenty of leisure to studying the peculiarities of the formation. Any quantity of this kind of ore may be taken from the surface at any time. It is partly free-milling, partly associated with iron pyrites. So far I have not found refractory gold ore in this part of the country.

Probably these conglomerates cover many square miles, and there is abundant proof of the presence of gold without the necessity of assaying, for these immense masses of gold-bearing conglomerates have been exposed to the atmospheric influences, which have set the little globules of gold free. Then water, sand and gravel has helped carry this gold to the river, where the globules are pressed and crushed between rolling stones and boulders by the action of the river currents. Finally they appear as the fine placer gold of the Fraser River. This is the long-sought-for solution of the problem of the source of the Fraser's gold.

The coarse gold occurs in a regular stratum of conglomerates of about twenty feet in width differing greatly from the deposits referred to above and crossing the Fort George Canyon at the most turbulent spot. This is a true stratum composed of a bluish, greenish white and hard talcose mass in which hornblende and quartzose lumps of rock of different size are irregularly imbedded. Here the native gold occurs so frequently and in such a coarse state associated

frequently with the quartz and hornblende, that it may be easily detected by the naked eye and occasionally even cut and tested with a knife. Several years ago about two or three miles down the river from this locality miners discovered and washed from the gravel beds on the river banks great quantities of coarse gold, but they were obliged to cease their operations because they were not able to obtain water sufficient for the process of washing. This discovery on Fort George Canyon is undoubtedly one of the main sources of the coarse placer gold of the Fraser River.

The beginning of the hard winter has rendered further investigation impossible for the present time. My discoveries of the red hematite ore was made on the eastern bank of the Fraser River about two miles and a-half south of Fort George Canyon. Here in the bluff at an elevation of a hundred feet above the stream a stratum of red hematite measuring from footwall to hanging wall more than five hundred feet across is standing out almost perpendicularly from the cliff attracting the eye by its bluish-red colour. This stratum is all iron ore, without any interstratification of rocks of any kind whatever. A number of test holes and blasts sufficiently convinced me that the showing is not the result of surface oxidation only. From the footwall upward to the centre is the muchly sought red hematite, which from this point gradually changes to micaceous iron ore crowned with the common red hematite ore. The part forming the hanging wall is unknown yet, because covered by drift (gravel). Probably the diameter of this gigantic occurrence is even more than 500 feet. We tried to measure the diameter by using a tape line in canoes on the river—the only way to accomplish this work—but the current of the river was too strong and we almost perished in the attempt. I am, however, fully convinced that the stratum measures not less than 500 feet. And it is a regular stratum with a well defined footwall and a well defined stratification. It contains, however, numerous traces of native gold, especially near the few small bands of quartz which cross it in spots. Its footwall consists of quartzose hornblendic slates, shows also numerous traces of native gold, fine iron pyrites and the combinations of manganese. These combinations of manganese are very frequent in this part of the province.

Another occurrence of red hematite may be seen directly on the Fraser River above Fort George Canyon, and within a distance of about 1,500 feet from footwall to hanging wall, a series of black slates are interlaminated, intersected and impregnated by red hematite ore in huge, irregular masses. They also contain considerable traces of native gold and form the overlaying strata of twenty feet of coarse gold-bearing stratum of conglomerates referred to above. There is no doubt in my mind that these slates contain a great number of workable deposits of red hematite, though my investigations are as yet incomplete.

These deposits of red hematite in paying quantities, are, as far as I know, the first discovered on the Pacific Slope. They mean the industrial and national economic development, the industrial independence of British Columbia and a new era of prosperity and welfare for her people. It means that at no distant time British Columbia will furnish steel rails for the railways to all the countries bordering on the Pacific ocean, especially to Eastern Asia. It means a revolution in this branch of the iron and steel trade. The discovery of the source of the placer gold of the Fraser River, valuable and important as it may be, is insignificant when compared with the discovery of these gigantic beds of soft red hematite, directly on the banks of a navigable river, easy of access of railroads, in a country abounding in the best timber, and having magnificent water powers, a congenial climate and the best of coals.

The occurrence of the gold-bearing conglomerates seem to be similar, if not identical, to that of the Transvaal, Southern Africa, but fortunately here there are no Boers.

The red hematite strongly resembles, if it is not identical with that of the Lake Superior region, with which locality I am personally familiar. I take full responsibility for every word this communication contains. It is a matter of self-understanding that all these discoveries have been legally secured. These discoveries offer great opportunities, but only for those with plenty of capital, assisted by technical, mercantile and financial ability. It were of no use at all starting small concerns, trying to open and work the same successfully. It takes organizatory talent and millions of capital to open this region, to agitate and to provide for roads, railways, telegraphs, corrections of the river, establishing connections with the outer world, etc., etc. At present this part of British Columbia is nothing else but a wilderness, empty of man and of any indication of civilization.

K. LUDLOFF.

Quesnelle, B.C.

[Mr. K. Ludloff is, we understand, a German geologist, at present engaged by a syndicate of Baltic noblemen, to obtain seeds of the conifers of British Columbia with the object of replenishing depleted forests in Livonia.—Ed.]

PRODUCING MINES.

NELSON.

The mine exports from the port of Nelson for December were as follows:

Coke	$ 8,037 00
Copper matte	41,695 00
Lead bullion	10,849 00
Gold bullion	26,164 00
Total	$86,745 00

The result of the Hall Mines smelting operations for the four weeks ending December 29th, 1899, were as follows:

Ore smelted	3,132 tons
Containing (approximately)	
Copper	69 tons
Silver	40,080 ozs.

The returns from the Athabasca mill for December, comprising a run of 29 days and 16 hours, during which time 344 tons of ore were crushed, are as follows:

Value of bullion recovered	$ 7,852 66
Value of concentrates	2,553 89
Total values recovered	$10,406 55
Value of bullion recovered per ton of ore crushed	$ 22 83
Value of concentrates recovered per ton of ore crushed	7 42
Total values recovered per ton of ore crushed	$ 30 25

ROSSLAND.

The customs returns from Rossland for December show a gratifying increase. The mine exports were:

	Value.
Ore, 8,045 tons	$225,269
Matte, 699,037 lbs	191,121
Total	$416,390

The total exports or the year were $3,929,549, a monthly average of $327,479. The total imports were $779,304, a monthly average of $64,942. There has been a most marked increase during the last six months. The imports from July to December were $436,222 as compared with $343,082 from January to June. The increase of exports in the last six months of the year are still greater, the total from July to December being $2,399,309 as compared with $1,530,240 from January to June.

Our Rossland correspondent telegraphs: "Official figures show that the total quantity of ore from Trail Creek mines during 1899 amounted to 180,300 tons, valued at $3,211,400, yielding 101,500 ounces of gold; 272,300 ounces of silver; 7,783,000 pounds of copper, valued at $1,114,400. Le Roi produced 92,250 tons, valued at $1,250,000; War Eagle, 63,500 tons, valued at $1,143,000; Centre Star, 26,700 tons, valued at $221,275; Iron Mask, 5,378 tons, valued at $70,268.81. The balance is made up by miscellaneous shipments. Much uneasiness prevails with regard to the likelihood of labour troubles as a result of the eight-hour law. Meanwhile supporters of the eight-hour law have forwarded a counter petition protesting against its repeal. It is believed here that the Government will investigate as to the result of the operations of the law before taking any decided action. The ore shipments for January are estimated at 24,000 tons."

The following figures may be regarded as official and refer to the condition of the principal mining properties throughout Trail Creek division up to December 31st, 1899:—

Le Roi Mine—Tons of ore shipped, 92,500; gross value, $1,250,000.

Columbia and Kootenay—tons of ore shipped, 92,500; gross value, $125,000.

Columbia and Kootenay—Tons of ore shipped, 110; gross value, $1,,600. Number of feet of development work done—driving, 4.30; sinking, 750; cost, $5,050; average number of men employed, 40.

Nickel Plate—Number of feet of development work done—driving, 1,930; sinking 440; average number of men employed, 25.

Great Western—Number of feet of development work done—driving, 300; sinking, 200; average number of men employed, 20.

Josie—Number of feet of development work done—drifting, 650; raising and sinking, 480; total, 1,130 feet; average number of men employed, 20.

Number 1—Number of feet of development work done—drifting, 1,900 raising and sinking, 430; total, 2,330 feet; average number of men employed, 35.

War Eagle—Number of tons of ore shipped, 63,500; gross value, $1,143,000; average number of men employed, 250.

Centre Star—Number of tons of ore shipped, 16,700; gross value, $225,450; average number of men employed, 75.

Iron Mask—Amount of development work done during 1899, 2,852 feet, number of tons of ore shipped, 5,378; gross value, $70,268.81; average number of men employed, 40.

New St. Elmo—Amount of development work, including cross-cutting and drifting, 296 feet; average number of men employed, 8.

Montreal Gold Fields. Gertrude—Building improvements (1899) $1,235; plant and machinery (1899) $2,145; prospecting, etc., $190; total, $3,570. Shafting, cost, $4,200, cross-cutting, etc., $5,820; drifting, $544; total cost, $14,134.

Coxey—Surface prospecting, etc., cost, $250; shafting, $1,260; winze, $1,040; cross-cutting, 945; timbering, $175; stoping ore, $2,660; No. 2 tunnel, cross-cutting off No. 2, $1,840; roads and trails, $50; total, $8,295.

California—Work was resumed on this property September 5, 1899, since which time the following amount of work has been done: Drifting, 78 feet; wagon road, 1,000 feet; building improvements at a cost of $4,300; average number of men employed, 5.

Jumbo Gold Mining Co.—Tunnelling during 1899, 500 feet; average number of men employed, 5; no ore has been shipped.

Vechet Mines, Sophie Mountain—Drifting done in 1899, 564 feet; cross-cutting, 460 feet; sinking, 55 feet; raising, 75 feet; total 1,154 feet. Average number of men employed, 25; no ore shipped during 1899.

Portland, Sophie Mountain—Drifting in 1899, 250 feet; sinking, 147 feet; total, 397 feet. Average number of men employed, 12. No ore shipped.

Iron Colt.—Work done during 1899, 30 feet. Average number of men employed, 20. Total amount of work done to date, 1,400 feet. No ore has been shipped.

Big Four and Double Fraction.—Drifting 32 feet, $500; stoping vein on surface, $200; total, $700.

Homestake Mine—Sinking done in 1899, 110 feet; drifting, 630 feet; cross-cutting, 830 feet; upraising, 25 feet; total, 1,595 feet. Average number of men employed, 19.

Canadian Gold Fields, Limited. Sunset No. 2—Shafting, 235 feet; cross-cutting, 1,175 feet. Average number of men employed, 22. No ore was shipped during the year.

Curlew—Shafting done during 1899, three feet.

Parrot Fraction—Shafting, 28 feet.

Black Eye—No work was done during 1899.

The ore shipments for the first 24 days of January have reached about 18,000 tons.

The winter continues to be an open one with prevailing westerly winds.

A counter petition against the repeal of the eight-hour law has been circulated in Rossland and is said to have received a large number of signatures. Much anxiety is felt with regard to the future relations between mine owners and miners. It is believed that the Government will fully investigate the whole subject before taking action either way.

SLOCAN.

During the past year 25,700,224 pounds of ore from Slocan mines was transported over the Kaslo & Slocan railway to American smelters—a decrease of nearly 8,500 tons in production as compared with the 1898 returns. The exports of ore cleared at Kaslo also decreased in value to $14,274.68. This deplorable falling off is undoubtedly alone ascribable to the operation of the eight-hour law and consequent labour troubles. The exports of ore cleared at the port of Kaslo for each month in 1899 were as follows:

Month.	Pounds.	Value.
January	5,916,506	$2,688 23
February	5,431,315	2,631 68

March	5,081,300	2,412 79
April	4,296,800	1,911 57
May	3,901,630	1,690 87
June	2,206,410	999 53
July	967,556	419 77
August	492,000	260 77
September	2,333,791	673 93
October	2,290,410	681 80
November	510,585	185 61
December	1,007,955	418 13
Total	34,436,258	$14,974 68

COAL MINES CASUALTIES.

Mr. T. Morgan, Provincial Inspector of Mines, has furnished the following record of fatal and other accidents in the coal mines during the year 1899:

New Vancouver Coal Co.—Three fatal accidents and six injured.

Wellington—No fatal accidents and 13 injured.

Union—Five fatal accidents and 26 injured.

Extension—One fatal accident and seven injured.

South Wellington—No fatal accidents, two injured.

This record shows nine fatal accidents as compared with seven in 1898, and six in 1897, while the year shows 54 accidents, as against 47 for the last year, and 27 for 1897.

COAL EXPORTATIONS.

FOREIGN SHIPMENTS.

	1898.	1899.
New Vancouver Coal Co	403,535	463,109
Wellington	232,642	206,422
Union	129,684	88,174
Extension (Well	....	11,386

The following are the New Vancouver Coal Company's foreign shipments for the three weeks ending January 20th:

Date.	Vessel.	Destination.	Tons.
4th—	SS. R. Adamson	San Francisco	4,451
6th—	SS. Mineola	Port Los Angeles.	3,207
9th—	SS. New England	Alaska	55
14th—	SS. Titania	Port Los Angeles.	5,822
17th—	SS. San Mateo	Port Los Angeles.	4,356
19th—	SS. R. Adamson	San Francisco	4,471
20th—	SS. Charles Nelson	San Francisco	929
Total			23,291

The year 1899 beat all previous records in the coal industry of Vancouver Island. Nanaimo as usual took the highest position, both in output of coal and foreign shipments. The total output for the year again overtopped the million mark, being 1,166,251 tons. The annual output only reached the million point in three previous years—1898—1,117,915 tons; 1894—1,012,953 tons, and 1891—1,029,098 tons of coal. The foreign shipments also show a corresponding increase, the New Vancouver Coal Company exceeding all the other collieries combined, both in output and foreign shipments. Estimating the output from the Fernie mines at 60,000 tons we get the total output for the province as 1,226,251 tons.

The following comparative figures are of interest:

	1898.	1899.
New Vancouver Coal Co	520,222	614,808
Wellington	315,838	257,443
Union	236,395	206,871
Alexandria	45,500	47,120
Wellington Extension	.....	40,000
Totals	1,117,915	1,166,251

THE METAL MARKET.

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

SILVER.

SILVER has advanced under the impression that India's requirements may compel the purchase of a considerable quantity of the metal. There is, however, no positive information as yet to this effect. The price has meanwhile advanced from 58⅜ to 59¾.

COPPER.

This market still remains steady and the general conditions prevailing are eminently re-assuring as regards the immediate future. Prices remain unchanged 16¼ to 16½c. for Lake; 15½ to 15⅝c. for electrolytic in cakes, bars or ingots, and 15¼ to 15⅜c. for cathodes. Casting copper remains nominal at 15¼ to 15⅜c.

LEAD.

Lead has been somewhat easier at 4.65 to 4.70 New York and 4.57½ to 4.62½ St. Louis.

SPELTER.

There has been an improvement in this market, and 4.60 to 4.65 is quoted from New York; 4.35 to 4.40 St. Louis.

THE LOCAL STOCK MARKET.

THE stock market remains in a very depressed state with most stocks showing a still further decline since our last report.

Van Anda has fallen since the annual meting held last week at Seattle from 5½ to 3½ cents owing to the resolution passed at that meeting authorizing the issue of $225,000 debentures in addition to the $75,000 already issued.

In Trail Creek stocks War Eagle has advanced from $2.60 to $2.80. Iron Mask has fallen from 74 to 56; Big Three declined to 8, and I. X. L. after booming has weakened. In Slocan and Nelson stock Dardanelles has declined from 12 to 9; Noble Five from 20 to 13; Athabasca to 32, and Tamarac to 9.

Boundary Creek shares have also been affected by the general market depression. King has declined from 28 to 21; Brandon from 30 to 28; Winnipeg from 30 to 28; Morrison from 7 to 6. Rathmullen, however, has been very active owing to the recent strike at the 200-foot level.

Winnipeg sent out a carload consignment of ore to Trail smelter last week. This company has entered into a contract to ship 10,000 tons to Trail and it is expected to become the first dividend payer of the Boundary district.

In Camp McKinney stocks the well established dividend payer, the Cariboo, has fallen from $1.05 to 80c.; Waterloo from 13 to 12c.; Fontenoy from 14 to 13c.; Sailor from 13 to 10c.

In East Kootenay Crow's Nest shares are held firm around $39, whilst North Star has advanced from $1.00 to $1.20 and Sullivan has been selling in the vicinity of 9 to 10c.