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THE MONTH.

THE late elections have shown two things very clearly, one that the country considers a government along the lines of Messrs. Semlin and Cotton inefficient and inadequate, the other that it regards Jos. Martin and his satellites with abhorrence. The Semlin-Cotton combination retire rejected as incompetent, but not pursued with hatred and disgust as dangerous and revolutionary. Nor can it be said that the laws passed by the Semlin-Cotton government of a social character, notably the eight-hour law, were responsible for its rejection. It was the entirely negative attitude which these gentlemen occupied towards the progress of the country, and the way in which their actions were allowed to be interpreted as hostile to the introduction

A GOVERNMENT
ADVERTISING
BUREAU.

of much needed capital into the country, which led to their downfall or more properly their painless extinction. The Semlin-Cotton party reminds one somewhat of David Harum's story of the calf, "Wall I didn't kill it, and it didn't die nuther—it just kind o' gin out." But if there is one thing more evident than another it is that the province demands from the new government progressive activity in the particular directions in which the Semlin-Cotton government failed to exercise this quality. The first public act of the late government was to suppress the office of the Agent-General in London instead of doing what was demanded of them, namely, making this office effective and business-like. This action was interpreted as the straw which showed how the wind was blowing

and the interests of British Columbia suffered accordingly. Every leader in politics during the late campaign has recognized the necessity of governmental action to stimulate the introduction of capital into this country. But not one of them has shown a fully comprehensive notion of what the action should consist of. And yet the question is simple enough. There is nothing very abstruse about it. To gain a certain desired result the means must be adopted which have been proved successful. That the result is desired is not disputed. The people who failed of conviction as to that point have been relegated to the political obscurity which the limitations of their intellect rendered at once inevitable and proper. But amongst those who consider an active policy in this respect desirable there is some natural confusion as to the best methods to be adopted. Now, from a practical point of view, the whole question is capable of a very simple analysis. But first it must be borne in mind that the reckless pledging of the public credit for unremunerative or only partially remunerative public works is not the way to set about attracting the attention of capital. On the contrary, the careful maintenance of the credit of the country is indispensable to any satisfactory progress in the real sense. It must be obvious we should imagine to the least instructed human being that any public expenditure of capital which becomes a burden upon the taxed or taxable resources of the country limits and diminishes the public credit. While on the other hand the expenditure of no sum of money however large—where it is expended so as to directly return interest and sinking fund, can effect the public credit. The question is by no means so simple when the expenditure only indirectly, by increasing the taxable resources of the country, provides for its return in due time. Such expenditures undoubtedly diminish the borrowing power of a country. But nevertheless they are, if wisely regulated, legitimate. When a country makes them it is using its credit. But the fact that using credit diminishes credit is no valid argument against its utilization. Those only whose minds whirl in a logical circle, like squirrels on a wheel, would ever maintain that it was. But in fact this matter has been introduced rather to prevent anyone from imagining that it was the question at issue, than because it has any real bearing on the subject. The programme which the new government must carry out is really very simple. It consists of two parts, first the acquisition of the information about the province's resources necessary to attract capital, and second the distribution of this information in the proper quarters. It is very curious that while every one recognizes the necessity of either one or other of these two things no public man seems yet to have arrived at the conclusion that a successful policy must consist of a synthesis of the two branches. It appears so simple

when it is stated that we might be accused of putting forward self-evident axioms as new discoveries. But what has been done in the past? The energies of a very successful department have been utilized to procure all sorts of useful information. But when acquired, tabulated and published it is buried in an annual report, which excites only that vague interest given to historical information of a statistical character. This can only be from the fact that the effective distribution of information acquired has not been regarded as equally important with its acquisition. What is wanted? Some years ago a government bureau was established in Great Britain as a department of the Board of Trade for the express purpose of keeping the country posted on the varying relations between labour and capital. It was placed in the hands of experts who procured the information and published it in the form of a monthly newspaper. A bureau of the same kind is needed in British Columbia to take hold of this question of the introduction of capital in a scientific and practical manner and should immediately be established. It would have three branches to look after, the tabulation of comparative statistics of actual developments and production, the description by comprehensive reports of the undeveloped resources of the province and the publication of the information acquired through the best channels to secure results. The headquarters of this bureau should be in British Columbia. British Columbia has three sources from which to draw capital, the eastern part of Canada, Great Britain and the United States. France and Germany may be neglected as they invest largely through the London market and for our purposes may be included in Great Britain. A cable agency should be established in connection with the statistics of our progress. Our output of minerals and fisheries and lumbering should be chronicled monthly not annually, and should be published in the press, not in a belated official report. Our undeveloped resources should be investigated, described and profusely illustrated; if possible the imagination of the world should be set on fire with the possibilities British Columbia offers to brains, energy and capital. The London office should be made an effective adjunct of this bureau in distributing information and not considered as an honorary retirement for used-up politicians. If this matter is taken up in the proper spirit, if the policy here outlined is actively prosecuted the development of British Columbia will soon begin to keep pace with the rapid enlargement of its known resources. If not, we shall have starved mining districts breeding discontent and looking only for relief to the counter irritation of wildly experimental legislation.

The flotation of the Le Roi No. 2 upon the English market during the past month is interesting for several reasons. It foreshadows an improved tone towards British Columbian mines in London. Mr. Wright's success as a promoter has always been due to the fact that he keeps a little ahead of the market. The best time to float a property is during a period of stagnation, provided that there are in existence indications that that period of stagnation is coming to an end. The reason for that is that the most crucial time in a company's existence, from the promoters' point of view, is when the first settlement has taken place, and actual dealings in the shares begin. The price of the shares must then be kept up and the pub-

lic must absorb the shares above the price at which, on call option underwriting contract and so forth, the professional manipulators have got them. If that is not done the credit of the promoter is damaged for future issues and his opportunity to realize in cash the vast profits represented by the difference between the buying and selling price of the property is gone. It is therefore certain that Mr. Wright looks for a good British Columbian market during the next half year. His reasons for doing so are not probably essentially different from those advanced in the RECORD last month and are in all likelihood founded upon as intimate an acquaintance with the market conditions prevailing as the RECORD possesses of the trend of events among the mines.

Not less important than the indication given by this promotion of a general market improvement is its bearing upon the prosperity of Rossland. The capital of the company is fixed at £600,000. The earning capacity of the group of mines put at 17 per cent. upon that capital or £102,000, roughly speaking, \$500,000. Fifty per cent. of the gross output of the mines is reckoned in Mr. Macdonald's report as net profits. This places the annual output form this group as \$1,000,000, a very satisfactory increase to the output of Rossland from sources that have never contributed anything appreciable before. And it means \$500,000 a year spent in labour, supplies and other expenses incidental to the industry. It also means over 60,000 tons added to the annual output of ore from the Trail Creek district. There is no reasonable doubt that these expectations will be realized. Unless shipments begin very shortly and are kept up to the dividend-paying mark the company cannot be successful and the English investors will not take the issue. Nor is it to be conceived that any false representations would have been made as to the capacity of the mine where these would so shortly be put to the test. The property contains the Josie, Poorman, Annie, Annie Fraction, Rockingham and No. 1. These claims, most of which are overlapping or fractional, have cost the British America Corporation about £200,000 inclusive of the development work done upon them. They are now capable of paying dividends upon £600,000, of which £50,000 is working capital; so that the British America Corporation has made a profit of £350,000 on the transaction. Or let it be granted that discounts and expenses of flotation run away with £50,000, a net profit of £300,000 is still left. It must be confessed that mining investments are occasionally profitable. Of course it is only fair to reason that profit of 150 per cent. on one transaction is not too high a scale when balanced against the probability of total loss on others. The British America Corporation has been exceptionally fortunate. Its confidence in the Rossland mineral belt has not been misplaced and its enormous expenditure of capital to develop a second Butte in British Columbia is already being crowned with success.

Our sister mining camp of Republic, in which so much Canadian capital is invested, is reviving and has now reached the stage of solid steady production. The Mountain Lion mill has been steadily producing for some time back and is handling 100 tons of ore a day. The custom mill at Republic is also running with a capacity of 50 tons a day. A tremendous traffic in machinery is being carried on by freight waggons from Columbia to Republic. At one time the Columbia freight yard had

2,000 tons of machinery for Republic lying ready for transshipment. And quite an array it made. This machinery should all be installed before winter sets in and an era of very active production follow.

It is very welcome news that with an average rate of shipment of about 16,000 tons a month the Le Roi mine is earning 25 per cent. on its very large capital. The fact that the ore now shipped averages \$16.00 a ton is the explanation. During last year the average value of the ore shipped was barely \$13.00 a ton, and most calculations as to the dividend earning capacity of the mine were based on a net profit of \$5.00 per ton. A net profit of \$8.00 per ton, which is 50 per cent. of the gross value of the ore, makes a vast difference. It is evident from the results obtained that production is systematized in a way it never was before. Not only is the gross tonnage shipped greater but the discrimination between ore and waste is closer, or else the ore bodies in the mine have shown a sudden increase in value, which is not likely. The result must be as gratifying to Le Roi shareholders as it is likely to be beneficial to the mining industry in British Columbia.

British Columbia needs the stimulus caused by the discovery of a new camp. The discovery of the silver-lead mines of Ainsworth brought the first influx of white men into West Kootenay. The discovery of the Silver King on Toad Mountain founded the town of Nelson, built a railway between the Columbia River and Kootenay Lake and gave West Kootenay a certain standing as a district of the province. The discovery of the Slocan caused a tremendous influx of money and men from the United States and for a brief period heralded British Columbia as the Eldorado of the North American Continent. The discovery of Trail Creek in the autumn of 1894 (its real discovery), renovated British Columbia as a gold-producing country, led to the building of the Crow's Nest Pass Railway, the opening up of great coal mines, the steady and orderly development of the Boundary country, the introduction into British Columbia of English capital in adequate amounts, and the wildest furore of mining excitement among the conservative and stolid population of Eastern Canada which was ever seen. Since then there has been a great filling in of corners of the mining area. Individual mines have been developed here and there with notable success under the influence of the stimulus then given. The Boundary country, the Nelson gold belt, Ymir, the San Eugene and the North Star in East Kootenay, as well as the Cariboo mine to the west, are all praiseworthy examples of solid progress. But now a new camp is needed. Our prospectors are all scattered over the country locating claims which they do not possess the power to attract capital towards. Nothing new of sufficient importance has been discovered to serve in itself as the magnet at once of prospectors, mining men and capitalists. Nature has not seen fit to disclose a new mineral belt of sufficient promise to focus the wandering attention of everyone. And yet there is that in the air which indicates that it will not be long before some such phenomenon will be made manifest whether in the back ranges of East Kootenay, or in the gold range away among the headquarters of the Kettle River, or in some new and wholly unexpected direction. It will be remembered by many who were interested in mining at the time

when silver fell finally and forever to about one-half its former value, that it was felt that the mining regions would be depleted of their population, that industry would languish, and that prospecting for mines would yield precedence as a profitable occupation to raising chickens and herding sheep. This was by no means what happened. The gold resources of the country took the place of silver and mining was placed upon a more real solid and satisfactory basis than ever before. At the present time the prospecting forces of Kootenay and of Yale are released and are wandering aimlessly. Mining men, promoters and stock brokers are at a standstill also, not merely because capital has received a severe chill in relation to the province, but also because there is no new territory just at present attracting everyone's attention at the same time. All this muscle, intelligence and energy must find an outlet somewhere. No one doubts that there are as good fish in the sea as ever came out of it, that there are as good mineral belts waiting to be discovered as the Slocan and Trail Creek ever were. Out of the very need for fresh discoveries grows the likelihood of them. The present season also is propitious. The snow went early, giving the certainty of a longer period than usual for prospecting. The extent to which the weather injured the development of the province last year cannot be measured because there is no rule to measure it by. But literally as well as metaphorically a damper was put upon all prospecting and the area explored was very much circumscribed. But this year promises better, and it will be remarkable if our knowledge of the mineral resources in Southern British Columbia is not extended in a very conspicuous degree.

Our Boundary Creek correspondent writes: "Regarding the Boundary Creek Mining & Milling Company, Ltd., of Greenwood, your information to the effect that shareholders have been kept absolutely in the dark as to the operations of the company, is not, in my opinion, correct, and the statement of the Scotch 'Investor' that since he bought stock in the company in 1897 he has received absolutely no information as to its operations is to me inexplicable since I know of my own personal knowledge that at least two circulars—a copy of one of which I enclose—were mailed in 1898 to each non-resident shareholder on the company's share register. I cannot now go fully into the present position of the company for the reason that even the directors themselves must await the expected early arrival from England of a representative of the London & Canada Syndicate, Ltd., which in 1898 secured an option on 480,000 shares, these being the balance of the company's treasury stock. Writing from memory I may state that the syndicate took up, I think it was, 270,000 shares on the agreed terms and the proceeds were regularly expended under the direction of a representative of the syndicate resident in Rossland acting with the local directors. Unfortunately for the company, however, so it is most positively stated by the then foreman of the mine, an English expert who had been instructed to examine the property on behalf of the syndicate, did not in any sufficient manner make an examination. It is affirmed that notwithstanding his merest cursory look over one or possibly two of the dozen or more claims owned by the company, this 'expert' reported to the syndicate that the properties were 'no good' or had 'no ore.' Yet at the very time the syndicate was decid-

ing to suspend work one car load of ore averaging about \$150 per ton—I am still quoting from memory, but the exact returns were sent by myself to at least three newspapers, including the RECORD, and were read by me as well in Vancouver, Rossland, Spokane and local newspapers—and shortly afterwards a second carload were sent to the Canadian Pacific Company's smelter at Trail. The proceeds of this ore—between \$3,000 and \$4,000—were expended in further opening up the Gold Bug, a claim adjoining the company's group, and on which an option to purchase was obtained by the company in 1899. The question of taking up this option and of more of the shares in the company under the agreement first above mentioned will doubtless be fully gone into when the representative from England arrives. Meanwhile shareholders may rest assured that local interests are too strong to let the claims go. They are all Crown granted, but until some arrangement can be made to provide more capital so as to allow of a resumption of work, no further progress can be made. If the secretary has not supplied full information it is because latterly he has not been aware of what the syndicate will do. Further the omission to hold annual meetings is blameable to the shareholders themselves, for although meetings were regularly convened in 1899 and 1900 there was not on either occasion the requisite statutory number present—so many shareholders being non-resident—to allow of any business being transacted. I hope to be in a position next month to write something definite as to the future operations of the company."

Remarkably good reports of general progress and the re-awakened interest of capital are to hand from the Boundary country. The B. C., the Winnipeg, and the Brandon and Golden Crown are now between them shipping in the neighbourhood of 1,000 tons of ore a week to the Trail smelter. The City of Paris has already shipped 1,500 tons of ore to the Granby smelter at Grand Forks. It is as yet the day of small things in the Boundary country, but the indications are most encouraging that even with only six months remaining of the year, it will be a factor in the aggregate production.

The people of the Boundary country must be naturally well pleased to learn that there is every probability of the early establishment in their district of another smelter—in this instance on the new hot and cold blast system of pyritic smelting and of a daily capacity of 300 tons. It is stated by Mr. Andrew Laidlaw, of Spokane, who acts for the smelter company, that the plant is already ordered, whilst a smelter site will promptly be chosen. The principal on which the new smelter is to work is that adopted with success at Leadville, Colorado, where tests are reported to have shown that the system is well adapted for the treatment of much of the ore of the Boundary country.

The Boundary mining country is certainly now beginning to make a substantial first mark as smelter and shipments have already there reached a basis of 1,000 tons a week, most at present going to Trail, though several thousand tons of ore are now waiting treatment at the Granby smelter, Grand Forks. Up to date at least 6,000 tons of Boundary ore have this season been sent to Trail and exclusive of the mine

workers of the North Fork section and the men of the Granby smelter, there are already at least 600 workers now engaged in direct connection with Boundary mining. Hence as regards copper output, Boundary should certainly by the end of the year have revealed itself as by no means a bad second to Trail Creek amongst the districts of British Columbia. And as Texada Island and the Mount Sicker district of Vancouver Island are together now shipping 2,000 tons a month of copper ores, our province can no longer be deemed as regards substantial copper output, a "one camp" region.

For some unexplained reason the Slocan still lags behind. True it is that the production during May showed an increase, but not nearly so great an increase as might reasonably have been expected. During the period of the shut-down somewhere in the neighbourhood of 300 men were employed throughout the Slocan in doing dead work under contract, and in making improvements on the surface. Surely some reserve of ore was accumulated during that time. So that a rate of production in excess of the average capacity of the district might have been expected for some time at least after the difficulties were adjusted. But this has not been the case. The Slocan, like an influenza patient, seems to have hard work recovering its tone. The output of ore for this year compares very unfavourably with both that of last year and of the year before. It is sincerely to be hoped that the latter half of the year will show a change and a cumulative increase in the amount of ore shipped sufficient to replace the Slocan in its high position as one of the great productive districts of the province.

It remains to be seen whether or not a reported strike of good nickel ore near Trout Lake will prove of profitable workable extent and value, and although further efforts are about to be made to work mica claims in the Tete Jaune Cache country, these last are at present so far from settlements and difficult of access, that much cannot be expected of them in the present. However, both cases suggest possibilities of valuable future additions to the mining opportunities of our province.

The miners and local press of Rossland are protesting against an apparently organized influx of Italian labour into the mines of the camp. They together urge that it is desirable that the influx of this class of labour be confined as far as possible to moderate dimensions, the Italian mine workers comparing badly socially with other Western labourers. There is much to be said for this Western miners' view of Italian labour, but our Westerners must, if they wish to reduce the influx and employment of Italian workers to small proportions, be reasonable and conciliatory, and not immoderate and aggressive in their attitude towards employing capitalists.

It is impossible to exaggerate the satisfaction felt by the Western workers of this province over the fact that Chinese colliery labour is now being very substantially replaced by white, in Messrs. Dunsmuir's extensive Extension collieries. It is generally hoped that there will no such fate befall any of our great mine industries as that which has happened in the case of our greatest fishery, ordinary employment in

which it seems to be becoming almost a monopoly for the Japanese and the Chinaman.

The several experts who have lately visited the Britannia group and other neighbouring partly developed copper claims on Howe Sound agree that the deposits appear from numerous present indications afforded by early development work to be exceptionally large. This fact and the cheapness of local working, concentrating and smelting being in their opinion more than ample set off to the but moderate grade which the ore values represent. It seems further to be agreed that to work profitably and successfully each of the most promising of the groups—the Britannia being a case in point—a very large capital running from a minimum of \$1,000,000 upwards,—exclusive of purchase moneys—will be required, so, too, skilled and economic up-to-date management and excellent plant. Granted these things, well known experts, including Mr. W. M. Brewer, believe that there is every likelihood of the Howe Sound district developing one or more of the largest front rank copper mining properties on this continent. Mr. Brewer, who is usually a cautious man, goes so far as to state that in his opinion, so good are the Howe Sound facilities in respect of water power, coke, lime and iron fluxes and cheapness of water transport, that mines in the district ought to be workable as cheaply as any containing like metal ores, that are to be found in the length and breadth of the United States, with the one exception of the mines of Dutch Town, Tennessee, where whilst all other conditions tend to cheapness, labour, negro and white, is obtainable at \$1.00 per day—a rate, of course, neither attainable nor socially desirable here in British Columbia. The Howe Sound deposits are traceable on both sides of the Sound, and appear, though the country is yet comparatively little explored, to run for many miles. Indeed, expert opinion holds that it is possible that the same formation may be found to extend as far as the North Arm of Burrard Inlet. Vancouver is naturally greatly interested in these Howe Sound possibilities, as if even one group of claims should be opened up and worked successfully, it would mean the employment of several millions of dollars capital and several hundred wage-earners, thus placing, including workers' wives and families, a population of 1,500 to 2,000 large and well paid consumers at a point where settlers are now counted only by units and have a rather hard fight for a living, as fishermen and tillers of the soil.

Our coal and coke output is enlarging very satisfactorily, and as we are glad to note, with the adjunct of a larger employment of Western labour, which is rapidly replacing that of the Chinese colliers on Vancouver Island. It is stated that the last Chinese collier has now left the Alexandria and Extension mines and that meanwhile nearly half the Mongolians at Union and Comox have been replaced by white workers with more of the latter to follow. Present indications suggest a gain in the provincial coal and coke output for the year of probably 30 per cent., bringing the aggregate yield within measureable distance of the two million ton mark, last year's coal and coke output having been one of rather over 1,340,000 tons. We may at least fairly anticipate, with the advancing output in the Island colliers and the big mining devel-

opments in the Crow's Nest district, an aggregate coal and coke yield for the year of 1,600,000 tons, representing an approximate value of \$5,000,000 or over a million pounds sterling.

Meanwhile it is interesting to note what the older Maritime and colliery Province of Nova Scotia is doing, as regards its coal output. This all returns show to be very rapidly increasing just now, as a result largely of a big development of an associated iron and steel industry fostered by American capital. The outcome is an advance of Nova Scotia's coal yield for the first five months of this year, representing a gain of over 85 per cent. on that of the like months of 1899, the output for the respective periods being 283,844 tons and 525,890 tons respectively. Hence the coal output alone of Nova Scotia will this year largely exceed two million tons with much coke production to add.

A satisfactory deduction from these facts and statistics is that the two great Maritime Provinces of Canada, one on the Atlantic, the other on the Pacific, are now well on the way towards ultimately making the Dominion rank very high among the coal producers of the world and as a direct consequence, high also amongst the manufacturing and industrial nations. It is already significant, as stated by one of Canada's leading bank directors the other day in Montreal, that steam coal can now be supplied in that city as cheaply as it is in Glasgow under the present coal price conditions of the United Kingdom.

Our Dominion should with certainly much enlarged gold outputs from the Yukon, from our own province, from the Rat Portage district of Manitoba and from Nova Scotia, take at the end of this year a fourth instead of a fifth place amongst the gold producing countries of the world. This at least is suggested by the gold figures of last year from which it would appear that Australasia then ranked first in the world with an output of over \$79,000,000, the Transvaal coming next with one of nearly \$73,000,000, the United States following hard on the Transvaal, and Russia coming fourth on the list with nearly \$24,000,000 and Canada fifth with over \$21,000,000 of gold output. The Chinese and other frontier troubles will probably prevent any large advance of Russia's Siberian gold yield this year and already the Yukon has added several millions of gold output to what it made on behalf of the Dominion last year.

It is satisfactory to note that there is every likelihood of a rigid investigation under judicial authority, of the Morris Catton frauds in respect of Yukon company flotations. A prosecution should be well in order of the chief offender, and we trust that one outcome of the case will at any rate be the prevention of any future participation of British Columbian provincial ministers—however innocently intended—in mining flotations got up by men of very doubtful financial status and dubious records.

The signs of the times in East Kootenay are distinctly encouraging. Rich finds, together with a beginning of high-grade ore shipments are reported from the Windermere district and the St. Eugene group of mines near Moyie are being so busily worked and developed that the latest monthly pay-roll of

its workers represented the substantial outlay of \$17,000.

OUR MINING PROGRESS.

A REVIEW OF MINISTER OF MINES REPORT.

(By N. C. Schou.)

THE report of the Provincial Minister of Mines for last year reflects great credit on the endeavours of all concerned, being as usual a well-compiled, interesting and suggestive state paper, which gives as accurate an account as it is well possible to make of the progress, present condition and prospects of our mining industry. A special word of praise is due in connection with the report to Mr. Wm. F. Robertson, the Provincial Mineralogist, who is primarily responsible for the issue of the report, and due acknowledgment must also be made of the aid rendered by many most capable mining officials and mining industrialists. And as usual, the printing, illustrations, maps and diagrams which supplement the verbal information of the report reflect great credit upon Colonel Wolfenden, the Queen's Printer and his capable staff.

Turning to the subject matter of the report itself, we find on the whole much cause for congratulation in respect of the general progress of our mining although, as a result in part of a labour dispute in West Kootenays, now happily for some time ended and of silver, the immediate advance made in 1899 was rather less than was previously anticipated. But as the report shows a vast amount of development work was then done and is now being continued, the results of which are telling very materially on the mining of this year and will tell far more significantly in the very early future. Meanwhile the report shows that even now, if we except the gold output of the Yukon Territory, the coal and metal output of British Columbia exceeds considerably in amount and value the aggregated yield of all the other provinces of Canada. Thus whilst British Columbia's output of gold, silver, copper, lead, coal and coke reached in 1898 a total worth of \$10,795,361, the other provinces of Canada yielded in gold, silver, copper, lead, iron, nickel, coal and coke a value of \$9,274,398. And though the like statistics for the remaining provinces of Canada were not available at the time of the issue of the report for detailed comparison there is no doubt that British Columbia's mining yield of \$12,393,131 similarly counter-balanced the like output of all the remainder of Canada with the exception of the Yukon Territory. In gold, silver and lead the predominance of British Columbia over the other provinces of Canada is very marked indeed. In copper the output of the remainder of Canada exceeds our own by a fair percentage and thanks to Nova Scotia's large coal output, the same may be said of the rest of Canada's colliery yield. In nickel, too, British Columbia is a non-producer, though some finds of the ore have been lately reported, whilst Ontario yields nearly \$2,000,000 worth of that metal per annum and we are passed, too, as regards iron output. But British Columbia's yield of the precious metals and lead so far overtops that of the other provinces as to make our province more than equal at present as a mineral producer to all the others combined.

The report next shows, that comparing the provinces mining yield of 1899 with that of the previous year, the gain of the twelvemonth reached the goodly

amount of over 13 per cent., the respective values being \$10,906,861 in 1898 and \$12,393,131 in 1899.

Our gold yield last year reached its highest value on record in a gold mining history, which with us now dates back more than forty years, the yield of placer mining, erstwhile the only source of our gold output, now taking second place, though substantially enlarging, to our lode gold output got in connection chiefly with copper working. Our gold output of 1899 reached a value of \$4,202,473, a gain of \$1,357,910 upon 1898 and an advance of over 47 per cent. for the year. Only in the palmiest days of old Cariboo's placer production in 1863 did British Columbia's gold yield reach aught approaching that of last year and the '63 output was rather less than \$4,000,000—\$3,913,000 in fact.

Our gold output in respect alike of placer and hydraulic gravel and lode mining is even now small by comparison with what it will shortly and even this year should show a marked advance upon the gold output of 1898. In that year our placer output, thanks entirely to the Atlin gravels, rose in worth from \$643,346 to \$1,344,900 or rather less than a third of our total gold output of the year. The Atlin yield was then, too, got for the most part by comparatively primitive means, hydraulicing being only now in course of gradual introduction in that new field and complications as to claim titles also prevented a good deal of Atlin productive development. The results of 1899, however, indicate with a yield of \$800,000 worth of gold, that Atlin is a fair placer country for a moderate number of workers, but likely to make a much larger production by the successful application of hydraulicing, though we cannot justly claim that it will become a rich second Yukon.

There is, however, in addition, some promise of copper in the Atlin country, the more exact worth of which the early future should tell.

As regards the hydraulic gold gravel workings in Cariboo, in respect of which there is now a total actual capital invested—largely in costly plant and ditching—representing considerably more than \$5,000,000, the returns of 1899 were somewhat disappointing, the gold output of the district being \$381,900 or rather less than that of 1898. But the vast amount of good work done there is soon bound to tell though progress is necessarily slow and we may hope for better returns this year and therefore for more rapid advance. And whenever and the sooner it comes the better railroad transport is available for Cariboo, the transformation of that district as a gold producer will probably be astonishing.

Most of the province's gold output of last year—nearly two-thirds of it in fact—was, however, derived, as it is being now, from the copper workings of the Rossland district aided by fairly considerable initial outputs of free milling gold from about Ymir and Nelson and some yield also from the Camp McKinney district. We are, however, also to give this year an appreciable addition to our lode gold yield from the bye-products of copper mining operations which marked as it was by excellent development work noted in the report of 1899, has now become a very substantial metal producer.

As regards silver, as a result of the labour trouble and depreciation of value already mentioned, British Columbia's yield of last year came to 2,939,413 ounces as against 4,292,401 ounces in 1898, and realized a value of \$1,663,708, compared with a worth of \$2,-

375,841 in the previous year. The decline of value amounted therefore in the case of silver, to nearly 30 per cent. There was naturally a simultaneous fall in the output of lead, usually here mined together with silver in combined ores. This output came to a value of \$878,870, as against a lead worth of \$1,077,581 in 1898.

Meanwhile silver depreciation continues though there are signs of a check, but the labour difficulty has been removed. And as there is increasing activity in the rich silver-lead district of the Slocan and East Kootenay is very considerably increasing its output, especially from groups of mines in the Moyie district, we have every reason to hope that by the end of 1900, our silver yield for the year will again pass the \$2,000,000 mark and probably nearly if not quite reach the figures of 1898. Our lead output for the year should simultaneously rise in worth.

Our province's copper resources are even now only beginning to be tapped, but British Columbia's yield of this metal is likely in the early future to become even more important than that of gold. The growth of our copper mining industry, yet in its infancy, is very encouraging. Thus the copper output of our province was in 1897 worth \$266,258. It rose to \$874,871 in 1898 and last year reached \$1,351,453 in the aggregate. The gain on the year thus amounted to 54 per cent., although the Boundary country had not then begun to produce, and the Coast and Island districts made a small initial yield, and the Nelson Camp output temporarily declined. Rossland's copper yield, however, increased by 55 per cent. in value. The advance of the province's copper output in extent and value last year was therefore substantial, but the worth of this season's output, despite temporary stoppages of production at some of the big Trail Creek mines, largely exceed that of last year. Rossland's copper output will improve very considerably upon that of 1899, whilst the Mount Sicker district of Vancouver Island and the Boundary country, more especially the latter, which has already several richly producing mines, are now beginning to be fair copper producers. We may, therefore, confidently expect the copper output of the province this year to reach for the first time the \$2,000,000 mark, with promise of vastly larger things to come very shortly.

Last but not least, comes our colliery industry, the annual worth of which ranks fairly well with that of gold. The value of British Columbia's coal and coke output of last year was in fact \$4,090,227, thus representing a worth only less than that of our gold output by about \$112,000. Last year's provincial coal output of \$1,306,324 tons represented for us, a record yield, in amount and value alike exceeding considerably that of the preceding and best previous year.

The value of our coal yield was in 1899 \$3,918,972, the coke output adding a worth of \$171,255.

And now that the Vancouver Island collieries are working full time with more white and less Oriental labour and the Crow's Nest coal and coke production is also increasing rapidly. Hence there is excellent reason to anticipate that the present year will again prove a "best on record," for our collieries.

We have in addition to the above greater resources of our mineral output, large subsidiary opportunities, the worth of which could only be roughly estimated, almost certainly at an undervalue in the report. These resources include iron, in respect of which there is a

very big ultimate future, our resources being vast, though as yet only a few thousand tons of our iron are being annually used for fluxing. Other valuable possibilities as yet comparatively little used are excellent building stone, the output of which in 1899 realized \$206,000. There are great provincial opportunities also in marble quarrying, fine brick and terra cotta and tile manufacturing and we are by no means without hope that something considerable will in the future result from deposits—existing in our province, but as yet either wholly or almost wholly unworked—representing platinum, mica and quick-silver.

Some few words should in conclusion be said, as to the smelting industry of the province, which is of course intimately associated with its mining. This industry is already assuming goodly dimensions and is, as the Provincial Mining Report briefly indicates, certain to grow larger, until it becomes an occupation employing many times the present number of its workers, already counted at several hundred. The oldest provincial smelter is that of the Hall Mines, Limited, at Nelson, which whilst mainly devoted to the treatment of the ores of that and the Slocan district, has also dealt with large quantities of copper. Difficulties connected with the management of the general undertaking, caused during the latter part of last year a suspension of operations here, but there is every prospect now of resumed work on a large scale. The busiest present B. C. smelter is, however that of Trail, which is working all the time, fairly to the limit of its capacity, treating the ores from Trail Creek, with latterly also much Boundary ore which serves as a good flux. The Trail smelter is also making a big and successful bid for much of the silver-lead output of the Slocan district and is under the management of Mr. W. H. Aldridge, prospering exceedingly and affording steady employment to several hundred workers.

A smaller but busy smelter is now well at work also at Van Anda on Texada Island, and whilst primarily intended to treat the copper ore of the Van Anda mine, with the ownership of which it is associated, is also doing an immense custom business.

There will also almost immediately be at work in the Boundary country—indeed first operations have there begun at the Granby smelter—two large smelters at Grand Forks and Greenwood respectively. That at Grand Forks, owned by the Granby Company and thus named, will have a preliminary daily capacity of 500 tons and though it will primarily treat the ores of the City of Paris group, the old Ironsides and the Knob Hill, with which the company owning the smelter is closely connected, the Granby concern will also do a large customs business and probably soon enlarge greatly its first capacity. Already its associated mines have shipped several thousands of tons to it and others will shortly follow suit.

Another Boundary smelter, that of the B. C. Copper Company at Greenwood, which has associated with it the Mother Lode and other copper claims in Deadwood Camp, will also begin work very shortly, with a daily capacity of 250 tons, and the construction of a third smelter, to treat sulphide copper ores on the hot and cold air blast principle, is likely to be commenced very shortly by the Standard Copper Co. of Quebec, at some suitable point in Boundary. To these smelters, with the exception of the last projected one, the report makes brief, perhaps rather too brief reference.

We have now trespassed long on the patience of our readers, but the importance of the official yearly report of British Columbia's Minister of Mines called necessarily for exceptionally detailed reference and discussion, more indeed, than we have been able to give it above. The price of the report, which may be obtained from the Queen's Printer, in Victoria or through any bookseller in the province, is only 50 cents, and it certainly should enter the hands of almost everybody who is in any wise interested in British Columbia mining.

TECHNICAL PERIODICALS.

THE JOURNAL OF GEOLOGY—FEBRUARY AND MARCH.

“THE Calcareous Concretions of Kettle Point, Lambton County, Ontario,” by Reginald A. Daly.

Kettle Point is situated at the southern extremity of Lake Huron. The concretions referred to occur in bituminous shales which are brownish gray to black in colour, well laminated and very fissile. In the immediate vicinity of a concretion the shales depart from their horizontal attitude to assume an arch-like form above, and a cup-like depression below the concretion.

The concretions consist of crystallized calcium carbonate with crystals arranged radially. In addition to the radial structure there is often a concentric banding due, apparently to the varying conditions of growth. In shape they are spheres or spheroids with an average diameter of two feet. The centre of concentration is a crystal of calcite.

The crystallization of the concretion and the formation of the space in which it lies are believed to be contemporaneous. Bicarbonated water has undoubtedly been the source of the calcite. The energy that occasioned the deformation is attributed to the change of volume caused by the breaking up of the bicarbonated water into a monacarbonate deposited on the central crystal, and a fluid bi-product consisting of a weakened solution of bicarbonate, and of carbon dioxide.

Six good photographs, showing the concretions *in situ* admirably illustrate the article.

During the war of 1812 a large amount of saltpetre, —potassium nitrate, was taken from the Mammoth Cave, Kentucky, for the manufacture of gunpowder. The caves of Alabama and Georgia yielded a similar supply to the Southerners in their war with the North. Wm. H. Hess believes that the nitrates were deposited by water infiltrating from the surface. The water on reaching a cave would deposit its burden as cavern mud, a large proportion of which would consist of nitrates. For cogent reasons Hess rejects the view commonly accepted, that the nitrates are due to bat-guano.

The Record of Glaciers for 1898 shows that, in the Rocky Mountains the upper Bow Glacier is slowly advancing, and that the Illecillewaet has retreated 100-150 metres since 1888.

John C. Branner comparing the tropical ant with the temperate earthworm as a geological agent ascribes to the former the greater importance. In Brazil, ant-hills are from 3-14 feet high and 10-30 feet across the base. The ants, by their underground passages open up the rocks to decay.

“The Nomenclature of Feldspathic Cranolites,” by H. W. Turner, continues the discussion on rock classi-

fication begun by Van Hise in the *Journal* and continued by Hobbs. The articles written by these three men indicate the diverse opinions held on the same subject and the lack of concerted action on the part of petrographers.

It is devoutly to be hoped that at the International Geological Congress to be held at Paris in June, something may be done to harmonize the conflicting systems of rock classification.

“The Properties of Building Stones and Methods of determining their value” is treated in an interesting manner by E. R. Buckley. He discusses the colour, durability, and external causes of decay of the building stones. In another article he will continue his subject, referring to quarry observations, building inspection, and laboratory tests. Lucidly written the article contains many hints valuable to the quarryman, stonemason and architect.

“The Geology of the White Sands of New Mexico,” by C. L. Herrick. These white sands cover an area, triangular in shape, of 350 square miles. The whiteness is due to gypsum.

Illustrated by sketch map and two plates of Permian fossils.

Among the books reviewed, is a new edition of Kemp's “Ore Deposits of the United States and Canada”—one of the most valuable works of the kind, that exists. A feature of the new edition is the enlarged space given to Canadian mining districts.

BOUNDARY CREEK MINING AND MILLING COMPANY, LTD.

A SPECIAL general meeting of the shareholders in the Boundary Creek Mining and Milling Co., Ltd., was held at Greenwood last Thursday afternoon, 26th inst. The meeting had been convened at the request of several shareholders who were dissatisfied with the inaction of the company during the greater part of the twelve months just past, but as after the meeting had been arranged for, negotiations that had been proceeding for several weeks for the sale of the unallotted treasury stock, were brought to a head by Mr. D. A. Holbrook, president of the company and the largest shareholder in it, the business transacted at the meeting was restricted to the passing of a resolution bearing upon the result of these negotiations.

The chair was taken by the president, and there were represented either personally or by proxy 748,058 shares, or more than two-thirds of the 916,535 issued shares. Of the balance of the 1,500,000 shares constituting the capital stock of the company, 100,000 are held in abeyance pending a final settlement of matters connected with the re-sale to Mr. Thos. McDonnell of the 560 acres of land purchased from him by the company a year ago and for which they were part of the consideration; 3,465 are reserved to meet contingent liabilities payable in stock, and 480,000 are now under option in accordance with the following resolution unanimously passed at a directors' meeting held on the 11th inst. and which was read to the meeting. “That an option be given to the London and Canada Syndicate, Ltd., of 36 Lombard street, London, England, upon all of the unallotted treasury stock in the company, amounting to about 480,000 shares, for a period of eighteen months upon the conditions that the first 250,000 shares shall be delivered upon the payment of five cents per share to the credit of the company, and the

remainder upon payment therefor of ten cents per share. That of the 250,000 shares 50,000 shall be taken up within sixty days at five cents per share, and a further 50,000 within one hundred and twenty days, also at five cents per share. This option to be upon condition that upon failure to take up the said shares within 60 days and 120 days respectively as aforementioned, the option shall cease and be at the end. The shares to be issued in the name of D. W. Holbrook as trustee for the company and to be placed in the Bank of Montreal, Rossland, in escrow upon the foregoing terms." The instructions from the purchasing syndicate to the bank in connection with the transaction were also read. From these it was learned that the following are among the conditions agreed to: That Mr. D. A. Holbrook should sell to the syndicate 300,000 shares of his vendor's stock for the sum of \$3,000, (this being a concession made by Mr. Holbrook to induce the syndicate to purchase the treasury stock at the prices named above); that the syndicate be granted the right to nominate and elect a majority of the board of directors, some of the present directors to resign their seats if called upon to do so to allow of this right being exercised; a managing director to be appointed by the syndicate and he to have full power to decide as to the method of working the company's properties; and control of all expenditure and that after payment by the syndicate for 100,000 shares at five cents per share as provided in the option the balance of the shares is to be taken up by the syndicate as in its judgment the proceeds thereof may be required for development work on the company's mineral claims. In reply to enquiries Mr. Holbrook stated that he had already been paid the \$3,000 for his shares, and that representatives of the syndicate were expected to be at Boundary Creek within ten days to arrange for commencing work, the proposal being to sink the shaft on the G. A. R. claim (now about 40 feet in depth) to 100 feet and to extend the tunnel on the D. A., as shall be determined upon an examination of the existing workings on this claim.

After this information had been given it was unanimously resolved by the meeting: "That the action of the directors at their meeting held on the 11th inst. for the sale of 480,000 shares of treasury stock to the London and Canada Syndicate, Ltd., be and hereby is approved." This concluded the business.

It was stated at the meeting that the company's solicitor had already taken steps to procure Crown grants for the company's group of twelve claims; and that owing to the removal to Midway of Mr. E. Jacobs, Mr. J. W. Nelson had been appointed secretary-treasurer of the company in his stead.

MINING PLANTS IN THE BOUNDARY DISTRICT.

(By E. Jacobs.)

THE following statement of the mining machinery, plant, etc., in the Boundary district will serve to convey some idea of the progress made, in the direction of equipping the mines of the district with steam power plants, during the time that has elapsed since the first steam plant to be operated in the district was, in January, 1897, installed at the Jewel mine, Long Lake Camp. In comparing the size and capacity of most of the undermentioned plants with those of older mining districts, it must be borne in mind that the Boundary district has until lately been without railway transportation facilities, so that the expense of getting in even the plants now in use was compara-

tively heavy and in some cases almost prohibitory. Then, too, the capital immediately available for mine equipment has in most instances been quite inadequate. However, the day of small things in the Boundary country is passing away and the period of ore production and shipment and the resulting receipt of returns from the smelter, is now being entered upon. Before the current year closes the smelters at Greenwood and Grand Forks should (like the Trail smelter, also a competitor for Boundary ores) have overcome all preliminary difficulties and have settled down to economic and expeditious treatment of the product of the mines. All the branch railway lines to the mines should within the same time be completed and in effective working order and be supplied with a sufficient number of ore cars to meet the requirements of shipping mines, of which there should by that time be at least a dozen equal to together maintaining a continuous minimum output of five thousand tons of ore per week. The anticipations appear to be well warranted by the actual condition and prospects of the district mines, ten or twelve of which to-day have their development work sufficiently far advanced to allow of ore-stopping being commenced and continued. That they may be more than fully realized is the earnest hope of all who have at heart the material advancement of the Boundary district, and with it that of the province at large.

The names of several mining camps in which the respective mines are situate also appear below.

GREENWOOD (OR PHOENIX) CAMP.

Old Ironsides, Knob Hill and Victoria.—Three 80-horsepower horizontal return tubular boilers; a 10-drill duplex compound condensing Rand air compressor; one 42 feet by 16 inch and three 36 feet by 8 inch air receivers; twelve 3½ Little Giant drills; one 50-horsepower, two 30-horsepower and two 20-horsepower hoisting engines; two 8-horsepower portable hoisting engines; two station pumps—one 14x7x12 Knowles and one size E Cameron—capacity of each 300 gallons per minute; three sinking pumps—one No. 5 Cameron, one 10x7x5x10 Knowles and one 5½x3½x8 Knowles; one tank pump, capacity 60 gallons per minute, with 15-horsepower upright boiler; one 4½x2¾x4 Snow duplex pump; a 15-horsepower electric engine and a 50-light dynamo; safety cage, buckets, ore cars, etc.

[Note.—A 10-drill Rand air compressor with Wheeler's surface condenser, and two 80-horsepower horizontal return tubular boilers, have been ordered for the Knob Hill.]

Brooklyn and Stemwinder.—Two 40-horsepower horizontal return tubular boilers, one 25-horsepower upright boiler, 5-drill Ingersoll-Sergeant air compressor, 36 feet by 8 inches air receiver, four machine drills, two 16-horsepower hoisting engines, two No. 7 Cameron sinking pumps.

Gold Drop.—One 40-horsepower locomotive boiler, 4-drill Ingersoll-Sergeant air compressor, 36 feet by 8 inches air receiver, three machine drills, 5¼x3½x5 inch Snow duplex pump.

War Eagle.—One 80-horsepower horizontal return tubular boiler, half of a 10-drill Rand duplex air compressor, 42 feet x 10 inch air receiver, three 3½ Little Giant drills, 20-horsepower hoisting engine, 14x7x12 Knowles station pump, No. 5 Cameron sinking pump, 4½x2¾x4 boiler feed pump, Wainwright feed water heater.

Snowshoe.—One 70-horsepower horizontal tubular boiler, one 40-horsepower locomotive boiler, 12x8 straight line Rand air compressor, 28 feet x 10 inch air receiver, three 3½ and two 3½ Little Giant drills,

6½x8 hoisting engine, No. 5 Cameron sinking pump.

DEADWOOD CAMP.

Mother Lode.—Two 60-horsepower horizontal return tubular boilers, 18x24 Ingersoll-Sergeant straight line air compressor, 48 feet by 10 inches air receiver, two 3½ Little Giant and three E 24 drills, 7½ x10 hoisting engine, two 5x8 Bacon hoisting engines, 10-horsepower Duke engine and blower, No. 5 Cameron sinking pump, one 4½x2¼x4 and one 3x2x3 boiler feed pumps, Lawrie feed water heater, 10-horsepower Lively electric light engine and dynamo, safety cage, ten ore cars, etc.

The following new Ingersoll-Sergeant condensing plant, etc., was contracted for in March last year for delivery at the Mother Lode mine in June, and for installing which preparation is now being made: A cross compound Corliss condensing air compressor, with compounded aid end and receiver inter-cooler, the high and low pressure steam cylinders to be 22-inch and 40-inch diameter respectively, the air cylinders to be of the piston inlet type, high and low pressure, 19½ inch and 32½ inch respectively and 48 inch stroke, the machine to have a capacity of 30 to 40 drills, and to weigh 166,000 lbs.: two 66x16 horizontal tubular boilers, each 100-horsepower for 125 lbs. working pressure, and to have horizontal smoke connection and ore stack; a 54 foot by 12 inch air receiver; a feed-water heater of sufficient capacity for 350-horsepower boilers; ten E 24 drills; two double-screw and ten single-screw columns with arm and clamp; two iron safety platform cages with safety device and shield roof; two 6-foot sheave wheels; 1,500 feet of 1½ inch wire rope and six steel ore cars with McCaskell wheels and axles.

Sunset and Silver Crown.—On the Sunset: two 80-horsepower horizontal return tubular boilers, half of a 20-drill Ingersoll-Sergeant duplex air compressor, one 48 feet by 16 inch and one 42 feet by 6 inch air receiver, ten 3½ drills, 80-horsepower hoisting engine, No. 5 Cameron sinking pump, 5¼x3¾x5 Northey boiler feed pump, Lawrie feed water heater, safety cage, ore cars, buckets and a complete outfit of tools, etc. At the Silver Crown: 6½x8 hoisting engine and 35 feet by 12 inch receiver.

Buckhorn.—One 80-horsepower horizontal return tubular boiler, half of a 10-drill Rand duplex air compressor, 42 feet by 10 inch air receiver, three 3½ Little Giant drills, 201-horsepower hoisting engine, No. 5 Cameron sinking pump, 4½x2¾x4 boiler feed pump, Wainwright feed water heater.

Morrison.—One 30-horsepower upright boiler, one 3½ Little Giant (steam) drill.

Ah There.—One 35-horsepower upright boiler, two 3½ Little Giant drills, 6x8 Bacon hoisting engine, No. 5 Cameron sinking pump, 3x2x3 Snow duplex boiler feed pump.

Greyhound.—One 25-horsepower upright boiler, 15-horsepower hoisting engine.

SUMMIT CAMP.

B. C.—(B. C. Chartered Co.)—Two 80-horsepower and one 40-horsepower return tubular boilers, one 25-horsepower upright boiler, half of a Class G. Ingersoll-Sergeant air compressor 18x24 rated at ten drills, 12x18 straight line Rand air compressor rated at four drills, 48 feet by 12 inch and 30 feet by 6 inch air receivers, 75-horsepower 12½x15 double cylinder geared hoisting engine, two small hoisting engines, two No. 5 Cameron sinking pumps, 150-horsepower feed water heater, 100-light electric light engine and dynamo, safety cage, ore cars, etc.

Oro Denoro (King Mining Co.)—one 40-horse-

power locomotive boiler, 10x12 Ingersoll-Sergeant air compressor, 28 feet by 6 inch air receiver, three 3½ drills, 6½x8 hoisting engine and sinking pump, capacity 60 gallons per minute.

Maple Leaf (Rathmullen Mining Co.)—One 35-horsepower upright boiler, 10x14 straight line Rand air compressor, 28 feet by 10 inch air receiver, two 3½ Little Giant drills, 6x8 reversible hoisting engine, No. 5 Cameron sinking pump.

R. Bell.—One 25-horsepower upright boiler, 6x8 Bacon hoisting engine. (Larger plant to be ordered shortly.)

WELLINGTON CAMP.

Golden Crown (Brandon and Golden Crown Mining Co.)—One 60-horsepower return tubular boiler, one 40-horsepower locomotive boiler, 12x18 Rand straight line air compressor, 36 feet x 8 inch air receiver, four Little Giant drills, 30-horsepower hoisting engine, 10x7x5x10 Knowles sinking pump, 4x6x4 Snow duplex pump, cage, ore cars, etc.

Winnipeg.—One 65-horsepower return tubular boiler, 14x22 Rand straight line air compressor, 36 feet by 10 inch air receiver, two 3½ Little Giant drills, 6x8 reversible hoisting engine, No. 5 Cameron pump, 3x2x3 boiler feed pump.

Athelstan.—One 35-horsepower upright boiler, 5x5 Bacon hoisting engine, No. 5 Cameron sinking pump.

LONG LAKE CAMP.

Jewel.—One 50-horsepower horizontal return tubular boiler, one 15-horsepower upright boiler, 12x18 Rand straight line air compressor, 28 feet by 10 inch air receiver, three 3½ Little Giant drills, 5x5 Bacon hoisting engine, 10x7x5x10 Knowles sinking pump, Dean sinking pump capacity 60 gallons per minute, 3x2x3 Snow duplex boiler feed pump.

CENTRAL (OR WHITE'S) CAMP.

City of Paris and Majestic.—Two 80-horsepower horizontal return tubular boilers, 10-drill Rand duplex air compressor, 42 feet by 10 inch air receiver, six 3½ Little Giant drills, 6x8 hoisting engine, No. 5 Cameron sinking pump, 4½x2¾x4 Snow duplex pump, Lawrie feed water heater.

COPPER CAMP.

King Solomon.—One 30-horsepower upright boiler, 5x5 Bacon hoisting engine, No. 5 Cameron sinking pump.

SKYLARK CAMP.

Last Chance—Boundary Creek Gold Mining Co., of Spokane.—One 35-horsepower upright boiler, 8x12 hoisting engine, No. 5 Cameron sinking pump.

NORTH FORK OF KETTLE RIVER.

Pathfinder.—One 80-horsepower horizontal return tubular boiler, 16x24 Rand straight line air compressor, 42 feet by 10 inch air receiver, two 3½ Little Giant drills, 6x8 hoisting engine, No. 5 Cameron sinking pump, 3x2x3 boiler feed pump.

Golden Eagle (Royal Victoria Gold Mining Co.)—One 32-horsepower upright boiler, 5x5 Bacon hoisting engine, No. 5 Cameron sinking pump.

ELECTRICAL TRANSMISSION AT ASHCROFT, B.C.

(By Wm. Baillie.)

It is rather surprising to find in Ashcroft a modern and well-equipped electric transmission system, which provides the town with power for electric lighting and for pumping the water supply, and has a large surplus for prospective manufacturing enterprises.

This system was inaugurated and is owned by the Ashcroft Water, Electric and Improvement Company, who, two years ago, secured a valuable water

power on the Bonaparte River, four miles from Ashcroft and there constructed a dam with the object of generating the requisite power for supplying Ashcroft besides providing the motive force for a pump to raise water to irrigate a large tract of land known as Boston Flats, situated two hundred and fifty feet above the site of the power house.

The dam, as shown in our illustrations, is in a narrow canyon of the river and is solidly constructed of heavy timbers, anchored in the rock at the bottom and on the sides. This structure is two hundred feet long and narrows from thirty feet wide at the base to twenty on the top, and is filled in with rock and gravel. At present there is a forty-foot head of water, giving some twelve hundred horse-power, and

Victoria, as were also the shafting, castings for the suction pipe and the intake gate.

The power house is a large two-storey building, with the ground floor divided into two sections, one of which contains the rotary pump mentioned above. This is a very large machine weighing over twenty tons, was manufactured by the Roots Company of Connersville, Indiana, is of the latest type, fitted with self-oiling bearings, and embodies the most modern improvements. With this pump the company estimate they will irrigate eventually one thousand acres of land which although of a very fruitful description has hitherto remained unproductive on account of the lack of water. Five hundred acres are already fenced, buildings have been erected, and a



View of the Company's Power House and Dam on Bonaparte Creek.

this can be increased at any time by adding to the height of the dam. The flume, twelve feet high by twenty-five feet wide and one hundred and fifty feet long, is seated on a rock base and leads to the power house.

In the penstock are placed two thirty-inch horizontal Dominion waterwheels, made by the Greely Company, Toronto, and directly connected by gears to the waterwheel shaft is a Roots rotary force pump, which with seven hundred horse-power will force nine thousand gallons of water per minute to the Boston Flats, a vertical height of two hundred and fifty feet. The pipe line leading to the Flats is nine hundred feet long, and is of steel pipe twenty-four inches in diameter, made by the Albion Iron Works Company, of

system of irrigating canals excavated. The main canal is ten feet wide and four feet deep.

This method of irrigation by means of a pumping plant is a departure in British Columbia agriculture and the result will be awaited with interest. The buildings on the Flats are to be lighted by electricity, and will have telephone communication with Ashcroft.

In the other section of the power house are placed a pair of twelve-inch McCormack horizontal turbines, made by the William Hamilton Company, of Peterborough, enclosed in a steel case connected with the penstock. To these are belted a 75-kilowatt three-phase alternating generator, which delivers current at 2,080 volts over a three-wire transmission line to Ash-

croft, where, by means of a series of transformers, the current is converted to 104 volts, at which pressure it is used on the lighting circuit.

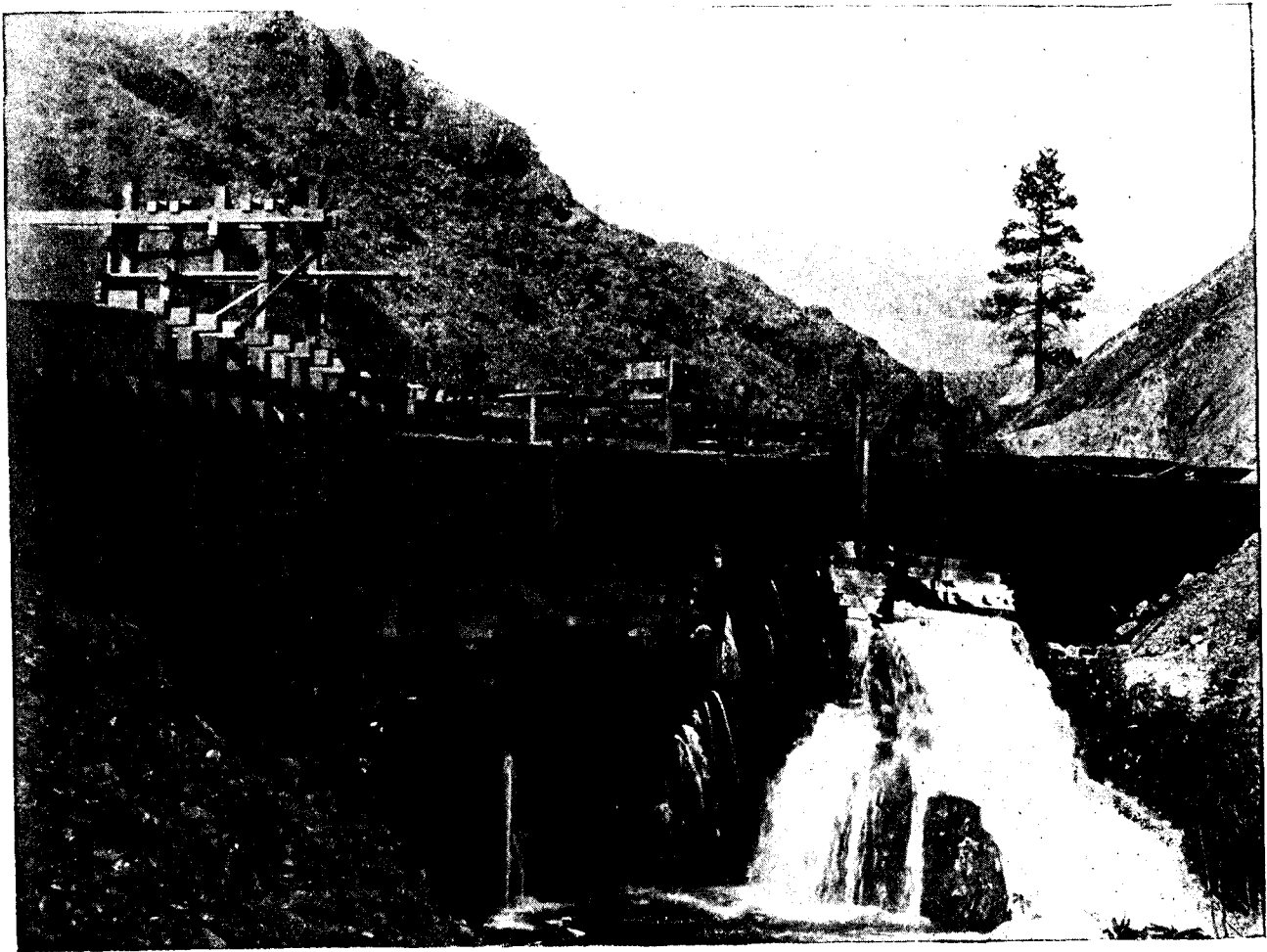
Nearing Ashcroft, a branch of the transmission line is conducted to the town pumping station on the Thompson River, where from two converters the current drives a twenty horse-power induction motor, to which is belted an 8x10 Northey triplex force pump, supplied by the Northey Manufacturing Company of Toronto, which forces 250 gallons per minute to a reservoir at a height of two hundred feet, thus sustaining a pressure of over eighty pounds on the mains. The distributing mains are of five and six inch lock-joint steel pipe made by the National Tube Works of Pittsburgh. The pumping station, power

REVIEW OF THE ALASKAN BOUNDARY QUESTION.

(By Alexander Begg, Author of the History of British Columbia.)

(Continued from Last Month.)

ON the receipt of the treaty duly executed from Mr. Stratford Canning the Rt. Hon. G. Canning under date April 2nd, 1825, acknowledged the same as follows: "Sir: Your despatches were received on the 21st of March. Having laid them before the King, I have received His Majesty's command to express His Majesty's particular satisfaction at the conclusion of the treaty respecting the Pacific Ocean and northwest



View of Dam on Bonaparte Creek.

house and the company's office in Ashcroft are all connected with a telephone circuit.

All the electrical machinery and apparatus was procured from the Canadian General Electric Co., of Peterborough, Ont., and the heavy pinion and mortise gear for the rotary pumps from Goldie & McCulloch, of Galt., Ont.

The Ashcroft Water, Electric and Improvement Company also operate a large sawmill at Kamloops and are there erecting a planing mill and sash and door factory. Peter Ryan, registrar of Toronto, is president of the company; John Shields, vice-president; C. R. Doxat, treasurer; and James C. Shields, secretary.

coast of America, in a manner so exactly conformable to your instructions, and to direct you to express to the Russian Government the pleasure which His Majesty derives from the amicable and conciliatory spirit manifested by that government in the completion of that transaction."

The treaty having been completed and accepted as satisfactory by each of the high contracting parties, the occupancy of the northwest coast of America was thenceforward between the Hudson Bay Company and the Russian Company—the former with headquarters at Fort Vancouver, on the Columbia River (transferred to Victoria, Vancouver Island, in 1843—its original name, "Fort Camosun," was continued

until 1846, when it was named Victoria); the Russian Company had headquarters at Sitka. The two companies managed their affairs without much friction under the treaty. About the year 1838, for mutual convenience, a lease was granted by the Russian governor at Sitka, to the Hudson Bay Company of all rights and privileges possessed by Russia for an annual rental of two thousand land-otter skins. This arrangement was continued between the fur companies until about the time of the purchase of Russian America by the United States, in 1867.

As soon as Secretary of State Seward obtained possession of the Russian territory, he had the Russian flag at Sitka lowered, and the United States "Stars and Stripes" hoisted in its stead. For some time after the purchase of Alaska from Russia, public affairs in British Columbia were in a state of transition, from the Colonial government to that of Confederation; so that but little attention was paid to what was going on in the remote and almost unknown regions of Alaska. The federal government did not show very much interest in having the international boundary line defined and settled. British Columbia was not in a position to take the initiative, and her leading men had to be content with making representations to the Dominion Government.

In 1885, the late Mr. T. F. Bayard, then United States Secretary of State, revived public interest in the subject, by applying to Lord Salisbury, through the United States ambassador at the London Legation, for concurrence in appointing a commission to define the Alaskan boundary, as had been recommended by President Grant in 1872. Lord Salisbury concurred in the appointment as requested. Colonel D. R. Cameron, R.A., was requested in March, 1886, to report on the boundary question. His report was completed September, 1886.

The communication to Lord Salisbury from Ambassador Phelps was chiefly an echo of Mr. Bayard's letter, requesting concurrence in the appointment of a commission to define the Alaskan boundary. This document now becomes specially important, inasmuch as it embodies Mr. Bayard's views of the line of demarcation from its commencement at the southernmost point of Prince of Wales Island, and as those are the views advocated by the United States as being the boundary line set forth in the treaty, viz., via Portland Canal, to the 56th parallel of north latitude. On the other hand, British subjects in British Columbia and elsewhere in the Dominion of Canada, base their views on the wording of the treaty, and on the line of direction stated therein, as outlined by the Right Hon. George Canning in his despatch to Sir Charles Bagot, July 12th, 1824, and enlarged in accordance with Mr. Stratford Canning's instructions of December 8th, 1824, in connection with his letter to the Emperor of Russia from His Britannic Majesty, George IV., which, undoubtedly, with the addition of the whole of Prince of Wales Island being conceded to Russia, had a pacific influence in rendering the treaty acceptable to the Russian court.

Mr. Bayard probably expected that his route would pass unchallenged, when he remarked that his conviction was "that it was the intention of the negotiators that the boundary line should directly follow the broad natural channel of Portland Channel, midway between the shores, and extend, if need were, inland in the same direction until the range of hills should be reached at or near the 56th parallel." "It is not," he continues, "therefore conceived that this water part

of the boundary line can ever be called in question between the two governments." It may be remarked here that there was no such channel marked on any of Captain George Vancouver's maps or charts. Portland Canal was so named by him and referred to in his "Voyages" published in 1798, under the authority of the British government. Another edition of Vancouver's Voyages was published in 1801, and the change from Portland Canal to Portland Channel is made, without any remark or authority. The substitution of Portland Canal for Portland Channel has caused the difficulty of reconciling the description in the treaty of the line of demarcation, which according to Mr. Bayard's interpretation, and also that of Colonel Cameron, was under the necessity of going east to reach Portland Canal instead of north—and more particularly in the Right Hon. G. Canning's despatch—from south to north to the 56th parallel of north latitude; so, therefore, it appears, the description of the line of demarcation from Cape Chacon to the 56th parallel, given by Sir Charles Bagot in statement "D," together with the confirmation of the same by G. Canning in his despatch of 12th July, 1824, furnish proof that the framers of the treaty applied the name Portland Channel to Clarence Strait; but as the line of demarcation, according to Sir C. Bagot's description, had to leave Clarence Strait, on reaching Duke of York Island, to meet the requirements of the treaty, must proceed eastward and follow Ernest Sound until the coast of the continent was reached at 56 degrees. The combined Clarence Strait and Ernest Sound form the channel prescribed in the treaty, which was called Portland Channel—in conformity with the treaty, but which would have been impracticable in connection with Mr. Bayard's or Col. Cameron's line of demarcation.

Article IV of the treaty modified and annulled several propositions made before the suspension of negotiations by Sir C. Bagot, which were allowed to drop. Amongst those were the zealous efforts of the Russian plenipotentiaries to obtain Portland Canal as a portion of the eastern boundary line. The diplomatic action of Mr. Stratford Canning in connection with the letter of King George IV, foiled the expectations of the Russian plenipotentiaries, and left them no option but to sign the treaty as made out in convention. This was accomplished by the concession of the whole of Prince of Wales Island to Russia. It swept away many difficulties and left the terms of the treaty clear and capable of reasonable interpretation. It also pointed out a practicable water boundary from the 56th parallel of latitude where the line of demarcation reached the continent in accordance with the treaty, ten leagues from the ocean.

To continue the line of demarcation from the point on the continent at the 56th degree, towards the intersection of the 141st meridian near Mount Elias, it would be necessary to retrace westward through Ernest Sound, the former line from Cape Chacon along the east coast of Prince of Wales Island, and proceed along the extended line northward to the end of the island, ten marine leagues from the ocean, and thence northerly between islands Kuiu and Kupreanof to Prince Frederick Sound, and on reaching the 57th degree of latitude proceed west to Chatham Strait, which could be followed to Icy Strait or to Taylor Bay for convenience of landing on the strip of land provided on the continent within ten marine leagues from the ocean to the intersection of the 141st meridian.

In an article on the Alaskan Boundary, which appeared in November (1899) number of the *National Geographic Magazine*, the Hon. John W. Foster, ex-Secretary of State for the United States, is reported as stating that "much of the difficulty on reaching an agreement on this point (the correct location of the boundary) grew out of the imperfect geographic knowledge of the period." That need not follow, for Mr. Foster admits and writes that "in 1792-95, George Vancouver, under the direction of the Admiralty, made the first accurate and scientific survey of the northwest coast of America, and his charts were published in 1798. These charts were for more than a generation the basis and source of information of all maps of that region."

Mr. Foster, delineating the first section of the treaty of 1825, quotes Article III and states, it provides that "commencing from the southernmost point of the island called Prince of Wales Island, which lies in the parallel of 54 degrees 40 minutes north latitude * * * the said (boundary) line shall ascend to the north along the channel called Portland Channel as far as the point of the continent where it strikes the 56th degree of north latitude."

The foregoing quotation from the treaty should be enough to satisfy Mr. Foster, that as the treaty expressly and plainly says, the boundary should commence at the southernmost point of Prince of Wales Island and shall ascend to the north, etc., it is impossible to reach the 56th degree on the continent by the line indicated in the treaty by going east to Portland Canal, which is not mentioned in the treaty; neither is there any authority in the treaty of 1825 to commence the boundary line at Cape Muzon as it has been drawn on the United States official charts and maps. Although Cape Muzon is situated on Dall Island to the west of Prince of Wales Island and may yet be claimed by Great Britain as belonging to Queen Charlotte Islands, immediately opposite across Dixon Entrance.

"The United States holds," Mr. Foster further states, "that under this provision the line starting from the extremity of Prince of Wales Island, shall enter the broad, deep, and usually navigated opening of Portland Canal * * * and pass up to its head, and thence on the continent to the 56th degree of latitude." There is nothing in the treaty to indicate such a course; besides, the opening of Portland Canal (or channel as Mr. Foster is pleased to name it) is seldom navigated, as there is no trade in that direction. In the same paragraph Mr. Foster undertakes to define "the present contention of Great Britain," which he says is understood to be "that the line from the extremity of Prince of Wales Island should enter the tortuous and narrow channel, now known on the British Admiralty charts as Pearse Canal, and thence up Portland Canal to the 56th degree; thus placing Wales, Pearse, and a few small Islands in British Territory.

No such contention has ever been published or advocated by any party having authority in Canada or Great Britain to adopt such a route, which is entirely opposed to the wording of the treaty; and the statement or contention said to be held by the United States, that the line should "enter the broad, deep and usually navigated opening of Portland Canal, etc.," is entirely fallacious. Neither have those who have examined the question in an unbiased manner, ever thought of the boundary line going east by way of Pearse Canal or by Portland Canal. The contention

of British subjects who have studied and become acquainted with this boundary question, is, that the line should from Cape Chacon, follow Clarence Strait north, nearly along the 132nd meridian, and in accordance with the description given in the treaty, until opposite Ernest Sound, when it runs eastward through Ernest Sound, until it reaches the coast of the continent at 56 degrees, as specified in the treaty; thence returning westward to the boundary already outlined from Cape Chacon, along the east coast of Prince of Wales Island, it follows the coast of the island to its northern end; thence following a conventional water boundary, ten marine leagues from the ocean as required by the treaty until the continental shore of the North Pacific is reached, and then along that coast, ten marine leagues from the ocean, to the 141st meridian, and thence along that meridian to the Arctic Ocean.

This brings us to a late date in the review of this boundary question. The Joint Commission which had been appointed to determine the line between Alaska and Canada met at Quebec and discussed the question for weeks, without being able to agree on a settlement, so they adjourned *sine die*. They met at Washington, D.C., in February, 1899; but found they were still unable to agree on the question. The British commissioners proposed it should be referred to arbitration and that an "arbitral tribunal" be immediately appointed to consist of three jurists of repute, one on the part of Great Britain, one on the part of the United States, and of a third jurist to be selected by the two persons so nominated, to be governed by the following rules:

(a) "Adverse holding or prescription during a period of fifty years shall make a good title. The arbitrators may deem exclusive political control of a district, as well as actual settlement thereof, sufficient to constitute adverse holding or make title by prescription."

(b) "The arbitrators may recognize and give effect to rights and claims resting on any other ground whatever valid according to international law, and on any principles of international law which the arbitrators may deem applicable to the case, and which are not in contravention of the foregoing rule."

(c) "In determining the boundary line, if territory of one party shall be found by the tribunal to have been at the date of this treaty in the occupation of the subjects or citizens of the other party, such effect shall be given to such occupancy as reason, justice, the principles of international law, and the equities of the case shall, in the opinion of the tribunal require."

The commissioners of the United States accepted the foregoing proposals made as the basis of adjustment, but desired the rules modified as follows:

Rules (a) and (b) to stand as submitted, but (c) to read as follows: "In considering the 'coast' referred to in said treaties, mentioned in Article III, it is understood that the coast of the continent is intended. In determining the boundary line, if territory of one party shall be found by the tribunal to have been at the date of this treaty in the occupancy of the subjects or citizens of the other party, such effect shall be given to such occupancy as reason, justice, and the principles of international law shall, in the opinion of the tribunal, require; and all towns and settlements on tide water, settled under the authority of the United States and under the jurisdiction of the United States at the date of this treaty, shall remain

within the territory and jurisdiction of the United States."

In reply the British commissioners stated that they were "absolutely unable" to accept the change in rule (c), and said: "In considering the 'coast' referred to, while it was probably intended by this clause that the line should be drawn upon the continent, the language used is open to misconstruction." They also objected to the words added "that all towns or settlements" on tide water, settled under the authority of the United States, etc., as being a marked and important departure from the rules of the Venezuela boundary reference, and could not be adopted.

Referring to the arbitral tribunal proposed by the United States commissioners, which was to consist of six impartial jurists, three on the part of Great Britain, and three on the part of the United States—the United States commissioners were of opinion that the selection of an umpire should be made from the American continent. It was finally agreed by and between the commissioners that all subjects before the Joint Commission should be referred to their respective governments. The commission then adjourned and separated.

Since the appointment of the Joint Commission of the Washington Convention of 1892, which was formed "with a view to the ascertainment of the facts and data necessary to the permanent delineation of the boundary line from latitude 54 degrees 40 minutes northward to the 141st degree of longitude, in accordance with the spirit and intent of the existing treaties in regard to it between Great Britain and Russia, and between the United States and Russia," great and important changes have taken place in those northern regions. The valley of the Yukon has been found to be one of the richest gold producing districts in the world. Lynn Canal, as the most available route to the Yukon country, has been adopted, with Skagway as the gateway to the Klondike and Dawson. Hundreds of thousands of miners and others crowded there in 1897-8, in the face of extreme danger and difficulty.

In the meantime another gold mining district was found in the northern part of Cassiar, British Columbia, near Atlin and Teslin Lakes. A prospecting party, by way of Juneau, came through there in 1898 to Atlin Lake and discovered, in that neighbourhood rich gold diggings. Other parties soon followed, and before winter set in, over \$100,000 had been mined. An Act of the Legislature of British Columbia (the Alien Act) was passed prohibiting miners not subjects of Great Britain from gold mining in British Columbia under certain restrictions. This prevented a large number of intending miners from taking up locations in the Atlin district, and limited the output of 1899; yet it is computed to reach fully one and a half million dollars.

Intending miners, therefore, took up claims in the Porcupine district, within the boundary strip claimed by the United States. They made their headquarters at a small Indian village, Klukwan, fifteen miles from tide water, at the head of Chilcat Inlet, a branch of Lynn Canal. A *modus vivendi* has been passed on the Tichini River, as a temporary boundary, as claims do not cross from one side of the river to the other. Neither has this temporary boundary any bearing on the main question of the 1825 boundary line proper, which must be left to future discussion and arrangement. A *modus vivendi* has also been passed at Dyea

Pass and White Pass, at the summit—for similar purposes.

So the matter rests at present, with the exception, however, that United States subjects continue to squat on locations for mining and fishing in the island Revilla Gigedo, and other islands in that locality, which seems to add to and intensify the complications and difficulties of a final settlement of the boundary dispute.

Although Hon. ex-Secretary of State Foster stated that "much of the difficulty of reaching an agreement on the correct boundary line grew out of the imperfect geographical knowledge of the period," an investigation of the circumstances shows by reference to Capt. Vancouver's maps and charts, that Mr. Foster's assertion cannot be supported. For instance, the description of Admiralty Island and the neighbouring continental shores point out most distinctly that along the precipices, inlets, and glaciers, was no suitable place for a boundary line. The modern engineers and surveyors of the Joint Commission proved this clearly. They could not travel over those places, and were obliged to call in the aid of photography to arrive at the heights and distances of the region.

Sir Charles Bagot, and the Home Secretary had these maps and charts and descriptions before them, and so outlined the line of demarcation between Russian and Great Britain, according to the treaty, at the distance of ten marine leagues from the ocean. To make their meaning clear, they indicated a landmark on the continent at the 56th degree of latitude; and gave Russia the whole of Prince of Wales Islands.

As shown in Vancouver's Atlas, sheet 7, the waters of the Pacific Ocean washed Prince of Wales Island, from Cape Chacon, the southernmost portion of that island, along its eastern shore; following the northern shore and turning southward at Point Baker, the name "Duke of Clarence Strait" is given along the island from Cape Chacon until the 56th degree of latitude is reached opposite Cape Decision. On the chart referred to it is recorded that Captain Vancouver passed this point 22nd September, 1793, and 24th August, 1794.

But the treaty mentions that the boundary line is required to reach latitude 56 degrees at the coast of the continent. This is accomplished by passing along Clarence Strait and Ernest Sound to the coast. In Sir Charles Bagot's description (in statement "D") of the proposed line, to the Russian plenipotentiaries, which is recorded in a despatch to Mr. G. Canning, he says: "It would appear that a line traced from the southern extremity of the Straits named Duke of Clarence Sound, by the middle of those straits, to the middle of the straits that separate the islands of the Prince of Wales and the Duke of York, and the islands situate to the north of the said islands; thence towards the east by the middle of the same strait to the continent, and thence prolonged in the same direction and manner already proposed by His Majesty's plenipotentiary to Mount Elias, or to the intersection of the 140th (since changed to 141st) degree of longitude, would form a line of demarcation which would conciliate, perhaps in a satisfactory manner, the reciprocal interests, present and future, of both Empires in this part of the globe."

There is no mention of Portland Canal or going east in the foregoing description. Further, Mr. Canning in his instructions to Sir Charles, dated July

12th, 1824, distinctly says: "His Majesty's government have resolved to authorize Your Excellency to consent to include the south points of Prince of Wales Island in the Russian frontiers and Prince of Wales Island within the Russian frontiers, and to take, as a line of demarcation, a line drawn from the southernmost point of Prince of Wales Island, from south to north through Portland Channel, till it strikes the mainland in latitude 56 degrees. The route was named Portland Channel, presumably, as Clarence Strait, as we have seen, was left opposite Ernest Sound. It would be necessary, therefore, at the point on the coast of the continent, that a new departure should be made to reach the intersection of the line with the 141st meridian, near Mount Elias.

It would appear from Article IV of the treaty that Stratford Canning decided on the boundary from that point, being drawn ten marine leagues from the ocean. The easiest, fairest and most convenient plan to do that would be to retrace the line of deviation back to that already run through Clarence Strait, named Portland Channel in the treaty, and continue that line along the eastern and northern shore of Prince of Wales Island, as already outlined in this review. Such an arrangement would obviate the attempt of forming a boundary line along the frontier of the continent, which would prove useless and impracticable. It would leave the frontier of British Columbia intact, and furnish the United States (instead of Russia) with ample facilities to carry on any industry along the large islands fringing the Pacific Ocean and along the strip of continent, extending about five degrees of longitude from Glacier or Taylor's Bay, beyond Icy Strait. It would give them any number of excellent harbours, and the control of valuable fisheries and the timber on Prince of Wales Island, and the other ocean frontier islands north to the continent at Cross Sound. The arrangement was made between two friendly powers, and after the treaty was signed, was acknowledged to be satisfactory to each—and it should be so to the present day, although many United States sympathizers do not seem to interpret the treaty in that light.

Political feeling runs very high in the United States and it may be that this boundary question is used by the United States press to influence parties pro or con as the case may be. It has been discussed by their leading writers in the New York, Chicago, San Francisco and other papers. The Seattle papers, being our nearest neighbours have been the most lively. The Seattle Chamber of Commerce has discussed very forcibly what they call "the British Claims." They, of course, advocate that the boundary line should be run along Portland Canal. The *Victoria Colonist*, in 1895, referring to a report of the Seattle Chamber of Commerce, says: "From the language of the treaty it will be seen that the boundary commences at the most southernmost point of Prince of Wales Island and then runs north until it reaches a point on the mainland at the 56th degree of north latitude. Now if any member of the Seattle Chamber of Commerce looks at the map drawn by Vancouver or anyone else, and starting north from the most southern point of Prince of Wales Island, and keeping on in that direction until he reaches the 56th parallel of latitude, he will certainly trace along a channel, but not what is called Portland Canal, nor will he go near the Portland Canal, or the line which our good neighbours contend is the true boundary line. It is easy to give a new name to a channel, or to mis-

take one channel for another, but the points of the compass have always the same name, and are always in the same direction. Our contemporary and those who contend for the line now assumed to be the true one, must see that they start in the wrong direction. What would be thought of the surveyor who, when he was instructed to start from a point clearly defined northwards, ran his line due east, and afterwards had the impudence to contend that the line was right, and according to his instructions? Let our American friends "stick to the point"—Point Chacon—and go north as the treaty enjoins from that point, and they will find they will not get near the line they are trying to make the people believe is the right one. Besides, Portland Canal is not mentioned in the treaty. We trust we have been explicit enough in this article. We contend that our American friends start in the wrong direction; and we need not tell them that in beginning to run a line, it is of the utmost importance that the compass points exactly in the direction the description requires. The least variation the one way or the other vitiates the whole line and the work must be done over again. In this Alaska line our friends are something like 90 degrees astray."

The House of Representatives of the State of Washington, in 1895, passed the following resolution, calculated to arouse anything but peaceful feelings amongst the people, relative to the fair settlement of the Alaskan boundary question. It reads: "Whereas England, with her usual cupidity and avarice, and pursuant of her time-honoured custom of attempting, at all hazards, to get control of all newly developed sources of wealth, in whatsoever country situated, and to appropriate to her own benefit the present and prospective commerce of the seas, whether rightfully or otherwise, has asserted claims to harbours, bays and inlets, through which the greater portion of the commerce and trade of and with the territory of Alaska must be carried on, and which, of right, belongs to the United States.

"And whereas the United States will be robbed and despoiled of the trade and commerce of a veritable empire, and suffer a diminution of the wealth with which nature has endowed said territory, if the claims and policy of Great Britain as aforesaid shall prevail:

"Therefore, be it resolved by the House of Representatives of the State of Washington, the Senate concurring, that our members of Congress be requested, and our Senators instructed, to use all honourable means, that the rightful claims of the United States relative to said harbours, bays and inlets, be scrupulously maintained, and that an unequivocal policy on the part of the United States government in relation thereto, be fully carried out."

The editor of the *Colonist*, after quoting the resolution, quietly remarks: "This should be preserved as a literary and legislative curiosity. It is amazing that men, supposed to be intelligent and sensible, should stultify themselves by voting for such a resolution as the above. Those who supported it, we suppose, thought it would tickle the ears of ignorant and anti-British electors, for it seems there is nothing too absurd for the average American legislator to do or say, in order to increase his popularity. England, as far as we have heard, had done nothing towards rectifying the boundary line between British Columbia and Alaska. The complaint in Canada is, that Great Britain on these boundary questions is a good deal

too slack; that she has allowed wide-awake American diplomatists to take advantage of her. With respect to this matter of the Alaskan boundary she seems to be quite apathetic. The matter has been quietly discussed in this province lately, but all that has been said is that Great Britain should take measures to ascertain the true boundary line, and not allow herself to lose territory through the carelessness or the ignorance of officials, either British or United States." The members of the legislature of the State of Washington may make themselves easy about the Alaskan boundary. The British want no more territory than is justly and legally theirs, and that they believe they will get without trouble when the two governments concerned, go about settling the boundary question in earnest. If the coasts, harbours, bays and inlets claimed by Great Britain do not belong to her, they will be readily surrendered when the day of settlement comes, let the State of Washington politicians resolute as they may. If they are not on the British side of the line British subjects are quite content that they should remain in the possession of the United States. That is all there is about it."

The librarian of the Province of British Columbia in a paper from him in the *Canadian Magazine* said: "Every circumstance and reasonable assumption favoured the contention that the Portland Canal of Vancouver's chart, is not the Portland Channel meant in the Treaty. A line through Portland Canal is wholly inconsistent with and contradictory of the general terms of the clause in question. Its acceptance in determining the boundary leads to an absurdity. Great Britain, therefore, is not bound to accept it as the boundary line."

The *Canadian Gazette*, London, January 30th, 1896, has the following editorial remarks: "We publish this week a memorandum by Mr. Alexander Begg, who has given careful study to the records here in London, which seems to show that the meaning of the treaty of 1825 is clear in determining that the boundary line, starting from the southernmost point of Prince of Wales Island, shall run northward along the channel which we now know as Clarence Strait, but which the treaty describes as Portland Channel. To assume, as United States maps do, that the channel meant is Portland Canal, an inlet into the British mainland, is not only to contradict the plain meaning of the treaty, but to make nonsense of the explanatory statements of Sir Charles Bagot and Mr. Canning, at the time of the negotiation of the treaty. We know no reason why Canada should hand over three million acres of land, and an all-important strategic position to the United States, when the treaty clearly stipulate that she should retain them."

On the 5th of March, following, the *Canadian Gazette* returned to the subject, and said: "General W. W. Duffield, superintendent of the United States coast geodetic survey, replies to the statements made in the *Canadian Gazette* of January 30th above quoted." The editor says: "I propose to examine that reply of General Duffield, for, as I shall show, it only strengthens the case for an immediate inquiry into the circumstances, whereby United States maps claim as United States territory three million acres of land in a position of high strategic importance on the Pacific Coast; which the treaty of 1825 assigned beyond doubt to British sovereignty."

General Duffield is stated to have said in his reply that he attaches no importance to the despatch which

asserts that the United States has no right under the Anglo-Russian treaty of 1825, to 3,000,000 acres of land opposite Prince of Wales Island. The General is said to discredit the statement for several reasons: First, because, as he puts it, the language of the Anglo-Russian treaty (and that used by Russia in the transfer to the United States), are identical as far as the boundaries are concerned; those treaties prescribe that the starting point shall be the most southerly part of Prince of Wales Island, and that the line shall then proceed north through Portland Canal until it reaches the 56th parallel of latitude."

(To be Continued.)

COMPRESSED AIR PLANT AT AINSWORTH

THE first drill ever run by compressed air derived direct from falling water, under the Taylor patents, was started in operation in April at the camp of Ainsworth, the plant having been installed by the Kootenai Air Supply Company of Nelson, B. C.

Reference was made to the construction details of this plant in the *MINING RECORD* some months ago, but now that the plant is completed, and the compressed air automatically made, is being distributed throughout the ramifications of the camp and in the great variety of uses in mining camp work it is of more than passing interest to the great army of mine owners to whom compressed air is the necessity of their daily business, and no one can go to Ainsworth and see the novel features of the installation there—the water collecting the free air from nature, carrying it into the bowels of the earth, and leaving it tightly boxed in a chamber compressed to 87 lbs. pressure ready for the drill, and passing on down the creek to find its tortuous way to the ocean—without being impressed with the simplicity and effectiveness of this great invention.

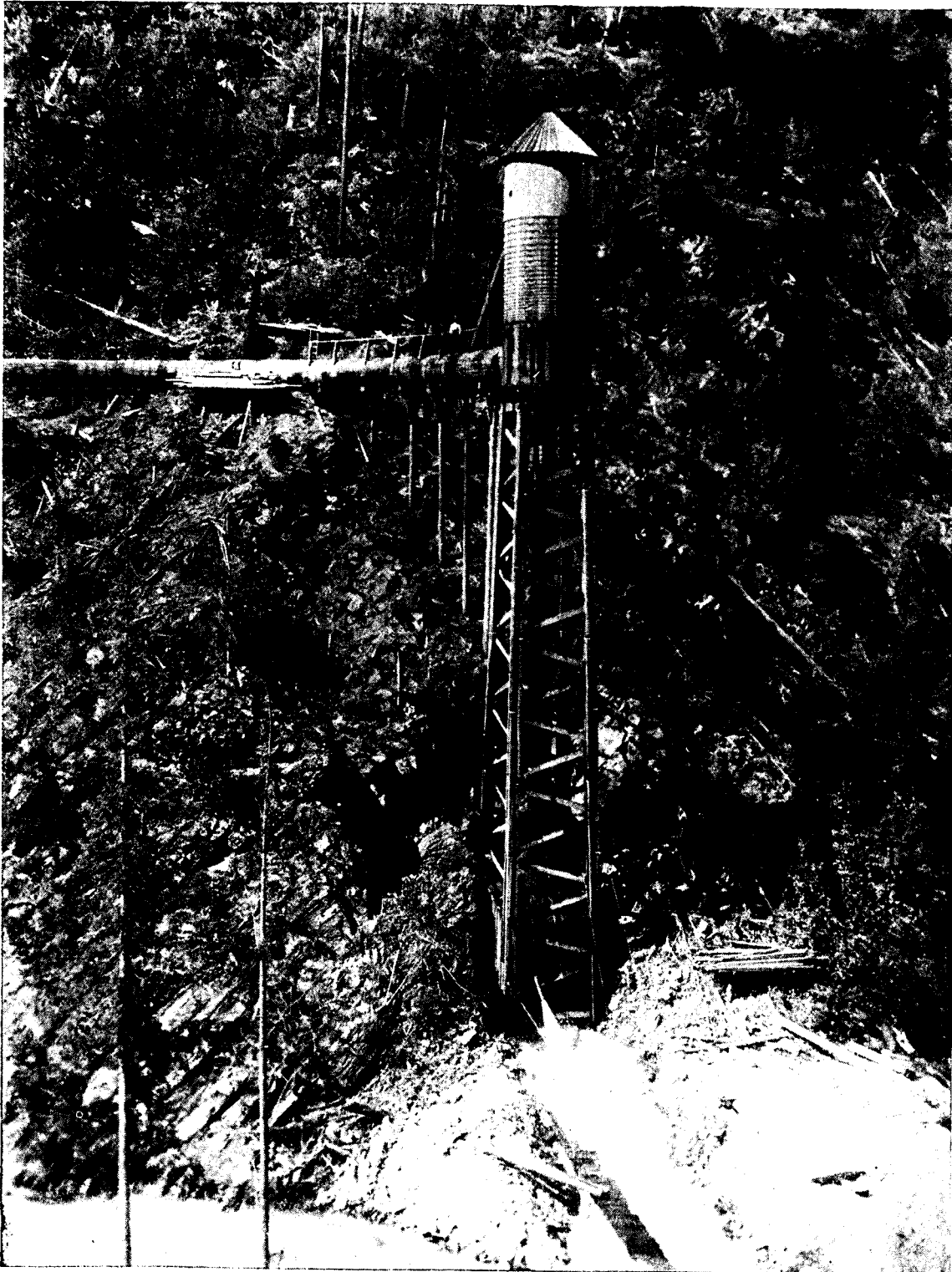
The whole process of converting the raw energy into manufactured power ready for delivery through the pipe lines, is absolutely automatic, with no machinery of any kind, and so long as the water comes from the flume the compressed air is being made.

DETAILS OF THE WATER POWER PLANT.

The plant is located on Coffee Creek to the south of Ainsworth and about $2\frac{1}{2}$ miles from the principal operating mines. The creek has a flow varying from 2,500 cubic feet per minute to several thousand, and the flume used is stave barrel construction, round steel bands being bolted around it every three feet. The flume is 1,350 feet in length, 5 feet diameter in the clear, the available head at the compressor being $107\frac{1}{2}$ feet. The water at the compressor tower is received in a wooden tank 12 feet in diameter, height 20 feet; a downflow pipe passes from the water level through the bottom of this tank down perpendicularly and at the creek level a shaft was sunk 210 feet deep. The downflow pipe (which is 2 ft. 9 in. in diameter, outside measurement of stave pipe construction throughout, the stay bands being set from 6 inches to 3 feet apart, dependent on the pressure to which the particular section is subjected) passes on down in the middle of this shaft, terminating in a great steel bell shaped chamber at the bottom. The down flow pipe discharges into a deep groove being open to the chamber in about its middle, the so called groove being open to the chamber. The dimensions of this chamber are height 17 feet, diameter 17 feet, the bell shaped bottom standing about two feet from the bot-

tom of the shaft, thus allowing the water to pass out. The discharge of the mingled water and air from the downflow pipe into this groove causes it to swirl around the whole circumference of the chamber, some

shaft on the outside of the bell and the downflow pipe to the level of the creek. This back water column is an important factor in this system of compression; its weight on the falling water in the downflow pro-



Tower of Compressor Plant on Coffee Creek, Ainsworth District.

51 feet, giving the air an opportunity to leave the water and to rise into that portion of the chamber which is above the line of the channel, while the water drops below to the rock bottom of the shaft, and, the water in the supply tank at the head) rises in the

ducing the pressure, every $27\frac{1}{2}$ inches of height of column of backwater, increasing the pressure of air and water in the downflow pipe one pound: Thus the shaft being 210 feet in depth, and the depth of the groove which is the effective back head, being

200 feet, the air pressure roughly will be, 200 feet divided by $27\frac{1}{2}$ inches, or 87 pounds, which the gauge on the compressor records. The air in the chamber has been isothermally compressed, the moisture has been absorbed from it by the water which surrounds

of the dividing line between the air and water in the chamber, and whenever more air is being made than is being used, the air displaces the water, and the surplus passes out of this pipe. It is discharging into nature through the pipe at the foot of the trestle in



Pipe-Line Taylor Air Compressor Plant at Ainsworth.

each globule in its passage down, and it goes to its useful work three times dryer than the original air that was entrained cold and pure. A goose neck pipe reaches from the surface of the creek to the level

the accompanying photograph; on the other hand when more air is being drawn than is being made, a pressure valve on the surface of the ground shuts off the flow until the automatic air maker catches up

to the demand. In other words, by this device the pressure cannot vary to exceed one pound, or $27\frac{1}{2}$ inches of water column, and the compressor plant can be left alone to do its work perpetually.

THE AIR MAKER.

The accompanying sketch plan shows the elevation and plan of the tank at the head of the tressle, where the water is received from the flume and the air is entrained. The air maker is an inverted iron tank ed funnel of the downflow pipe. It is seven feet in diameter, and arranged with a screw lift, so that the amount of water allowed down the downflow pipe can be regulated. Around the circumference of this tank are inserted 3,000 pieces of $\frac{3}{4}$ inch gas pipe, the upper orifice of which is open to the air, the lower orifice being in the water, all of which must pass these lower orifices in rushing down the downflow

and the area of the shaft 32 square feet. The speed of the water in the penstock or down flow pipe is $34\frac{1}{2}$ feet per second. The amount of free air taken in under these conditions is 85 cubic feet per second, or 12 cubic of air compressed to 87 lbs. The motor air horse power will be 465. The efficiency of the plant will vary with flowage. At a later date complete data will be available under a variety of different conditions.

THE PIPE LINE.

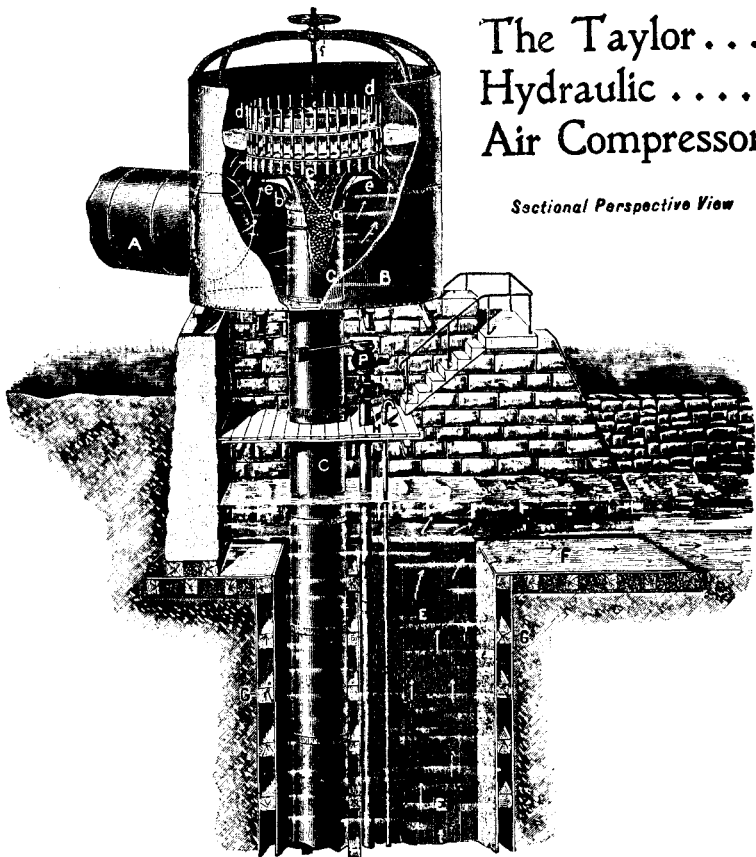
In all the construction a light lap welded pipe with screw joints has been used. The air leaves the compressor in a nine inch pipe, branching some little distance out, one branch being left for later construction, the main branch running north parallel to the Kootenai Lake to the mines round Loon Lake. This branch is of the following dimensions, 6,200 feet of $7\frac{1}{4}$ inch pipe, to the Dictator, 4,000 feet of $6\frac{1}{2}$ inch pipe along the west side of Loon Lake serving the Lady of the Lake and Mamie mines, and 1,100 feet of 5 inch pipe branching north east to the Tariff, Highlander, and the big tunnel of the Philadelphia Mining Company. The total length of straight line is 11,300 feet. The properties reached by the pipe line at present are: The Eden, Crescent, Last Chance, Dictator, King Solomon, Krao, Lady of the Lake, Mamie, Little Donald, Black Diamond, Little Phil, Tariff, Highlander, Albion, Spokane and Trinket, and the intermediate claims.

The tunnel of the Philadelphia Mining Company is now in 700 feet and is being driven from the bench above the Stevenson concentrator to tap the various ledges of the camp. This tunnel will give a depth of 900 feet at the highest point of the hill, it has already intercepted the Tariff vein and drills supplied from the Taylor plant are driving the cross-cut tunnel ahead and drifting to the ore body on the Tariff ledge.

ITS USEFUL WORK.

Air was turned on to the pipe lines in the early part of April and the first machine drill ever run by air direct from a column of water was started in the big tunnel of the Philadelphia Mining Company on the 16th of that month. Mr. E. E. Knowles the mechanical engineer in charge of the plant in writing of the plant says:

"The machine drill first started was a $\frac{3}{4}$ inch Rand and is 12,000 feet from the compressor at Coffee Creek. It started without a hitch and with 85 pounds air pressure at the drill. This pressure is absolutely maintained at all times. I will venture the statement that there is not another machine in the world today working with as dry and pure air as this one, and I will also add that there is none giving better results. Manager Henry Stevenson of the mining company above referred to, who is using the air, has expressed himself as being highly pleased with the air and the pressure at this distance from the compressor was a surprise to him. Here is an instance of what the capabilities of this system of compressing air will do. The company referred to has a developed water power with a working head of 1,000 feet, and are using a Pelton wheel belted to a mechanical compressor; yet this cheapest of plants to operate has been shut down for the simple reason that they are getting their power furnished them at their very door for just one-half what it was costing them for labour



The Taylor... Hydraulic... Air Compressor

Sectional Perspective View

pipe. The speed of the water in the downflow pipe is approximately $34\frac{1}{2}$ feet per second, and the speed with which the air is drawn in with it will be nearly the same. The air is received by the water in millions of globules which retain their individuality, gradually becoming smaller in their passage down until finally liberated in the chamber below.

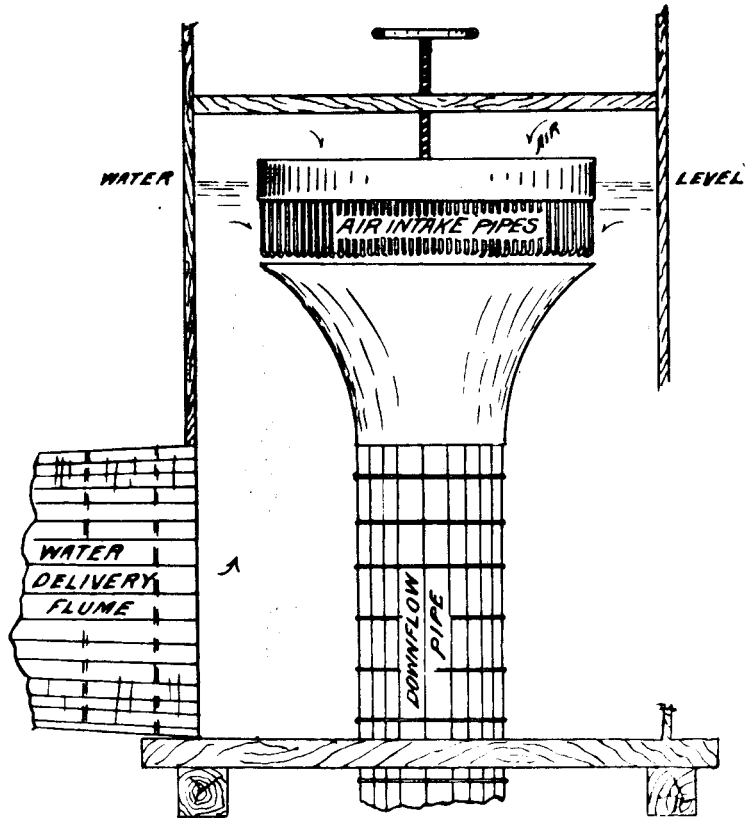
THE EFFECTIVE WORK OF THE PLANT AT THE COMPRESSOR.

The flume has a fall of 4 feet to the mile and the velocity of flow is figured at 3.72 feet per second, and the volume at 70 cubic feet per second. The actual effective head is $107\frac{1}{2}$ feet and the available horsepower allowing 75 per cent efficiency is 620 H. P. The area of the down flow pipe being $4\frac{1}{2}$ square feet

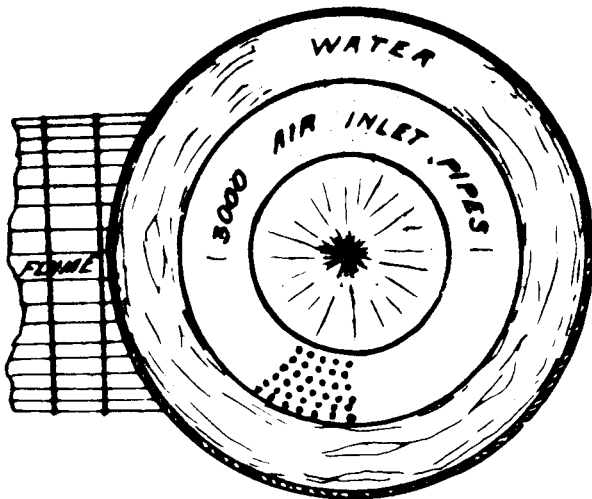
to run their plant, to say nothing of their investment, interest, oil and repairs. The compressor is running fine with not a soul nearer to it than three miles. At least it is presumed to be, as it is breathing into this machine drill at a rate that pleases the men who are running it and causes the muckers to get a hump on themselves." The work at the Philadelphia tunnel is in charge of Mr. Sherwin, and in conversation with him he made the statement that the effective work of the air could not be beat; after shooting a round of eight holes the men go back to work in from 15 to 20 minutes with the tunnel perfectly clear of impurities, and as clear as a bell in every way. Mr. Sherwin says that with all his experience with mechanical compressors, and some of them have had a capacity of 50 drills, he has never used air that is equal to the Ainsworth Air for clearing out smoke and impure air, and he also dwells on the fact that this air is an infinitely better power factor inasmuch as it is always at constant pressure, and thereby the machine men are able to do better work and to break more ground. Mr. Stevenson the general manager of the company is equally well pleased with the air.

THE COST OF THE PLANT.

The installation at Ainsworth has cost in the neighborhood of \$60,000 including incorporation, water power development and pipe line. Of this investment \$20,000 will cover the pipe line cost, \$10,000 the water power improvements, and \$30,000 the



— ELEVATION. —



— PLAN —

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.

(Continued from Last Month.)

- Q. was this made from your surveys? A. Yes, sir.
- Q. Have you verified it? A. Yes, sir.
- Q. What is this plan? A. That is a vertical section through the line A-B.
- Q. The same as marked on exhibit 15? A. Yes, sir.
- Q. Of the same scale? A. Of the same scale, yes, sir.
- Q. Made from your surveys? A. Yes, sir.
- Q. Have you verified it? A. Yes, sir.
- Mr. Davis—I tender this—Defendant's exhibit No. 18.
- Q. What is that? A. That is a vertical section through the line E-F as marked on exhibit 15, and of the same scale.
- Q. That is 12 feet to the inch? A. Yes, sir.
- Q. And made from your surveys? A. Made from my surveys.

compressor cost. The latter cost was especially heavy in Ainsworth by reason of the fact that the shaft was sunk in an unusually hard formation and involved a cost of nearly \$50 per foot.

On the basis of a gross air power of 600 the output when 4,200 cubic feet per minute is used of the capacity of the water flume this would represent a capital investment of \$100 per horse power, or upon a motor horse power of 465 (allowing loss in delivery and loss in engines) the capital cost per horse power would be 130.

The company is now selling the power delivered at the mines at \$4.00 per drill with a liberal reduction where more drills are used. The power is being used for pumping, hoisting, blacksmith forges and ventilation, the drill charge including ventilation.

Q. Has it been verified by you? A. Yes, sir.
Mr. Davis—I will tender this—Defendant's exhibit No. 19.

Q. What is this map, Mr. Clarke? A. That is a vertical section of the line C-D, shown on exhibit 15 to the same scale.

Q. Was that made from your surveys? A. Yes, sir.

Q. Verified by you? A. Well, all of these have been verified by me; as far as I have been able to judge they are all correct.

Q. They were made from your surveys, and you checked them on the plan? A. Yes, sir.

Mr. Davis—I will tender this—Defendant's exhibit No. 20.

Q. What is this map? A. That is a vertical section through No. 2 shaft and No. 4 raise, the lines drawn from the bottom of the shaft.

Q. And the other map is what? A. A vertical section through the line G-H, marked on exhibit 15.

Q. Are these made from your surveys? A. Yes sir.

Q. And verified by you? A. Yes, sir.

Mr. Davis—I will tender this—Defendant's exhibit No. 21.

Q. By whom was this photograph taken, Mr. Clarke? A. I took that photograph.

Q. What is it a photograph of? A. It is a photograph of the intersection of two veins.

Q. Whereabouts? A. Of the Centre Star-Iron Mask veins in what is designated as the No. 69 east drift of the Iron Mask.

Q. That is 69 east drift of the Iron Mask? A. Yes.

Q. That is this yellow drift down below the Centre Star winze? (Referring to the model.) A. Yes, sir.

Mr. Davis—I might say, my Lord, that this photograph we are putting in for the purpose of showing through magic lantern. You can see very little from the photograph itself, but when enlarged in that way it becomes useful. With reference to this the same as other things, it will be used later on.

The Court—Yes, I understand.

Mr. Davis—I will tender this photograph—Defendant's exhibit No. 22.

Q. Was this model made from your surveys, Mr. Clarke? A. Yes, sir.

Q. It was made by Mr. Simons, I believe? A. Yes, sir.

Q. Have you checked this model? A. I have checked all the principal elevations and distances, and I find that they are correct.

Q. Correct as far as according to your survey? A. Yes, sir.

Q. And the same thing as to angles, these shafts, for instance? A. Yes, sir.

Q. They have the proper angle? A. Yes, sir.

Q. The scale of the above, is that the same as the scale of the map? A. Yes.

Q. That is, the scale of the model itself is the same scale as the map? A. The same scale.

Q. And these turns and one thing and another, I suppose, are as near as you can reasonably get them in a model of this kind? A. Yes, sr.

The Court—Have you one scale for all, or two scales, one for the horizontal and one for the vertical? A. No, it is the same scale for all.

Q. I see you have marked on this large map, and also on the map at the base of the model "outcrop." Will you just explain what that purports to be? A.

The line marked there shows the direction and the continuity of the outcrop between No. 3 shaft and No. 2 shaft of the Centre Star.

The Court—Just go over there and show me that, will you? A. This line here beginning at No. 3 shaft.

The Court—That is marked by yourself? A. Yes, sir.

The Court—From a survey? A. Yes sir.

Q. Mr. Clarke, show where the vertical dyke which has been spoken of just west of the No. 3 shaft runs?

A. The large vertical dyke has a strike northerly and southerly in this direction and is first encountered in No. 3 shaft about 210 feet from the collar at this point, dipping slightly towards the east. The shaft follows it down. It is also encountered in this level of the Iron Mask.

Q. The blue level of the Iron Mask, being the lowest level? A. Yes, sir.

Q. What is the dip of that dyke? I believe it is not exactly vertical? A. It dips from 80 to 82 or 83 degrees.

Q. And dips towards the east? A. Yes, sir.

Q. What is the dip of the strike of the mud-seam or flat fault, as it has been called? A. It varies from 25 to 35 or 40 degrees.

Q. Have you made surveys to ascertain where, in the present workings, that mud-seam is to be found? A. Yes, sir.

Q. Just tell the court at what points, naming them and pointing them out on the model, this flat fault, so-called, is found? A. The flat fault, or the mud-seam—the water course—is found first in the Iron Mask tunnel; this drift is driven along the water-course.

Q. From station 45 to station 47? A. From station 45 to station 47, and also in the drift extending about 50 feet to the east.

Q. Of station 45? A. Forty-five.

Q. When you find it there—and when I say there, I mean both those places—does it intersect any vein? A. No, sir.

Q. Now, where do you find it next? We find it in the Iron Mask workings in what is designated as the east winze, the winze east of the vertical fault, right here.

Q. That is the Iron Mask winze between the red level and the yellow level? A. Yes.

Q. About where do you find it in that? A. It is between 23 and 24 feet from the collar.

Q. Does it cut any vein there? A. Yes, sir, it cuts the Iron Mask vein.

Q. Where do you find it next? A. We find it in the yellow level about the roof at station 38 in the bottom of No. 3 shaft.

Q. In the roof of the yellow level, that is, what is called Centre Star north drift at station 38? A. Yes, sir.

Q. In the roof of the tunnel? A. Yes, sir.

Q. Does it cut any vein there? A. Not at that point.

Q. Where do you find it next? A. We find it in the bottom of No. 3 shaft—in the bottom of this shaft.

Q. Does it cut any vein there? A. Yes, sir; it cuts Centre Star No. 2.

Q. Where do you find it next? A. We find it along the roof of the tunnel; about five feet west of station 40 it disappears.

Q. In the roof of the tunnel: when you say roof of the tunnel you are referring to what is called Centre Star north drift? A. I should say station 39.

Q. Then where do you find it next? A. In the north drift at 3 raise.

Q. In the north drift; of Centre Star north drift that is? A. Yes.

Q. No. 3 raise? A. No. 3 raise.

Q. By the way, before I pass it by, at stations 38 and 39, does it cut any vein? A. Yes, sir.

Q. What vein? A. The Centre Star vein.

Q. At No. 3 raise does it cut any vein? A. I think it cuts the Centre Star vein at 38 and 39.

Q. It is found there, at any rate? A. It is found there; it cuts the vein there; whether it is the Centre Star or not, I don't know.

Q. No, you are not an expert on that part. Now, at No. 3 raise, does it cut any vein? A. No, sir—yes, it cuts a vein there.

Q. I want to ask you what veins these are, because you are not a witness for that purpose. Where do you find it next? A. We find it in the Centre Star north drift at stations 46, 47 and 48.

The Court—Excuse me, Mr. Davis, you say this is the surface?

Mr. Davis—This is the surface of the ground roughly.

The Court—I am talking of the flat fault. That is its slope, is it?

Mr. Davis—No, my Lord, it slopes this way; it dips north; its strike is east and west.

The Witness—It dips south.

Mr. Davis—South, I mean.

The Court—What I want to understand is, that is the strike in a general way?

Mr. Davis—Yes, my Lord.

The Court—And this is where it intersects the veins?

Mr. Davis—If it could be seen.

The Court—Yes, if it could be seen, but it is buried and its strike is downward, and these different places are struck or intersected or cut by it?

Mr. Davis—Yes.

The Court—Of course, it can not be such an even surface to use the phrase, as to cut them all equally?

Mr. Davis—Oh, no, it has a uniform dip and strike, but like all veins and everything else, they vary in places.

Q. Now, where were we last, Mr. Clarke? A. At stations 46, 47 and 48 in the north drift.

Q. That is the Centre Star north drift? A. Yes, sir.

Q. Does it cut any vein at any of those places? A. Yes, sir.

Q. Where else do you see it? A. We see it in the No. 4 raise and the Centre Star No. 2 shaft.

Q. Does it cut any vein in the No. 4 raise? A. Yes, sir.

Q. Does it cut any vein in the No. 2 shaft? A. Yes.

Q. Where else did you see it? A. Also in No. 2 raise.

Q. Does it cut any vein here? A. Yes, sir.

Q. No. 2 raise is Centre Star No. 2 raise? A. Yes, sir.

Q. Where else do you see it? A. It is also shown in No. 1 cross-cut south about this point.

Q. That is, about the southern terminus of the cross-cut, is it? A. Yes, sir.

The Court—Let me ask a question for information. Does it cut these several places you are getting at at pretty much the same level? A. Yes, sir; approximately.

Mr. Davis—That is, it all depends upon whether it opens this way or that way.

The Court—Because these tunnels are all nearly horizontal.

Mr. Davis—For instance, this red tunnel it cuts in a different place from the other because it is higher up.

The Witness—But it runs somewhat in the same direction as the tunnels, therefore down in these lower tunnels you would encounter it at various points.

The Court—As they get out of these veins? A. Yes.

Q. Now, in the Centre Star No. 1 cross-cut, does it cut any vein? A. Yes, sir.

Q. Are there any other places where the mud-seam is seen in the workings as disclosed? A. Not that I know of, except in the winze, this small winze.

Q. Centre Star winze from 59 east drift? A. Yes.

Q. Does it cut any vein there? A. Yes, sir.

Q. Now, that is all the places that you have discovered the mud-seam in the workings? A. Yes, sir.

Q. I think you have already said that you have taken the dip and the strike of the Centre Star No. 2 vein; that is, the vein in the inclined shaft? A. Yes, sir.

Q. And also in the Centre Star winze? A. Yes, sir.

Q. Now, from the dip and strike of Centre Star No. 2 vein, so far as the surveys go, would you expect to find it in the Centre Star winze? A. Yes, sir.

Q. Taking the dip and strike of the Centre Star vein from the surveys would you expect to find that vein anywhere in the blue drift, Iron Mask drift, being the lowest working? A. Yes, sir; I would expect to find it there.

Q. Taking the dip and strike of the Centre Star No. 2 vein, would you expect to find it, from your surveys, anywhere in the Iron Mask winze? A. Yes, sir.

Q. About where? A. At a point about 40 feet from the collar of the winze and from there down to the blue level?

The Court—Where is that? A. That is the collar of the winze at the red level.

Q. About 40 feet down from the red level of Iron Mask winze? A. About 40 feet down measuring from the collar of the winze.

Q. That is from the red level. A. And from there down to the blue level I would expect to find it.

Q. From measurements made by you based upon the dip and strike of the Centre Star vein would you expect to find that vein in or about the southern terminus of the Iron Mask cross-cut from the Iron Mask east stope, that is, the brown level? A. Yes, sir.

Q. From the measurements made by you, or rather, from the surveys you made, based on the dip and strike of the Centre Star vein, and also based on the dip and strike of the Iron Mask vein, would you expect to find intersections of those veins at any place in the workings, and if so, about where? A. I would expect to find it about the foot of the Iron Mask east winze.

Q. At the foot of the Iron Mask east winze, this point here? A. Yes this winze down here.

Q. Near the blue level? A. Yes. Not at the bottom, but you must take into consideration that the point of intersection of two veins having a width, that

the place of intersection might be large. I would say down the Iron Mask winze from some point just below the yellow level to the bottom of the winze you would expect to find a place of intersection of the veins.

Q. Anywhere else? A. You would find it also in No. 69 east drift.

Q. That is Iron Mask east drift No. 69? A. In the Iron Mask east drift 69. You would also find another point of intersection in the Iron Mask drift.

Q. The Iron Mask east drift on the red level? A. Yes.

Q. At about station what? A. At about this point here.

Q. That is not very far from where that raise and winze are? A. Yes.

Q. But about 30 feet from the extreme east end of Iron Mask drift? A. Yes.

Q. Where else, if anywhere? A. That is about all the places I can remember.

Q. That is about all that you figured out or can remember at the present time? A. Yes.

Q. What is the smallest angle made by the centre line of the Centre Star location following on the general course of that outcrop as shown on the plan approximately? You have figured it out, Mr. Clarke. Just take a long ruler and extend that outcrop in the general direction it is running? A. That is about it; it would make an angle of about 40 degrees—35 to 40 degrees.

Q. It is less, at any rate, than 45 degrees? A. Yes, sir.

Q. You have figured that? I asked you to figure it once before, and that is the result? A. Yes, sir.

Q. What boundary line of the Centre Star mineral claim would the general course of that outcrop continued cross? A. It would cross the east end line.

Q. The wires that are stretched over the top of this model, Mr. Clarke, as I understand, give roughly the general contour of the surface of the ground? A. Yes, sir.

Q. Of course, it is impossible to give it more than roughly in that way. In which part of the Centre Star is the principal vein of the Centre Star? A. The principal vein runs through the claim easterly and westerly a little south of the centre line.

Q. Is this No. 1 tunnel on the principal vein? Does that run in the principal vein of the Centre Star? A. Yes, sir.

Q. It passes, then, through both end lines of the Centre Star? A. Yes, sir.

Q. Have you made surveys in the War Eagle mine? A. Yes, sir.

Q. What is this vein we call Centre Star No. 2 vein? Is it a fork of any vein, and if so, what? A. It is the north fork of the War Eagle vein, what is called the north fork.

Q. It is a branch, however, of the main War Eagle vein? A. Yes, sir.

Q. The north fork of the War Eagle vein, and which is the south fork of that vein? A. The south fork runs through No. 157 east drift.

Q. That is this brown level? A. That brown level and also that red level.

Q. And where do they join; about where do those two forks join the War Eagle as it is shewn on this map? A. It is not shown on here.

Q. This War Eagle No. 9 raise is on what vein? A. It is on the north fork of the War Eagle vein.

Q. That is the Centre Star No. 2 vein? A. Centre Star No. 2.

Q. These tunnel mouths come out to the surface of No. 1 and No. 2 tunnels? A. Yes, sir.

Q. There is a steep bank there, I believe. This line here does not exactly represent the surface of the ground, does it? A. It represents the approximate elevation. The creek passes through here (indicating on the model).

Q. Yes, I see if this wire was bent down it would indicate it better. A. The creek passed through the portal of those tunnels.

Q. That is Centre Star Creek? A. Yes, sir.

CROSS-EXAMINATION.

Cross-examined by Mr. Bodwell:

Q. What station do you call this point here (indicating on model)? A. Station 213.

Q. Would we be right in calling this station 213 here for the purpose of evidence—calling this white drift? A. No, sir. This is the raise—No. 9 raise it is called.

Q. No. 9 raise of the War Eagle? A. Yes, sir.

Q. That is the name it is called in the War Eagle workings? A. No. 9 raise.

Q. What would be the vertical distance, parallel plane, from here to here (indicating on model)? A. I don't quite understand your question.

Q. What I mean is, if you run a parallel with this (indicating on model), what would be the vertical distance between those two points? A. I should say about 90 feet.

Q. Is this approached by any route except this tunnel that is shown here? A. No, sir.

Q. It was started at the tunnel and raised to that point? A. Yes, sir.

Q. What level of the War Eagle is that? A. It is called the No. 3 War Eagle tunnel.

Q. No. 3 War Eagle tunnel? A. Yes, sir.

Q. Does that represent the levels from the top—are they numbered from top down, I mean? A. Yes, sir.

Q. That would be the third level down? A. Yes, sir.

Q. Is there a level at this height? A. Well, yes, sir; about that height.

Q. Where does it run? A. It runs from this No. 5 raise.

Q. What do you call this (indicating on model)? A. No. 151 east drift.

Q. No. 151 east drift. Is that what you call it? A. Yes, sir. It is numbered from the station established here 157.

Q. At the east drift of station 157? A. Yes, sir.

Q. There is a level extending easterly? A. Yes, sir.

Q. What raise do you call this (indicating on model)? A. No. 5 raise.

Q. Does that level extend westerly beyond No. 5 raise? A. I don't know.

Q. I thought you surveyed it? A. I surveyed portions of the War Eagle.

Q. But you cannot tell us whether there is a level extending westwardly from that point or not? A. No, sir.

Q. You said there was a level here, or about here (indicating on model)? A. I said there was a level—you asked if there was a tunnel on the same level; I said, yes, sir.

Q. You do not understand me then. The question

I asked you if there is any way of approaching the point shewn as the end of No. 9 raise except by going through the drift at station 210 and going up? A. No other than I know of.

Q. The workings stopped there? A. It is not stopped that I know of.

Q. Is it continued up? A. They are working there at the present time.

Q. When were you in it? A. I was in it about ten days ago.

Q. Where was the work then? A. About that point.

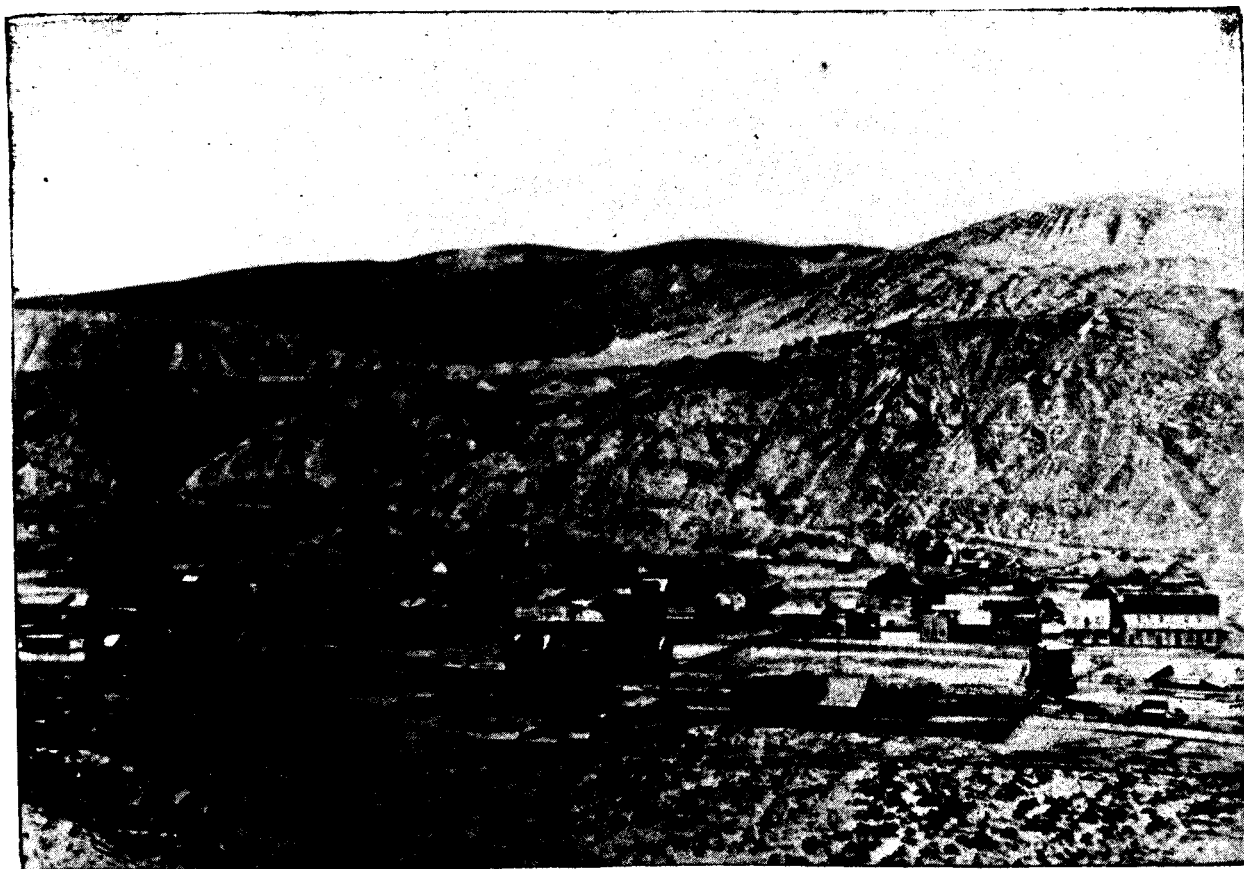
Q. Are they extending it upwards? A. Yes sir.

Q. What relation does this bear to the No. 1 raise of the War Eagle? Where is the No. 1 raise of the War Eagle approximately from this point (indicating on model)? A. I don't know the exact location.

NOTES FROM OUR TRAVELLING CORRESPONDENT.

ASHCROFT AND CARIBOO.

THE importance of the town of Ashcroft, situated some 200 miles east of Vancouver and the Canadian Pacific Railway, lies chiefly in its being the jumping-off place for travellers to the famous Cariboo gold fields, now again being extensively exploited. Cariboo, East and West Lillooet and the Omineca mining districts are reached only via Ashcroft except for a few weeks. In the case of Omineca during the summer season it is possible to reach there via the Skeena River and Hazelton. The road from Ashcroft to Barkerville is 285 miles in length, and when in condition is a splendid highway. Villages and good road houses are found at convenient dis-



Ashcroft, B.C.

Q. Did you ever see the No. 1 raise of the War Eagle? A. No, sir; not that I know of.

Q. Are these all the parts of the War Eagle mine that you have seen, the ones that are shewn here? A. I have seen other portions; yes, sir.

Q. What other portions? A. I have just been through two or three times the No. 1 tunnel.

Q. Is this the No. 1 tunnel (indicating on model)? A. The No. 1 tunnel is not shewn here; it is up this side (indicating on model).

Q. Now, have you any idea where the No. 1 raise of the War Eagle tunnel is? Have you any idea at all? A. No sir.

Q. Is it 500 feet west of the No. 9 raise? A. I am not sure that I know what the No. 1 raise of the War Eagle is.

(To be continued.)

tances and at times more than 1,000 animals are freighting or packing over it. Clinton, 150-Mile House, Soda Creek, Quesnelle, Stanley, Barkerville and Quesnelle Forks are as a rule prosperous villages, not so prosperous of late owing to the pernicious anti-alien legislation, soon, we trust, by the grace of whatever party may be in power, to be repealed.

Among the notable mines of Cariboo are found the Cariboo Consolidated Hydraulic, the Gold Point, Golden River Quesnelle, Spanish Creek mines, Victoria, Rose Gulch, Montreal, Beavermouth, Maud, Keithley and Snowshoe Creek mines, and many others all tributary to Quesnelle Forks. Some of the above mentioned have not so far proven to be of the value their owners hoped might be the case, others are not yet developed, but enough is known of the country to amply prove that this will remain an important point for hydraulic mining for a long time.

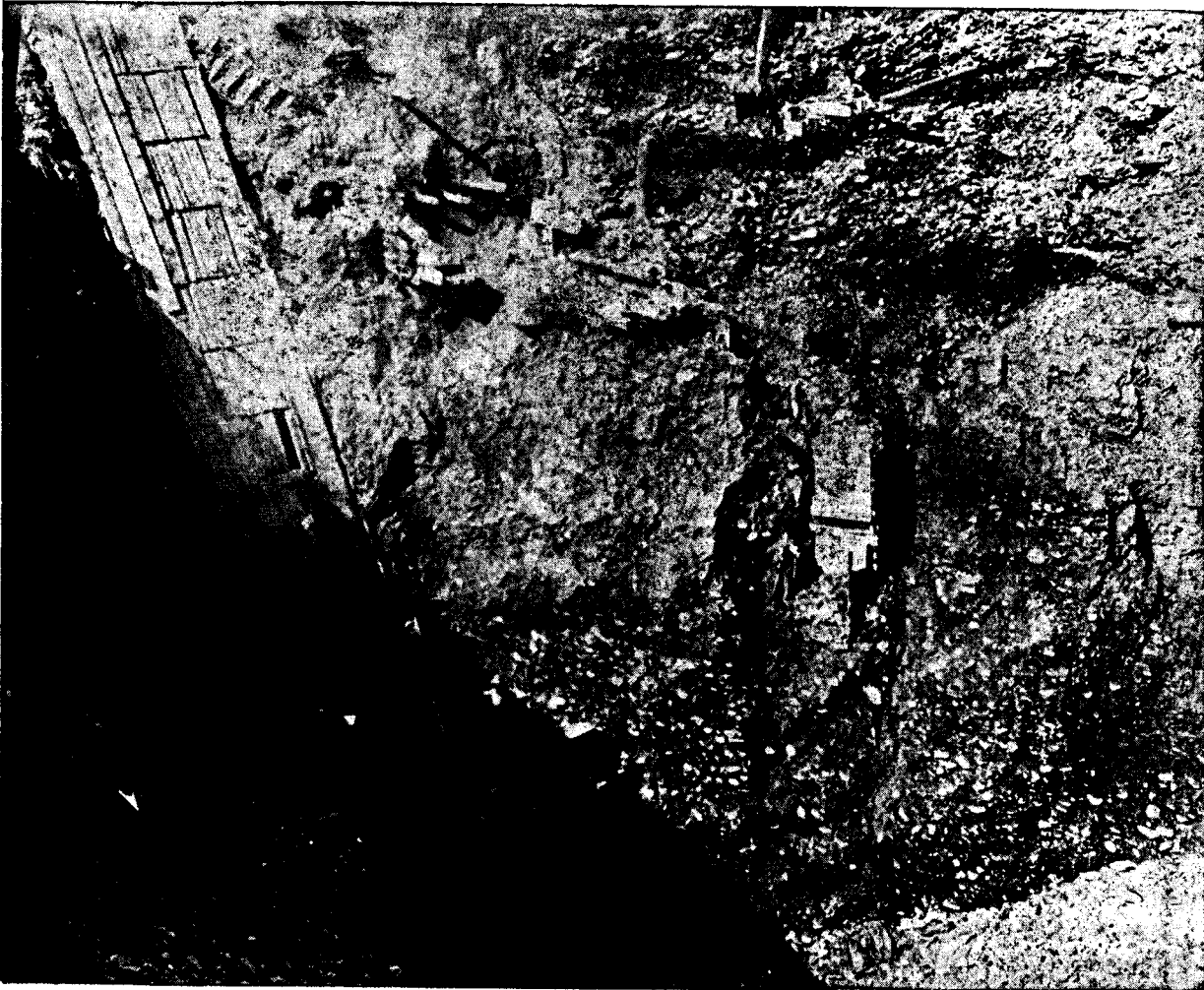
Quesnelle Forks is about 100 miles from Ashcroft. Horsefly, 170 miles from Ashcroft, has mines of great value. The Ward Gold Mining Company last year found very rich gravel and paid a substantial amount over and above working expenses. The company expects to do much better next season. They are working two hydraulic elevators.

The Miocene, a deep proposition, has a shaft 5x15 feet down, 500 feet to rim-rock, and will soon resume work to reach the bottom of the old channel proven to exist and known to be rich in gold.

A few miles down the Horsefly is a ten-stamp mill not now working, which was put in by a Montreal

Lightning Creek, which produced in early days \$14,000,000, and the workings on Lightning Creek ten miles below Stanley, where the Lightning Creek Gold Gravels and Drainage Company are now reported as breaking through into the old channel and are finding conditions such that they hope soon to be on a dividend-paying basis. Slough Creek and other sections all hope to give a good account of themselves within the next two years and some of them much sooner.

Quesnelle is the headquarters of the dredging industry, and the outlook for dredging successfully the beds of the Quesnelle and Fraser Rivers is good. The wild work of the past is giving way to system and



Pit of the Cariboo G. Fields Co., Ltd. on Williams Creek, showing portion of Old Shaft and Sluices covered up by the Tailings.

company to work the cement gravel found here in large quantities. The mill will soon be started up it is reported. The same old channel system has been found here and much work has been done to try to open it up and get at the store of gold believed to be stored away by old Nature many centuries ago.

Near Barkerville the Cariboo Gold Fields with its elevator system, Lowhee Creek, Grouse Creek, Summit Creek, Stewart, Sisters, Antler and a dozen others, all surrounding the great old producer, Williams Creek, with its record of \$25,000,000 from two miles of ground; Willow River, Musquito Creek, Burns, Dragon, New, Peters, Lost Chance, Anderson and many others, clustered around the famous old

knowledge of conditions. Next season will see several companies at work in that section and they will be companies at work for saving gold, not for working the stock markets.

Lillooet is making a splendid showing of late in quartz development. Cayoosh Creek will soon have a 50-ton cyanide plant at work and it is hoped will be successful. There are good properties on this creek despite the failure of the much-boomed Golden Cache.

Bridge River shows up well and with arastras proving, as was done last year, that there is rock free milling and running \$100 or more to the ton, what may we not expect with development. From 80 tons of

rock \$8,000 was taken out of the Lorne mine with an arastra. The Ben'd Or mined and milled \$24,000 in some three months last season and expect to do much better this year.

Probably the Brett property on McGillivray Creek, on which a 20-stamp mill is nearly completed, is attracting more attention than any other at present. A ten-foot ledge, said to give a very high average value and fairly well developed, has been reported on very favourably by Lane and Hayward, experts, and a sale is being negotiated at a large figure.

The mining outlook in Omineca is particularly good. Several large companies are operating extensively and with the building of the Quesnelle-Stuart Lake waggon road, which should, and will, we trust,

ment of a number of the properties. The Python, the original discovery, the Pothook, the Erin, the Iron Mask, the O. K., and others, have all had much attention paid to them, and although a constant shipper has not yet been developed, there are now strong indications of approaching success. These Kamloops properties have several times been described in the *MINING RECORD*, and their merits are tolerably familiar to our readers.

In this issue we give illustrations of the Tenderfoot, situated on Copper Creek, which flows into Kamloops Lake from the north, almost opposite Savonas. This property was discovered a dozen years ago by Oliver Redpath, who is well known in connection with the Savonas Cinnibar mine. The tenderfoot is now be-



Sawing and Carrying Lumber on the Van Winkle, Summit Creek, Cariboo.

be soon built, a great boon will be conferred on this rich district. The building of the Ashcroft-Dawson telegraph line, which traverses a portion of this district, will help very materially to develop the resources of this large and as yet almost unknown region, advancing the agricultural and stock as well as the mining resources of Omineca.

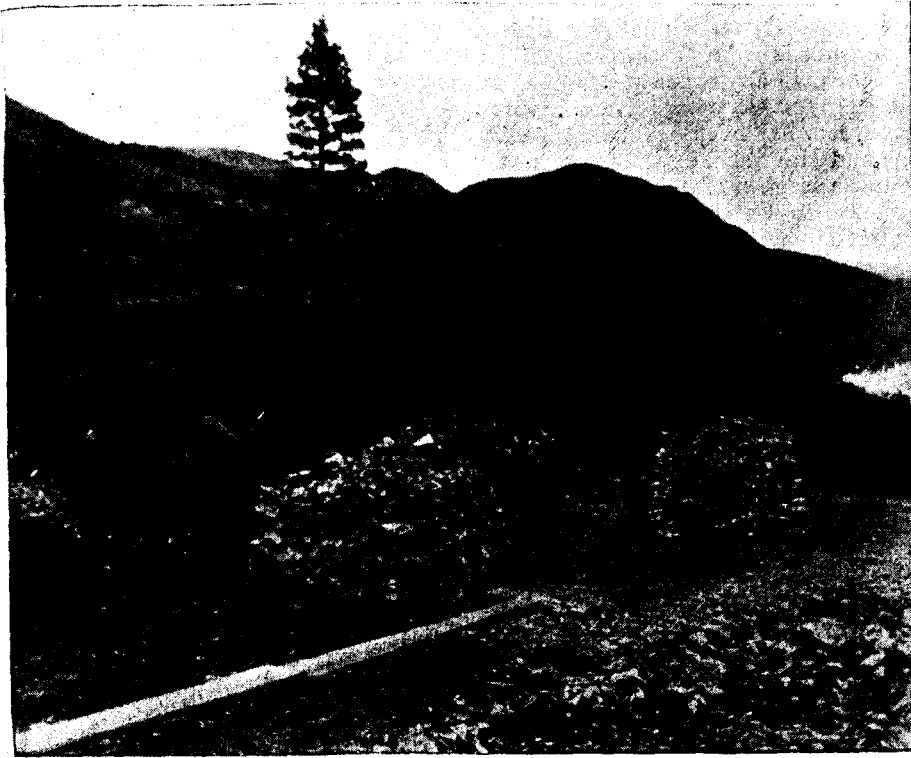
KAMLOOPS.

It is upwards of five years now since the first discoveries of copper-gold ore were made on Coal Hill, three miles south of Kamloops. The discoveries attracted great attention at the time, and since then a good deal of money has been spent in the develop-

ing developed under bond by a syndicate of Kamloops people of which Mr. J. T. Robinson is secretary. More than 300 feet of shafting and tunnelling have been done, and all in substantial and miner-like manner, permitting of the raising of ore in the most economical manner. There seems to be a very wide vein of low-grade copper-gold ore, very closely resembling in appearance and value the ores of the Boundary Creek country. A number of assays made from samples taken across the ledge at a point where it measures fully 16 feet thick, returned average values of six per cent. copper and \$150 gold to the ton. The economical value of ores of this grade, situated in the locality in which the Tenderfoot lies, remains yet

to be demonstrated, but if the ore should turn out to be "pay rock" there is undoubtedly much value in the

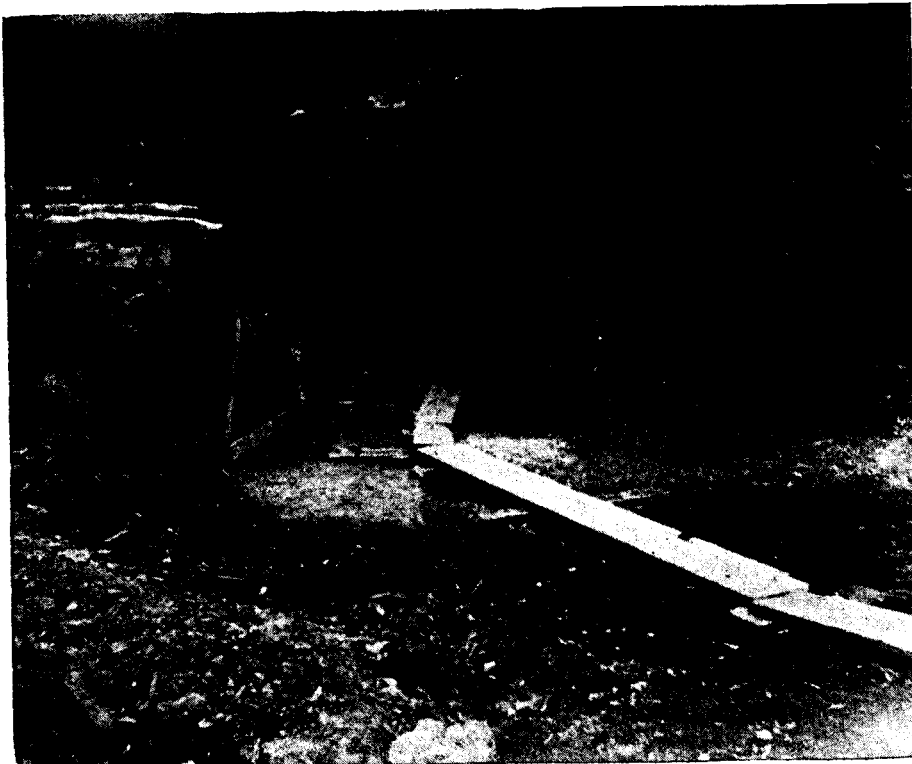
land the products of the mine, whether as ore or matte, on the cars of the Canadian Pacific Railway.



Tenderfoot Mine Dump, Kamloops.

property, for the quantity of ore obtainable, and the ease of mining it, are both factors of great import-

The work at the mine, it is satisfactory to state, under the management of Mr. Fleetwood Wells, is



Entrance to Tenderfoot Tunnel.

ance. The mine is located within a half mile of Kamloops Lake, and three miles across the water would

being carried on in a very systematic and thorough manner.

THE MONTGOMERY WIRE-ROPE TRAMWAY.

THE accompanying illustrations show one of the aerial wire-rope tramways built by the J. H. Montgomery Machinery Company, of Denver, Colo.

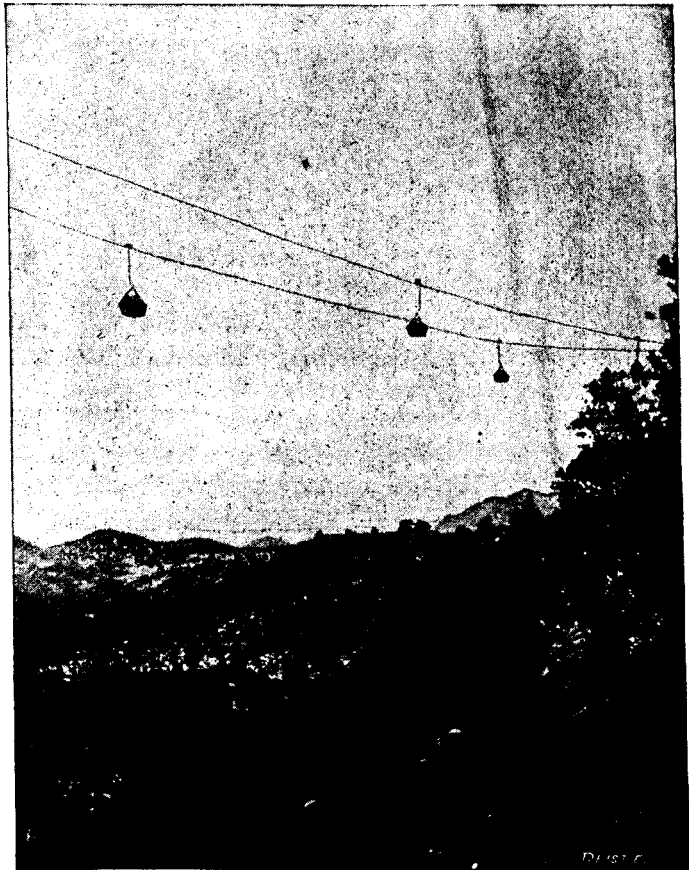
At the lower or dumping terminal the buckets are dumped automatically, simply by raising the latch with the trigger, which permits the buckets to turn bottom upwards. In stormy weather the buckets can be sent back to the mine turned upside down, and they



Tenderfoot Mine Dump, Kamloops.

Fig. 1 is a view of the tower or support, and Fig. 2 is a general view of a tramway. The company's ropeway is of the single-rope system, but has some special and valuable features. One of these is that when the bucket arrives at the loading station the grips are automatically loosened from the cable, allowing the cable to travel all the time, while the bucket stops immediately under the ore-chute, where it can be filled by the person in charge. When the next empty bucket arrives at the loading station it automatically releases the bucket just loaded, which moves off down the line, while the bucket which has just arrived at the loading station stops under the chute to be loaded as before. This obviates the necessity of a mechanical loader travelling with the bucket. Any person who has ever used a single-rope system will understand the great advantage of having the buckets stop to be loaded, as the ore is not scattered all over the station, and much complicated machinery, which must be kept in repair, is dispensed with.

Where the buckets are attached permanently to the rope, the constant bending of the rope at the clip causes the cable to break at this point, while with the Montgomery clip the buckets are gripped fast to the cable always in a new place, making the life of the rope over twice as long as with old-style single-rope tramways. Another point is the fact that the grips never get loose and skate the cable. The Montgomery grip is operated by the weight of the bucket, and therefore the more load you put on the bucket the tighter it sets the grip, and the less load the less it sets the grip; but it is so mechanically arranged that the weight of the carrier always sets the grip so tight that it is not possible for it to slip on the cable.



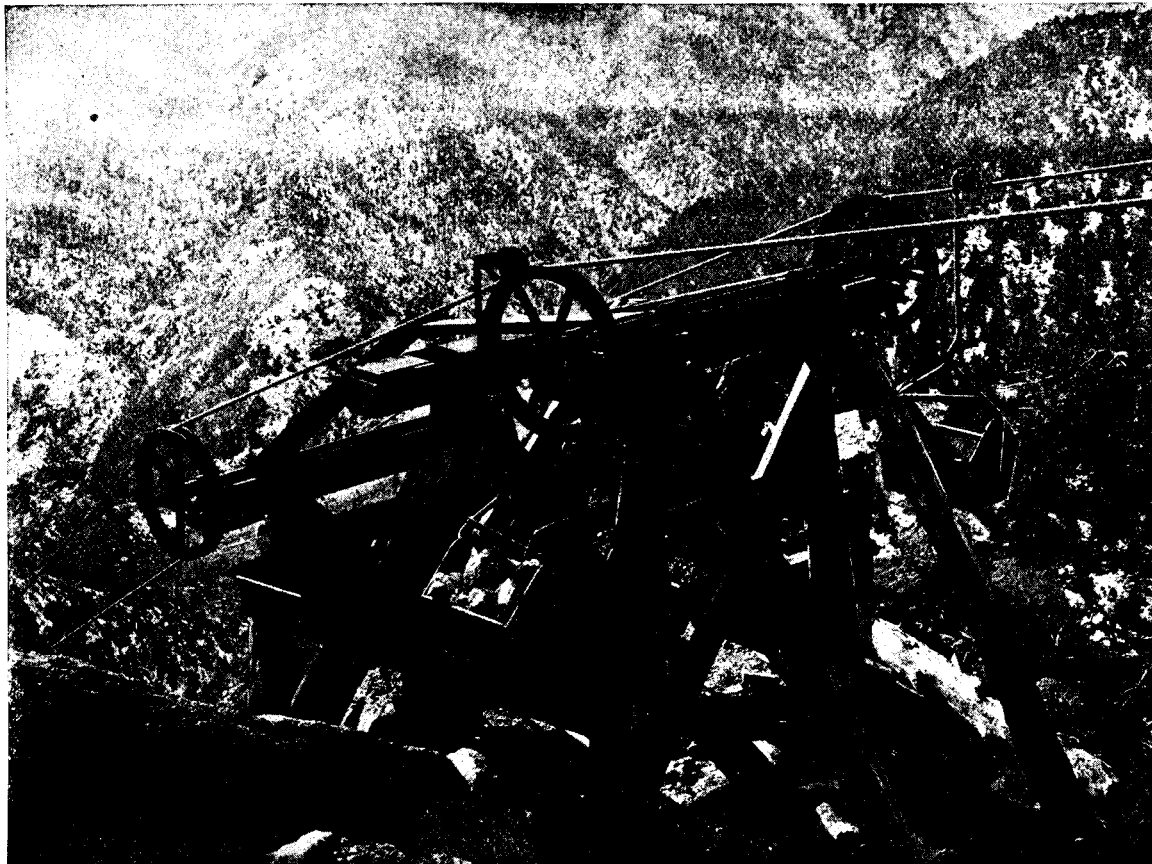
The Montgomery Wire-Rope Tramway.

are therefore not filled with rain or snow; and in freezing weather the ore is not frozen in the buckets.

The company also makes a new automatic braking device where the lines run by gravity. This brake works and controls the tramway as well as the governor would control the speed of an engine, and very much better than it is possible to do so by hand. On reasonably short lines, where there is not too large a tonnage, one man can operate the tramway on each shift, and can easily tram down 150 tons per day. Under favourable circumstances ore can be trammed down at an expense of not more than 4 cents per ton per mile, as everything about the machinery works automatically, excepting the raising of the gate at the ore-chute to fill the bucket.

One of the main points of a successful tramway is

have added the highest and lowest prices for 1900 up to the middle of May, and give in the final column the closing prices—viz., of June 8th. These statistics will explain how very pronounced has been the downward tendency in British Columbia market quotations. Of course the war has killed enterprise here, and is no doubt largely responsible for the small amount of support forthcoming; but at the same time it must be admitted that so far British Columbia has failed to receive the support of those very big houses who have been identified with the South African and West Australian movements, and whose countenance of both markets has been sufficient to attract enormous sums of money to the two countries. British Columbia has not been denied assistance, and the temper of the public is such at the present moment that hard-



The Montgomery Wire Rope Tramway.

in the construction of the towers or supports for the line. To this point the company has given special attention, and its towers are very carefully designed to meet the hardest requirements.

BRITISH COLUMBIA AND THE LONDON MARKET.

(From Our Own Correspondent.)

IT seems to me that at the present moment some of your readers might like to see in tabular form the movements in the prices of the few British Columbia companies in which there is a fairly "live market" in London; and I have therefore prepared a little table in which the fluctuations in these during 1896-1900 are clearly shown. To bring the table up-to-date I

ly anything that Canada could ask of us would be refused; but people feel that until the era of dividends justifies it, the province cannot look for much more capital to be subscribed for the development of its mines. For the moment the section in which British Columbia shares are quoted (for British Columbia can hardly be said to have a market all to itself) is dull, suffering much from the efforts of those so-called financiers of the Morris Catton type who have induced people to subscribe to the wildest of British Columbia wildcats. Prices are purely nominal, and business very, very limited. How long it will be before the market recovers from its present apathy it is at present difficult to foretell, but be the intervening period brief or prolonged, the province may rest assured that it has a large number of friends in this country

who will be only too willing when times are more propitious, to show their appreciation of its advancement as a producer of the precious as well as the baser metals, in a fashion which can but be satisfactory to those who are so deeply interested in its welfare.

Whether the advertisement of the London & B. C. Goldfields group which appears in one of the financial daily papers to-day, (and which by the way, probably cost £50 or £60) will attract the public to support the shares in the various companies comprising this group is doubtful. It certainly seemed to me a waste of good money. The London & B. C. Goldfields people have always been regarded as one of the strongest B. C. houses in London; and this advertisement, even if it did not come quite as a surprise to me, was a new departure for this particular group. Le Roi have stiffened a little, partly on the persistent rumours that Whitaker Wright—who has been out of town for some time holiday making—intended to immediately float the West Le Roi as a separate company. It was said last week that the prospectus would be out yesterday and then to-day; but those who know the Whitaker Wright methods would not have been surprised if it had been deferred. Certainly the big little man is bold beyond the bounds of prudence in selecting the present moment to launch such a scheme. But probably he will, as before, rely almost entirely on the flock of financial sheep who have accepted him as their shepherd.

At an extraordinary general meeting of the Granite Gold Mines, Ltd., it was decided to increase the capital to £200,000 by the creation of 80,000 new shares of £1 each. As some of the shareholders seemed to think this a big jump the chairman pointed out at the meeting that the board did not intend to raise all the new capital at once, but only from time to time, and in such demands as they might require. He pointed out also that they wished to have a reserve against any contingencies that might arise.

The reorganization of the Hall Mines is proceeding, and it is hoped that if they are able to receive the cordial and prompt support of the shareholders the directors will speedily be able to put a different complexion on the affairs of this company.

NAME.	1896		1897		1898		1899		1900 To Middle of May.		Price June 8.
	Hgt.	Lt.	Hgt.	Lt.	Hgt.	Lt.	Hgt.	Lt.	Hgt.	Lt.	
Alaska Goldfields					2½	1 1-16	1½	½	1 1-16	11-16	15-16
B. A. C.					2 3-6	12-0	28-0	11-0	19-6	12-6	13-3
Hall Mines	¾	¾	1 15-16	1 1-16	1 13-16	½	¾	½	6-3	1-0	5½ ass't mak'g pric. 6-3
Londyke Bon'za					1 7-16	¾	1 5-16	11-16	13-16	9-16	5 8
Lon. & B.C. Gold's							2	1	1 9-16	1½	1 5-16
McDonald's Bon'za							1 3-16	13-16	1	5 8	¾
Le Roi							8¾	4¾	6¾	4¾	6 5-16
Ymir							2	¾	1½	1½	1¾
Telford Yukon							1¾	1	1¼	1	1¾
N. Goldfields of BC							1 1-16	13-16	1½	¾	1 3-16

Thinking that British Columbians might like to have some particulars concerning the latest Whitaker Wright company I kept back my letter a day or two in order to send you some particulars of the concern which is being formed to work the "West Le Roi." This was to have been the title, but for some reason or other the promoters found it inadvisable to use this name, and so it was decided to christen the new company "Le Roi No. 2, Ltd." The prospectus, which is at present only being circulated privately among the shareholders of London & Globe, and British America Corporations, and the Le Roi Com-

pany, will not be advertised at present. This Mr. Dealtby informed a representative whom I sent to interview him yesterday afternoon. Whether or no, however, all the capital offered will be taken up by the shareholders of the three companies named is doubtful, for Mr. Whitaker Wright's promotions have lately been decidedly under a cloud, and although he may be blindly followed in boom times, in these periods of apathy and dejection people are apt to be shy. The board is, of course, a Whitaker Wright board, without a Whitaker Wright; and the brokers are eminently respectable. This you will see from the prospectus which I have sent you as well as a map of properties to be taken over. The capital is £600,000 (\$3,000,000) in £5 (\$25) shares, the denomination being the same as in the case of the Le Roi. This is rather a new thing for the London market, for certainly 99 out of every 100 mining companies launched are capitalized in £1 shares; but it makes it easier to manipulate the market, and lends itself to some of those feats of financial legerdemain so common to this particular group. The purchase price to be paid for the properties acquired is £550,000 in cash or shares, or partly in cash and partly in shares, leaving £50,000 for working capital. The properties to be acquired are the Josie, Poorman, Annie and Annie Fractions, Rockingham and No. 1.

The prospectus is very bold, and the public to whom Mr. Whitaker Wright appeals are asked to find the money required on extracts from reports made by Mr. Carlyle before he left the B.A.C. people and on a report from Mr. Macdonald, whom it is proposed to make consulting engineer. Twenty-five per cent. dividends are anticipated on the capital now created (and all issued) for the present developments, but it is regarded as not at all beyond the realms of probability that this rate will be "considerably enhanced."

It may be as well to recall to the minds of your readers that two companies were formed in 1898 in connection with the B.A.C., the East Le Roi and the West Le Roi, with capitals of respectively £400,000 (\$2,000,000) and £500,000 (\$2,500,000). This West Le Roi is acting as vendor to the present company, and in view of the fact that its shares of £1 each have been accorded a premium—nominal, it is true—which would make—if justified—the transfer of its assets to the new company a bargain worth being in, it is curious to say the least that it should have been necessary to find a new title for the company now issued. Neither the West Le Roi, nor the East Le Roi were ever seriously considered on the market, but I believe for a little while an attempt was made to create an interest in them, and some dealings may have taken place in the old shares. It is to be hoped that we are not to have a recurrence of the unpleasant experiences met with in connection with the acquisition of the Le Roi property. It is strange to say the least of it that it should have been found necessary to reorganize the old West Le Roi company, or rather form a new company with a further £100,000 capital to carry on the operations which it was ostensibly promoted to undertake. But it is all so much like Mr. Whitaker Wright and his group that one can only shrug one's shoulders, and hope for better times when the New Companies' Acts pass from the dreary region of discussion to the Statute Book. The prospectus, of course, contains the objectionable "Waiver Clause;" and is as bold as are usually the prospectuses of this particular group.

THE MONTH'S MINING.

YMIR.

(From Our Own Correspondent.)

Y M I R has a property which has never been boomed, but has nevertheless been steadily working for the past eighteen months; it is known as the Wilcox group. The property consists of the Wilcox, Bywater, Fourth of July and Warwick mineral claims. The first mentioned are Crown granted. The group lies about five miles from the town of Ymir on Wild Horse Creek, and the following work has been done: There are three ledges, and development has been extensively carried on on all the veins. On No. 1 ledge there is a tunnel 350 feet and a raise from this to the surface a distance of 105 feet. This tunnel is all in ore which averages four feet in width and an average assay will give \$18.00 to the ton. On No. 2 a ledge tunnel 375 feet has been driven, one 90 feet, also a smaller one of 40 feet. On No. 3 ledge the vein has been drifted upon a distance of 180 feet, a cross-cut of 70 feet and a raise of 145 feet. It can be said of the Wilcox group which can rarely be said that all the development work that has been performed has been carried out in a most systematic manner and shows up the property to the best advantage. The work reflects great credit upon the mine superintendent, Mr. Phillip White, who has had charge of the property since the commencement. The character of the ore is a galena carrying red oxide; an average of the values will give \$17.50, and the ledge will average all through three feet. At the time of writing there is over \$200,000 of ore in sight. The company's stock is held by a few, they never having found it necessary to hawk it around at a low figure. Negotiations are at the present being carried on with parties in the Eastern States and the probability is that before next spring there will be a change.

Considerable development is taking place around this neighbourhood and from the way the properties are looking the outlook is very promising indeed. While some of the minor properties have shut down owing to the common complaint, "lack of funds," still there is every possibility of their soon commencing development again. The Ymir mine is the stand-by of this camp; in fact it is a larger producer of its kind in Canada. The British America Corporation have been doing development work on the Dufferin, Beresford and Mist Fraction. This property adjoins the Ymir group and has an identical showing to that of the Ymir. Persons competent to judge claim that it has the continuation of the Ymir. The Fern mine has commenced its season's operations.

KAMLOOPS.

(From Our Own Correspondent.)

Mining has been somewhat neglected during this month owing to the excitement attendant on the provincial elections. Notwithstanding good steady progress has been made with many properties. The north cross-cut at the Truth mine is now in 70 feet and has passed through some good bands of ore, the best ore is being put aside for shipment, the low-grade going over the dump. The best of the surface showings have yet to be cross-cut under. This property has been attracting considerable attention during this month and is improving in value almost every day. The Python continues working with a staff of seven men; a large quantity of magnetite is reported to have been met. A shaft is now being sunk on the Tenderfoot, Copper Creek, and ore of a better grade

than that from the tunnel is being met. The last payment on the property was made a few days ago by the local syndicate which has been developing this property. Now that the syndicate has obtained full control steps are being taken to commence more energetic mining and one or more carloads of ore will be shipped for trial purposes. Mr. Boillot, of Paris, who has been developing the Wheel Tamar and Hilltop properties, has left for New York. These properties which have turned out very well, will now pass into the hands of New York and French capitalists. The Wheel Tamar is a big copper property and the Hilltop is a gold-quartz proposition. The Erin is being explored at the 100-foot level and a very large body of low-grade ore has been cut through. There are some heavily oxidized bands, however, which are expected to yield better ore with more depth. The Iron Mask, a property which shipped 100 tons of ore in the early days of the camp, is being explored by the B. C. Exploring Syndicate, who have the property under bond. The vein is being cross-cut at the level of the old tunnel. The cross-cut is now in 30 feet; several bands of ore have been met and the hanging wall has not yet been reached. The ore previously shipped was extracted from a band three to four feet wide near the footwall. The same company have just completed the re-timbering of the shaft at the Lucky Strike and will now try to recover the vein which is cut off by a fault. This is one of the high-grade properties of the camp and the work is being watched with close interest. Some work has been done on the Pole Star, Jamieson Creek. This property is typical of the mineral bearing veins of that locality; they are massive veins of quartz carrying a little galena with gold and silver values. Some good returns are got from picked samples, but not enough work has been done to determine the working value of the whole bodies. The Salmon Arm, Shuswap Lake, excitement continues unabated. The Glencoe mineral claim is reported to have been bonded for the sum of \$35,000 and there are reports of other deals but reliable information is hard to get. Some samples of very high grade silver ore are being brought out and the excitement runs high. The Enterprise mine at Stump Lake, about 25 miles south of Kamloops, has been sold to an English syndicate formed to take over this mine. This is one of the properties which were worked some ten or twelve years ago. A mill was put on this property, then the Star mine, and several carloads of concentrates were shipped. Unfortunately the mill was burned down and the mine has been idle since. The new company will start to work on a fairly large scale in a few weeks.

BOUNDARY CREEK.

(From Our Own Correspondent.)

Although business keeps generally quiet in the several towns of the district there is a gradual improvement in matters connected with the mining industry. The most encouraging feature is the increase in the quantity of ore being sent out. The aggregate tonnage shipped to date of writing is still comparatively small, yet it has been added to less slowly during the past two months than at any earlier period of like duration. The total from the B. C. mine, in Summit Camp, now over 3,000 tons, should by July 1st be about 4,000 tons. This, as well as about twenty carloads sent from the Golden Crown, Winnipeg and Athelstan mines, in Wellington Camp, has all been sent over the Columbia & Western Railway to the Canadian Pacific Co.'s smelter at Trail. More than 1,000 tons of ore has been hauled by horse teams

from the City of Paris mine, in Central Camp, to the Granby Co.'s smelter, at Grand Forks, and the output from this mine will, it is expected, shortly be increased from 25 tons to about 40 tons per day, the chief obstacle to the increase having hitherto been the state of the waggon road, which has not been in good enough condition for the teams to take out the larger quantity. Besides these two mines, which to the extent of an average of about 50 tons and 25 tons per day respectively, have become regular shippers, there are the Wellington Camp properties already mentioned and three or four others which have been intermittent shippers, so that the aggregate of the shipments to date must now be between 5,000 and 6,000 tons. The expected early commencement of shipping from the Old Ironsides and Knob Hill should ere long so change the position as to make such a quantity a monthly rather than a gross total. So it is that after two or three years of slow progress, the time for rapid improvement seems to be at hand, which improvement can best be effected and accelerated by the receipt by mine owners of cash returns from the smelters.

The customary difficulty in supplying reliable information of public interest once again presents itself as the time comes round to write this monthly letter. Probably this difficulty will be lessened later by more mine managers responding as readily and fully to the personal application of the correspondent for accurate mining information as for some time past has been the kindly custom of the manager of the New York Company owning and operating the Mother Lode mine. However, such information as the writer has been able to obtain and as in his judgment will interest readers of the MINING RECORD is given below.

The Mother Lode.—Steady progress in development work is being maintained at the British Columbia Copper Company's Mother Lode mine, situate in Deadwood Camp, near Greenwood. On the surface the construction of ore bins, to have a holding capacity of about 2,000 tons, is still being proceeded with, but it is not expected that these will be completed until the end of July or early in August. As the structure will be about 45 feet in height it is necessary that it be made thoroughly substantial, so that with comparatively big timbers to be used a longer time will be occupied in building it than at first seemed probable to the writer. The machinery manufacturers who contracted to supply additional and larger compressor, boiler and drilling plant to that now in use at the mine (as detailed in the April number of the MINING RECORD) were prevented by labour difficulties and other unforeseen causes of delay, from delivering this new plant early in June, as called for in the contract. At the time of writing only the foundation bolts for the compressor have been shipped, so the work of preparing the foundation on the mine is necessarily delayed pending their receipt.

Below ground the mine is continuing to open up satisfactorily. At the 200-foot level the north drift—now by the way being run for exploratory purposes in such a direction as to be neither a drift proper nor a cross-cut in the ordinary acceptation of this word—is in about 750 feet from the main shaft and is again in ore. This drift left the big ore body, or rather the general course of the ore, so far as yet ascertained, took it diagonally to the left of the drift, which ran into white limestone. Going back a short distance

from the face a new drive was made diagonally to the right and following the limestone and within three feet the working was again in ore and it has continued to be for some thirty feet, with a full face of ore at the present time. This development has presented a new problem, which can only be solved by further exploratory work to determine whether this is a slip or a parallel shoot of ore to the one practically proved by cross-cuts over a distance of about 350 feet to maintain a general direction which took it out of the drift on the left. The general result of these four cross-cuts has been to indicate that the ore shoot which the drift passed diagonally is from 80 to 90 feet in right-angle width for about 350 feet. A cross-cut now being run, starting from a point 100 feet further back towards the shaft, will probably pass into ore during July, and if it does so it will add another 100 feet to the known length of this big ore shoot. How much farther back the ore will be found to continue is a question to be decided only by later exploration. At the 300-foot level the two drifts from the shaft, in opposite directions, will each be in about 100 feet by the time this appears in print and cross-cutting both ways from each will have been commenced at that distance in. A limited quantity of nice ore was encountered at this lower level, but it was so near the shaft that it was not considered desirable to cross-cut it there. There is no reason to suppose that the ore does not live down, but little definite will be known about its extent and value at this level for at least two or three months.

The Smelter.—The Mother Lode smelter near Greenwood is making progress towards completion. The sample mill building and the ore bins between this and the furnace are about finished, and the upper ore bins, above the sample mill, are well forward. A complete smelting furnace of 250 tons nominal capacity has been received, but the building in which it is to be enclosed has not yet arrived. The lower floor of this building will be constructed of steel. The dust chamber or flue leading to the smoke stack is being arched over with brick supported on frames of heavy steel rails. Other work about the smelter is also in hand.

The Old Ironsides and Knob Hill.—These properties, together with the Victoria and Grey Eagle, which adjoin and are worked in conjunction with them, had early in June about 125 men working on them. The recently constructed large ore bins, on the Old Ironsides and Knob Hill respectively, are reported to be filled with ore, the shipment of which to the Granby smelter has been delayed owing to the Canadian Pacific Railway Company not having completed the two-mile branch line from the Columbia & Western Railway in to the smelter. This work is nearly finished, so it should not be long ere these mines will be shipping regularly. It is understood that stoping is now practicable in the Old Ironsides, Knob Hill and Victoria mines, all three having been developed to an extent that will admit of there being steadily maintained an output of ore comparatively large for a camp just entering upon the shipping stage. The following summary of feet of work done in development underground to June 1st was recently obtained at the mines' office at Phoenix: Old Ironsides—Sinking, No. 1 shaft, 220 feet; drifting, at 100-foot level, 108 feet, at 200-foot level, 904 feet, at 300-foot level (from No. 2 shaft) 380 feet; cross-cutting, at 200-foot level, 670 feet, at 300-foot level, 180 feet;

No. 2 shaft on line between Old Ironsides and Victoria, 400 feet. Knob Hill—Drifting, 1,448 feet, cross-cutting, 1,443 feet, sinking and raising, 528 feet. (Note: The Knob Hill drift extends 80 feet into the Grey Eagle. The foregoing figures given as Knob Hill include drifting 80 feet and cross-cutting 250 feet done in the Grey Eagle.) Victoria—Drifting, at 200-foot level, 790 feet; at the 300-foot level, 300 feet; cross-cutting, at 200-foot level, 1,120 feet, at 300-foot level, 510 feet.

RECAPITULATION.

	Sinking and Raising	Drifting and Cross- cutting.	Total Feet.
Old Ironsides....	220	2,242	2,462
Old Ironsides, No. 2 shaft..	400	400
Knob Hill.....	528	2,561	3,089
Victoria	2,460	2,460
Grey Eagle	330	330
	1,148	7,593	8,741

Winnipeg and Golden Crown—These mines, which are adjoining properties situate in Wellington Camp and distant about eight miles from Greenwood, are apparently to be worked separately in the future as in the past, the amalgamation project suggested several months since having seemingly been abandoned. Mr. Nicolas Tregear, of Rosslund, whom the Rosslund *Miner* describes as "a man of energy and skill" and of whom it further says that he was for a long time underground foreman and subsequently superintendent of the Le Roi mine, Rosslund, has been appointed to the charge of the Winnipeg. This mine has been unwatered and development work has been resumed in it. The ore lately sent to Trail was taken mainly from the surface workings where the cutting of the railway grade exposed a quantity of good ore. About 3,000 feet of work has been done in this mine, less than one-fourth being sinking and raising, the remainder being cross-cutting and drifting. The main shaft is down 330 feet and a considerable proportion of the work has been done at the 300-foot level.

The Golden Crown, owned by the Brandon & Golden Company, of Rosslund, is reported to be looking well, and now that a railway spur has been built to its ore bins, is likely to be a regular shipper. About 2,000 feet of work have been done in the present workings, more than one-third of this being at the 300-foot level. The secretary of the company on his return to Rosslund after a recent visit to the mine expressed himself as well satisfied with its prospects, and the assurances given regarding its condition would seem to warrant his somewhat sanguine opinions as to its future.

The B.C.—Appearances on the surface at the B.C. indicate that this mine is passing from the prospect stage to that of permanent production. With ore coming from three levels—some from openings and other from development work in further opening up the mine; with men employed in sorting ore and loading it on to cars, and with plant and machinery being added, there need be little hesitation in concluding that below ground the mine is in a satisfactory condition, especially having in mind the fully qualified opinions quoted in last month's letter that the work is being done in a thoroughly systematic manner. The

working shaft is down 272 feet and the total number of feet of work done in the course of development was in the first week of June ascertained to then be 3,724. The mine was at that time employing about seventy men.

Work has been suspended at the Oro Denoro mine also in Summit Camp, but it is hoped that this property, reputed very promising, will not long remain idle. The R. Bell has resumed operations with Mr. J. Hanley, one of the original owners, in charge. There is a fine surface showing of copper-gold ore on this claim. An incline shaft has been sunk 45 feet and a winze 35 feet and 147 feet of drifting and crosscutting has also been done. Lower down the hill on which the ore outcrops a second shaft has been sunk vertically 90 feet. This shaft is to be deepened and to expedite the work a small steam plant was lately placed over it. Should results appear to justify the further expenditure a larger plant, including an air compressor, will be installed here.

The Sunset.—It has been reported that an ore vein 36 feet in width has been cut on the Sunset, situate in Deadwood Camp, and owned by the Montreal-Boundary Creek Mining Company, of Montreal. A double compartment shaft had been sunk 186 feet, and in a cross-cut the lode mentioned was cut at a distance of about 400 feet from the shaft. The ore is described as pyrrhotite and sulphide intermixed with copper values lower and gold higher than are usually obtained from the ores occurring in other mines in this camp. The specimen shown to the writer was in appearance distinct from all others seen in the district. As more than 2,000 feet of work had been done on this property without previously meeting with a well-defined vein, this discovery is regarded with much satisfaction by those directly interested in it. The Sunset was last year equipped with plant and machinery equal to all likely requirements for some time to come, so there is no lack of power to prove the extent of the ore body now met with. There are 30 men on this mine's pay-roll.

City of Paris and Majestic.—Fully 5,000 feet of work have been done in development of the City of Paris mine and about 1,150 on the Majestic Company's property near by. These mines are situate in Central Camp, about eight miles southeast of Greenwood. They are worked conjointly, power being supplied to both by the same air compressor. They are owned by two of the Miner-Graves companies and are together employing between 40 and 50 men. The City of Paris is, as already mentioned, regularly sending ore to the smelter at Grand Forks.

Other Mines.—The Athelstan in Wellington Camp is improving with development and is shipping a little ore. The Snowshoe, Gold Drop and War Eagle, all in Greenwood (or Phoenix) Camp, are making steady progress, as, too, is the Buckhorn, in Deadwood Camp. The Great Hopes, also in Deadwood Camp, has resumed work after a long period of inactivity. The Morrison is still idle, but assessments have been made to wipe out liabilities incurred by the old company and to provide funds for a resumption of mining operations under the new regime. The Republic group in Smith's Camp, is likely to be at work again before long as are, too, the Emma, in Summit Camp, and the Brooklyn and Stemwinder, in Greenwood Camp. It is hoped that the Jewel, in Long Lake Camp, will soon be equipped with a stamp mill and

other facilities for the successful treatment of its gold-quartz ore which in respect of both quantity and value promises well for the future.

The Placer Fizzle.—As foretold in last month's letter, the so-called placer excitement on Boundary Creek has proved a fizzle. It does seem absurd that because a dozen or twenty men stake placer ground and half a dozen of their number do a few days' comparatively resultless work, newspapers like the Coast dailies should publish deceptive paragraphs, yet so long as these crib their mining news from local papers given to the publication of boom statements no less unsatisfactory condition of things may be looked for. But this indiscriminate reproduction of unverified "news" is the more to be regretted since it in large measure, justifies the frequent assertion that the mining news published in many of the newspapers is quite unreliable.

ROSSLAND.

(From Our Own Correspondent.)

It is reasonable to expect from what has happened in the province during the past few days that provincial credit will again be established, and that this province will benefit by the changes which have already taken place and those which are already foreshadowed. This is a notable promise, requiring only good management to place it on the highway of prosperity. The attainment of this can only be secured by surrendering our prejudices, be they sectional or political. A legislator should possess wisdom. He should be constructive rather than destructive, just to those that differ from him and true to his native or adopted province as the case may be. Responsible constitutional government is not a privilege but a right. When it is not maintained provincial credit suffers for the intending investor rightly conjectures that those that do not respect the constitution of their province cannot and will not respect vested interests, and contracts and vested interests are, we are credibly informed, of economic significance and are enforceable by public authority.

The readers of the MINING RECORD then will fully appreciate the buoyant feeling which now prevails in this community with regard to the provincial outlook. It is perfectly true that there has been some local disappointment, but on the whole the community is a unit in its desire to advance, even if there is a difference of opinion as to the methods. This is essentially an industrial community depending on the mines for its growth and prosperity. Heretofore politics have been regarded as a luxury to be indulged in by the few, but recently the many have taken a deep interest in the matter of provincial government and this interest is an awakening that is a hopeful sign.

I find amongst the business men renewed confidence in the future, not merely of Rossland but of Southern British Columbia—from Fort Steele to Fort Hope. The reports from the various communities scattered along the route speak for themselves. They denote one word—"progress"—an increased output of ore, new camps contributing their mineral products to the smelters and a growth remarkable if not phenomenal. The Boundary district, as if tired waiting the advent of local smelters, has begun to ship its ores to Trail, while Fort Steele and St. Eugene are handling at least 150 tons per day. This restlessness to go ahead at a quickened pace has been in-

creased by the events on the Coast which seem to promise a solution of the vexed problems which have confronted our people for the past two years.

The ore shipments from Rossland mines for the five months and twenty-one days ending June 21 amount to 65,500 tons. For the half year ending June 30, 1899, there were shipped from Rossland mines 64,064 tons, of which the Le Roi contributed 41,000, the War Eagle 20,500, Iron Mask, 1,282; Centre Star, 1,164; Deer Park, 18, and Evening Star, 100 tons. The mines credited with the output this year are the Le Roi, 46,500; the War Eagle, 10,600; the Centre Star, 7,000; the Iron Mask, 1,500, and miscellaneous 900. Total, 66,500, which will be increased to 71,000 by the end of the month, showing a gain of 6,936 tons for 1900.

The Le Roi is the only shipping mine at present, and as may be judged from the figures given, the other mines have not shipped for some months—since the suspension.

Conjectures are, of course, plentiful, and mine managers smile kindly when the direct question is put: "When are you going to ship?" Judging from the surface and other preparations that are being made, ore shipments will soon begin along the whole line, though from this must be excluded the south belt (known as such locally). In that part of the division one does not see much to encourage the hope of ore shipments there, but Red Mountain is a hive of industry, and before many weeks it is not unlikely that it will be shipping at least 1,000 tons a day—for a time at all events. The value of the 66,500 tons of ore shipped this year is placed at \$1,064,000 gross.

One of the important announcements of the week is that of the flotation of Le Roi No. 2. This has been accomplished by the joint efforts of the London and Globe, and the British America Corporation. The properties which have passed over to the new company are the Josie, Poorman, Annie, Annie Fraction, Rockingchair, No. 1, and Thella. The capital stock of the company is divided into 120,000 shares of the par value of £5 each, equal to \$3,000,000. The purchase price is said to have been \$1,750,000 with \$250,000 reserved for working capital. These properties are among the best which belong to the B. A. C., the Josie has facilities for shipping its ore, and the No. 1 is especially a mine. The Annie is a very likely prospect. I do not know much about the others, but they are believed to be intersected by the main ledge of the War Eagle. The B. A. C. formerly owned from 20 to 22 properties in this division. The Corporation has done a large amount of development work and not without avail either. The Nickel Plate has one of the main veins of the camp. The ore body has been cut at two or three different levels above the 500, and has also been intersected at that level. The ore is of good grade, running from \$18 to \$22 and some of it is even high-grade. The Josie is also a mine with shipping facilities nearly completed. The No. 1 had ore from the grass roots. The Nickel is still owned by the Corporation. The three mines just named will soon be included amongst the shippers, as a large amount of ore has accumulated and is ready for shipping.

The south and southeast face of Red Mountain continues to show vast surface preparations for the output of ore which will soon reach 1,000 tons per day.

The management of the War Eagle and Centre Star, which is practically one, does not seem to be affected by the many reports which are current about town. The management pursues the even tenor of its way, and evidently intends to do so notwithstanding the adverse criticism of those that do not always mind their own concerns. A mining company managed by the public would indeed be a contradictory proposition; it would be something to marvel at in earnest.

Rossland, in spite of the discouraging outlook some weeks past, is now mending its face. Confidence is now fully restored and a building and building moving fever has set in which promises to continue for some time.

A considerable percentage of the population has come to stay, and cosy homes with many fine residences are fast supplanting the typical cabin of the pioneer prospector. Surface improvements here are somewhat expensive owing to the rocky foundations which must be drilled and blasted to make room for the building improvements which progress is everywhere making.

One hears now on all sides the noise of the steam drill, and the boom of the blast, even in the heat of the city where the city and railway corporations are making extensive preparations for building improvements. The mining pay-roll on June 15th amounted to \$100,000, and this of course was exclusive of city and railway pay-rolls, which are a large item here.

The Le Roi is shipping from 15 to 18 cars of ore daily to the Northport smelter. This is the only mine that is shipping, but by midsummer the output will probably be double its present dimensions.

The promoters of mining enterprises, and the brokers have recovered from the despondency to which they submitted a few weeks ago. There is an opinion which is fast acquiring force that Rossland will yet have a boom quite substantial in character. The steady shipments of ore from the Boundary mines to the Trail smelter suggest the possibilities of that district in the future, and with the restoration of provincial credit which will be the result of stable government \$50,000,000 is not an over estimate of what will be invested in that portion of British Columbia extending from Fort Steele to Midway, during the next twelve months.

One of the best evidences of the growth and progress of the mineral industry is the large amount of machinery which has been supplied to mine managers since the beginning of the year, especially by the Jenckes Machine Company. This firm has supplied since January 1st seven 10-drill plants, two 40-drill compressors, one 7-drill compressor, one 7-drill compressor, a number of other companies running from four to seven drills and several hoisting plants, and other machinery. These orders have nearly all been filled. They measure to some extent the progress of the mining industry from Fort Steele to Yale, and suggest the possibilities of the near future.

It is not drawing on the imagination in the least to predict for Rossland much prosperity henceforward. It is true that the schemesters are just now finding a hard road, and the scrip known as K. K., of which there are many large bodies, is not in as much favour as in days of yore, but this implies no lack of confidence in standard prospects which are honestly managed and the development of which is along the lines of experience.

To sum up, the outlook from a legitimate mining point of view, was never better than it is now.

SLOCAN.

(From Our Own Correspondent.)

All interest for the month has of course centred in the elections and notwithstanding that the frequent accompaniments of disorder and ill-will have been absent to an unprecedented extent, business men and others in the riding have realized none the less the importance and gravity of the situation.

While prospectors and those having property for sale complain bitterly of the lack of concern shown by the outside world, the more thoughtful go further than this and trace the unfortunate condition which prevails to its true source, viz: the want of a stable government in whom investors can place implicit reliance for the future. This satisfactory and devoutly to be desired consummation will, it is hoped, soon become *un fait accompli* and then, and not till then can we who depend entirely for our prosperity upon the support accorded by the investing public reasonably look for improvement.

As viewed by capital, the results in West Kootenay must come as a distinct disappointment, the figures going to show how completely the cause of organized labour has triumphed. That this need necessarily operate as a detriment must not, however, be taken for granted, everything, of course, depending on the attitude adopted by the representatives of the unions and the good sense which we all expect to be displayed in dealing with questions involving principles vitally affecting monetary interests. For the rest, we trust to the fame and richness of Kootenay to reassert itself as of yore.

A glance at the statistics as given in the report of the Minister of Mines for 1899 shows at a glance the deplorable condition into which the Slocan has sunk by reason of the period of enforced and—it is to be regretted—unnecessary depression through which it has passed. Last year about this time I drew attention with some degree of reluctance to the fact that the production for 1898 was over \$600,000 less in value than that for the preceding year, entertaining hopes at the same time that we should fully recover our lost prestige in 1899. What, then, shall be thought of our sorry position now when we have to confess not only to a further decline of nearly a million dollars, but—retrogression with a vengeance—an output actually less than that of four years ago. For the first time, too, the Rossland district has the distinction—somewhat empty, it is true—of being at the head of the poll, so to speak, although the value of its production was less by some \$50,000 than that of the Slocan in its prime.

Predictions for the future I shall not attempt to make, so much depending at this juncture not merely on the actions of the Local Legislature, but in an even greater degree perhaps upon Imperial considerations and the course of events in localities far removed from the immediate seat of our operations.

The act which came into force last year compelling all companies and free miners to renew their licenses simultaneously, namely on May 31st, though causing much vexation and misunderstanding at the time, has worked to perfection on this occasion, and is destined to save a deal of trouble in the future, simplifying as it does the duties of the recorder in common with those of the general public.

When one considers the bitter outcry there was in

the Transvaal before the war with respect to the obnoxious dynamite monopoly it is cause for congratulation that in British Columbia nothing of this sort at least obtains. Owing to competition induced by the advent of a local factory near Nelson, dynamite can now be obtained for approximately \$7.00 a case, a very material consideration in the carrying out of extensive mining operations.

Of the mines which are looking up, we note remarkable discoveries of ore have recently been made in the Slocan Star, and the Bosun still continues to hold its own in face of a steady output of 100 tons a month, shortly to be increased.

The Payne at its annual meeting in Montreal reported excellent progress, the directors referring in particular terms to the welcome fact that their reserves were even greater if anything than at this time last year. The Whitewater is again shipping, and work has already begun on the fine concentrator which is to be built for the Ivanhoe. We should, perhaps, hardly consider the moment opportune for introducing mines to the public, but nevertheless it is stated that the Emily Edith group will shortly make its appearance upon the London market. The completion of the waggon road up Springer Creek will greatly facilitate operations at the Arlington mine and it is of interest to know that the new owners of the Chapleau are already getting down to business in connection with the milling plant which they propose to erect at an early date.

BANK OF MONTREAL—ANNUAL GENERAL MEETING.

HELD 4TH JUNE, 1900.

THE eighty-second annual meeting of the shareholders of the Bank of Montreal was held in the board room at one o'clock yesterday.

The report of the directors was read by Mr. E. S. Clouston, general manager, as follows:

The directors have pleasure in presenting the eighty-second annual report, showing the result of the bank's business of the year ended 30th April, 1900:—

Balance of profit and loss account, 30th April, 1899	\$1,102,792 72
Profits for the year ended 30th April, 1900, after deducting charges of management, and making full provision for all bad and doubtful debts.	1,524,388 08
	\$2,627,180 80
Dividend 5 per cent., paid 1st December, 1899	\$600,000
Dividend 5 per cent., payable 1st June, 1900	600,000
	1,200,000 00
Amount credited to rest account	1,000,000 00
	\$ 427,180 80

Since the last annual meeting of the shareholders, a branch of the bank has been opened at Sydney, N.S.

A branch office has been opened in the leased premises of La Banque Ville Marie, on the corner of Wellington and Centre streets, Point St. Charles, Montreal.

With deep regret the directors have to record the death of their esteemed colleagues, Messrs. Hugh

McLennan and W. W. Ogilvie, the former of whom had been a member of the board for upwards of seventeen years, and the latter for upwards of five years.

The vacancies on the board have been filled by the election of Messrs. James Ross and R. G. Reid.

All the offices of the bank, including the head office, have been inspected during the past year.

STRATHCONA AND MOUNT ROYAL,

President.

Bank of Montreal, Head Office, 4th June, 1900.

THE GENERAL STATEMENT.

The general statement at 30th April, 1900, was as follows:

LIABILITIES.	
Capital Stock	\$12,000,000 00
Rest	7,000,000 00
Balance of Profits carried forward	127,180 80
	\$ 7,427,180 80
Unclaimed Dividends	2,212 01
Half-yearly Dividend, payable the 1st June, 1900	600,000 00
	8,029,392 81
	\$20,029,392 81
Notes of the Bank in circulation	\$ 6,161,649 00
Deposits not bearing interest	10,709,969 34
Deposits bearing interest	41,936,536 97
Balances due to other banks in Canada	15,549 28
	58,822,804 59
	\$78,852,197 40
ASSETS.	
Gold and Silver coin current	\$ 2,303,209 19
Government Demand Notes	2,814,430 00
Deposit with Dominion Government required by Act of Parliament for security of general bank note circulation	300,000 00
Due by agencies of this Bank and other Banks in Foreign Countries	\$11,640,790 26
Due by agencies of this Bank and other Banks in Great Britain	4,008,131 55
	15,648,921 81
Dominion & Provincial Government Securities	518,642 39
United States Railway Bonds	1,570,365 25
Notes and cheques of other Banks	2,571,052 97
	\$24,726,621 61
Bank Premises at Montreal and Branches	600,000 00
Current Loans and Discounts, (rebate interest reserved) and other Securities and Assets	\$53,430,332 13
Debts secured by mortgage or otherwise	32,659 67
Overdue debts not specially secured (loss provided for)	42,583 99
	53,525,575 79
	\$78,852,197 40

BANK OF MONTREAL,
Montreal, 30th April, 1900.

E. S. CLOUSTON,
General Manager.

THE GENERAL MANAGER.

Mr. Clouston then said:—

In the statement submitted to you to-day the principal changes which have taken place during the past year are: the liabilities column shows an increase in circulation of \$700,000, and an increase of \$6,500,000 in deposits bearing interest; while on the other side there is a decrease of \$3,800,000 in the reserves held in Great Britain, and an increase of \$10,600,000 in loans. A considerable percentage of the latter increase represents a legitimate demand from commercial customers for advances, arising from the more active and expanding conditions of trade. The remainder is employed in special operations of a temporary character which will probably be closed out in the next few months. Canada has good reason to be well satisfied with the results of business for the last twelve months. From every province of the Dominion, with the exception of British Columbia, come reports of universal prosperity, active trade, good crops, and generally speaking satisfactory prices. The lumber trade never was in better condition; while the dairy exports have only been limited by the extent of the cold storage accommodation, which is still insufficient for the growing wants of the trade. Railroad earnings were the largest in the history of Can-

ada, and the year ends in a blaze of universal self-congratulation.

For the coming year there are some indications of over-production. Stocks in the merchants' hands are too large and in some districts collections are disappointing. In fact, at the moment there is something of a check, which, however, may prove highly salutary, if the commercial community will only proceed with caution till the new crop is assured and matters have adjusted themselves on a more satisfactory basis.

British Columbia has not shared in the general prosperity to the same extent as her sister provinces, owing to the effect of injudicious and ill-considered legislation. This has created a feeling of distrust abroad, and the inflow of foreign capital, so necessary to the development of her immense natural resources, has been seriously checked.

The Finance Minister of Canada has introduced a number of amendments to the Bank Act, which are now before the House. They are the outcome of ten years' experience of the working of the present Bank Act, and will no doubt materially strengthen it, and make it a more workable measure. Full details of these amendments have appeared in the papers, and it is not necessary for me to refer to them here.

If there are any questions respecting the business of the bank, I shall be pleased to answer them.

THE VICE-PRESIDENT.

Hon. George A. Drummond said:—

I do not doubt you will receive with satisfaction the statements now laid before you and the explanations of the General Manager.

The profits have enabled the directors to add one million of dollars to the rest, and pay the usual dividend of ten per cent. for the year. This rate of dividend has continued unbroken for twenty years, supplemented, however, in four of these years by a bonus. The addition to the rest is fully justified, I think, by the changed conditions since the year 1884, when capital and rest first attained the proportions so long maintained of twelve and six millions respectively. In 1884 the combined capital, rest and profit and loss account aggregated \$18,306,000; in 1900 they were \$19,130,000. But the total liabilities to the public, which in 1884, were \$25,941,000, had risen in 1900 to \$58,822,000. I by no means desire to convey the impression that the ability of the bank to meet its engagements depends on the size of its rest, but ob-

viously an increase of the rest is quite in order, and no doubt will meet with your approval, as an increased rest not only gives additional stability but helps to steady the dividend.

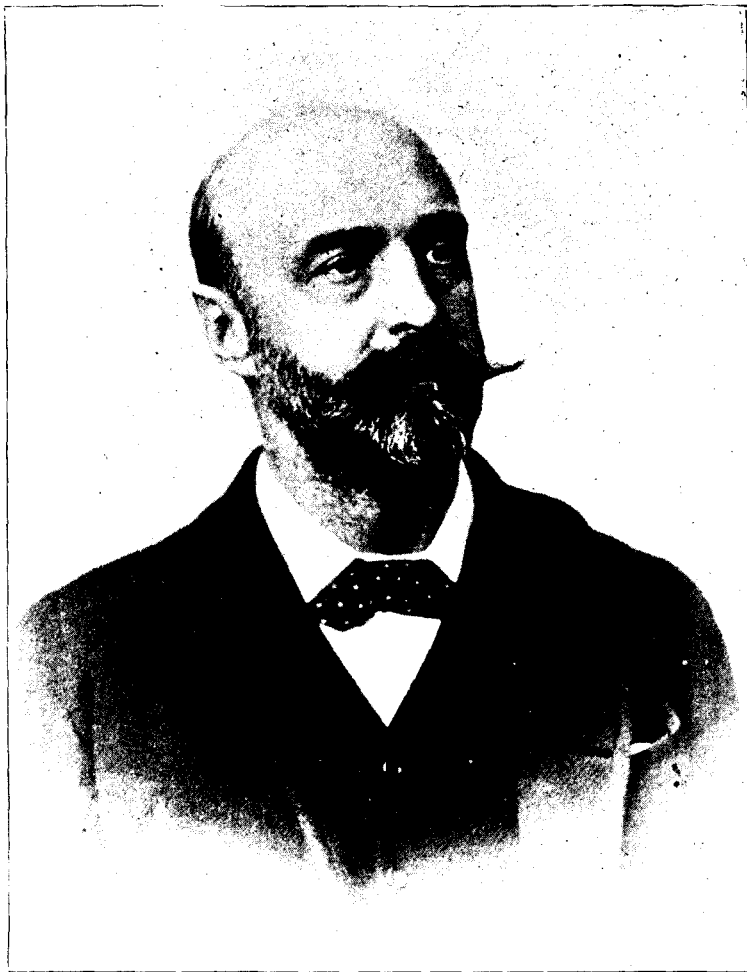
A further comparison of our condition in the year 1884 with the present time, is interesting and instructive. As already said, the liabilities of the bank had risen from 26 millions of dollars in 1884 to 59 millions in 1900. The number of agencies or branches had risen from 31 to 52. The number of the staff had increased from 299 to 562. The deposits had increased from \$22,588,000 to \$63,445,000, and the loans in Canada had increased from 30 millions to 53½ millions. So that to earn approximately equal profits, double the business must be done and the cost of

doing it proportionately increased. The public, therefore, is getting its banking business done for about half the price ruling in 1884. No doubt this is a substantial benefit to all commercial and manufacturing business.

The melancholy collapse of La Banque Ville Marie in this city does not reflect on our banking system which could not provide for a series of gross frauds, revealed in the trials of the unhappy officers; its failure had no commercial effect, but caused much distress among its depositors, many of whom could ill bear their losses, and whose case rightly excited much public sympathy. The board has had occasion during the year to lament the sudden and unexpected death of two of its members, Mr. Hugh McLennan and Mr. W. W.

Ogilvie, and has recorded its deep sense of the loss which the bank has experienced in being deprived of their prudent counsels. The board considers itself fortunate in having been enabled to fill these vacancies by the election of Mr. James Ross and Mr. R. G. Reid.

In the general trade and commerce of the country we find evidences of the period of prosperity into which we have entered. Good harvests and good prices, especially for dairy produce, have caused prosperity throughout the country. Immigration has been less rapid than can be wished, but with the activity in all branches of trade and manufacture in the Mother Country, nothing else could be anticipated. The lumber industry has been prosperous and prices much above the average; the great destruction of sawed stuff at Ottawa has, no doubt, temporarily af-



E. S. Clouston, General Manager Bank of Montreal.

affected prices. The consumption of a special class of timber for the manufacture of paper pulp promises to have important effects on some districts. It appears to me that enormous waste is going on in this matter, and that some process of recovery whereby this indispensable material can be used more than once is looming in the future. Enormous strides are being taken in this country towards the production of iron and steel, and when the developments now in progress reach completion, we may hope that Canada will not only supply her own wants, but become a factor in the supply of foreign markets.

Fuel has advanced materially in price, though to a smaller extent in this country than in Great Britain. This is due to a considerable rise in wages and materials and supplies of all kinds, and like the other advances already noted, has an important influence in checking expansion of business. It appears to me, that the fact that steam coal of similar quality to Nova Scotian is costing more in Glasgow, Scotland, than in Montreal, may very well be recorded to the credit of our protective duty on the article, the Montreal coal having been carried nearly one thousand miles. At the pit head, Canadian coal is very much cheaper than at any point in Great Britain.

No better evidence of business activity can be had than the work done by our great carrying companies. Taking the returns of the Grand Trunk and the Canadian Pacific Railways together, we get these figures:

The gross earnings for the years 1895 and 1899, under the following heads, compare as follows:— Passenger traffic, 1895, \$10,133,000; 1899, \$12,836,000; an advance of 26 per cent. Freight, 1895, \$23,129,000; 1899, \$32,809,000; an advance of 42 per cent. Mail and express, 1895, \$1,804,000; 1899, \$2,268,000; an advance of 25 per cent. Miscellaneous, 1895, \$1,570,000; 1899, \$2,764,000; an advance of 70 per cent. The totals of the foregoing in these years are \$36,636,000, and \$50,677,000 respectively; or an advance of 38 per cent.

The North American steamship companies have had a fairly prosperous year; many of their vessels have found profitable employment in the various transport services connected with the South African war, and the decreased tonnage thus available for their regular trade has tended to enhance freight rates, more especially on export cargoes. The volume of imports carried by the Canadian lines was somewhat less than during the previous twelve months, the freight rates were somewhat dearer and the number of vessels fewer. The volume of exports was smaller, and the average of freight rates more especially on grain and provisions was higher. The current season has opened favourably and the volume of export traffic is likely to be fully equal to the available tonnage during the next two or three months. The passenger traffic was moderately satisfactory and the companies anticipate a free movement both east-bound and west-bound during the year. They complain of the large advance in the price of coal and of the enhanced wages, but their profits are, nevertheless, said to be adequate.

As regards the port of Montreal, the last two years compare as follows: The total value of merchandise entered for consumption in the year ending 30th April, 1899, was \$54,282,140; and for the year ending 30th April, 1900, \$59,907,767; an increase of 10½ per cent. On the other hand, the value of goods produced and otherwise exported in the former year

was \$62,170,354; and last year, 65,107,222, or an increase of 4.7 per cent.

The aggregate trade of Canada by years is as follows:—

	Entered for Consumption.	Exported.
1895	\$105,252,500	\$113,638,800
1898	130,698,000	164,152,700
1899	154,051,000	158,895,000

In the last five years, therefore, the excess in value of total exports over total imports has been \$44,153,300, and this excess of exports over imports has happened only once before in the history of Canada, *i.e.*, in 1880.

One important evidence of better times is to be found in the comparative immunity from losses by business failures which in the respective years are as follows: 1896, \$17,300,000; 1898, \$10,000,000; 1899, \$10,727,000. If we except the reigning stagnation on the Stock Exchange due to a general pause in speculation and dearer money, the indications are of a continuation of good times. It is probable that some revival will be consequent on a decline in the cost of staple raw materials which appears probable. It is impossible to follow the progress of all branches of trade, but the general result, with some special exceptions, is the same, full employment, press of business, good prices, advanced wages. In the middle of all this we are apt to forget that bad times will recur; there are evidences already, however slight, of a reaction. The high prices of lumber and labour, are causing a cessation of building and iron and steel are getting cheaper. One important factor, which may affect our manufacturing industries, is the evidence of a spirit of aggression in outside markets by the great American combinations and trusts; this may develop into proportions which will produce consequences now unforeseen.

Nothing in recent times has excited so intense an interest in this country as the war in South Africa, now happily drawing to an end. Its progress day by day, indeed hour by hour, has been watched with feverish anxiety. The successive relief of the heroic beleaguered garrisons of Ladysmith, Kimberley and Mafeking, and the capture of the Boer centres have given occasion for general rejoicing. That a considerable body of Canadian volunteer soldiers sent out by the Dominion, have, for the first time in our history, been fighting on another continent, side by side with the best soldiers of the Empire, and proving themselves by courage and soldierly qualities equal to the honour, has intensified our interest. To ourselves it is a source of pride that among them is a corps of mounted infantry, 589 men, equipped, armed and carried to the seat of war through the princely liberality of the President of this bank. Heavy as is the price exacted in war, for any benefits—not in treasure alone, for that is secondary—but in blood, Canadians now occupy a place among the nations not hitherto accorded them, and can realize as never before that their country is part and parcel of the Empire, while the most distant shore where our flag flies is but a portion of our heritage.

No one who has made himself acquainted with the facts can doubt that the war was not only a just and most righteous, but also an unavoidable one, or only to be escaped by Great Britain confessing herself unable to protect her citizens, and abandoning all pre-

tensions to Imperial power. I hail the resolve that the territories now conquered at such a heavy price shall be held under the British flag, with the security to life, liberty and property which it everywhere guarantees.

This bank, departing in some measure from precedent has contributed liberally to Imperial and home organizations having the care of our soldiers and their dependents for their object; for this I do not doubt you will give your approval. Our duty would not be done if we fail to recognize to the full how much this little force has accomplished for the credit and best interests of Canada, and prove our gratitude by deeds.

I will move: "That the report of the directors now read be adopted, and printed for distribution among the shareholders."

The motion was seconded by Mr. A. T. Paterson.

THE DIRECTORS.

The ballot resulted in the election of the following Directors: R. B. Angus, Esq.; Hon. G. A. Drummond; A. F. Gault, Esq.; E. B. Greenshields, Esq.; Sir William C. Macdonald; A. T. Paterson, Esq.; R. G. Reid, Esq.; James Ross, Esq.; Rt. Hon. Lord Strathcona and Mount Royal, G.C.M.G.

At a meeting of the new board on Tuesday, the 5th inst., The Right Hon. Lord Strathcona and Mount Royal, G.C.M.G., was re-elected President and Hon. Geo. A. Drummond, Vice-President.

PRODUCING MINES.

OUR Rossland correspondent telegraphs: "Ore shipments for the six months ending June 30th estimated 70,000 valued at \$2,000,000 gross, being an increase of 9,000 tons for the corresponding period."

FOREIGN COAL SHIPMENTS.

FOLLOWING are the foreign coal shipments for the month ending 31st May, 1900:—

NEW VANCOUVER COAL CO.			
Date.	Vessel.	Destination.	Tons.
	SS. New England, Alaska		40
	SS. Mincola, Port Los Angeles		3,439
	SS. Robert Adamson, Frisco		4,501
	SS. New England, Alaska		40
	SS. Titania, Port Los Angeles		5,882
	SS. Ruth, Skagway		178
	SS. San Mateo, Port Los Angeles		4,472
	SS. New England, Alaska		10
	SS. Robert Adamson, Frisco		4,527
	SS. Aztec, Port Los Angeles		5,385
	SS. Titania, Frisco		5,973
	SS. Meteor, Cape Nome		25
	Ship Paramitta, Lahani, H.I.		2,192
	SS. Sea Lion, Port Townsend		35
	SS. Robt. Adamson, Frisco		4,587
Total			41,286

LADYSMITH (EXTENSION).

Date.	Vessel.	Destination.	Tons.
2—	SS. Dirigo, Pt. Townsend		225
2—	SS. Valencia, Frisco		973
10—	SS. Warfield, Frisco		4,500
10—	Universe, Frisco		3,400
10—	Tellus, Frisco		3,359
10—	City of Topeka, Ketchikan		180
10—	SS. Wanderer, Port Townsend		10
15—	Brig Colorado, Juneau		1,712

Date.	Vessel.	Destination.	Tons.
22—	Ship America, Port Townsend		1,500
22—	Barque Ayai, Seattle		176
22—	SS. Warfield, Frisco		4,500
22—	SS. Hilda, Port Townsend		580
22—	SS. Bristol, Frisco		3,000
22—	Ship Louis Walsh, Frisco		1,439
22—	SS. Tellus, Frisco		1,612
22—	SS. City of Topeka, Ketchikan		159
Total			27,316

UNION.

Date.	Vessel.	Destination.	Tons.
1—	SS. Tellus, Frisco		3,300
11—	SS. Brunswick Castle, Alaska		139
11—	SS. Dirigo, Port Townsend		200
11—	SS. Tartar, Vancouver		2,700
11—	SS. Bristol, Frisco		2,300
17—	SS. Danube, Pt. Townsend		300
17—	SS. Wellington, Frisco		2,550
15—	SS. Cutch, Vancouver		80
25—	SS. Wanderer, Port Townsend		40
25—	SS. Holyoke, Ketchikan		222
25—	SS. Sea Lion, Port Townsend		40
25—	SS. Rosalie, Pt. Townsend		125
Total			11,996

NEW VANCOUVER COAL CO.

The following is the list of foreign shipments of the New Vancouver Coal Co. to the 20th inst:—

Date.	Vessel.	Destination.	Tons.
2nd—	SS. San Mateo, Frisco		4,486
7th—	SS. Aztec, Port Los Angeles		5,491
8th—	SS. Titania, Frisco		5,914
13th—	SS. R. Adamson, Frisco		4,609
19th—	S.S. Titania		5,900
Total			26,400

THE METAL MARKET.

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

COPPER.

THE market has shown rather more activity the past week, and a number of transactions have taken place. The buying, however, has not been large, though it is expected that the demand will continue, as manufacturers do not appear to be fully supplied. Consumption, both at home and abroad, appears to be good.

Lake copper is worth 16c., electrolytic in cakes, wire, bars or ingots 15½, cathodes 15½ and casting copper 15½.

At a meeting of sheet copper and brass manufacturers held on the 21st June, it was decided to make no change in price lists or discounts.

LEAD.

Considerable business is reported this week, and prices are unchanged. New York, 3.70@3.75; St. Louis, 3.65@3.70. The market abroad for Spanish lead is 2s. 6d. higher or £17 7s. 6d; English, £17 10s.

SPELTER.

A fair amount of business has been transacted at last week's prices. Owing to a serious falling off in production, it is expected that, in some quarters, manufacturers whose supplies are said to be very low, will be obliged to buy more largely, in which case a sharp advance in prices may be looked for. Prices now stand New York, \$4.15; St. Louis, \$4.00 to \$4.05.

THE LOCAL STOCK MARKET.

THE stock market has now a better tone since the elections are over. Business is going on smoothly, but without excitement.

Crow's Nest shares have been handled to a considerable extent, especially in the West, and the price is held firmly at \$38 to \$39. North Star is a shade weaker and is quoted to-day at \$1.02; Sullivan is shipping and is quoted at 12½.

Winnipeg has been one of the best sellers, the chief demand for this stock being in the West.

Knob Hill has fallen to 45 c., Old Ironsides to 75c. and King to 8c. Shipping has at last commenced in earnest from the Boundary district, which will have a tendency to strengthen Boundary shares.

The Athabasca mill run for May gave returns of \$18,500, and we are informed from Nelson that the June clean-up will exceed \$25,000.

Noble Five has fallen to 13½ and Payne to \$1.

The Le Roi No. 2 was successfully floated in London, and bids have been received in British Columbia from London of £6, which is a premium of £1 per share already, although it is scarcely a month since the company was floated. Iron Mask is quoted at 33, War Eagle at \$1.50 and Centre Star at \$1.50.

MACHINERY CATALOGUES.

WE shall be pleased to mail catalogues of any of the undermentioned firms to our readers free of charge, on application:

Ainsworth & Sons, Wm., fine balances; Armstrong & Morrison, riveted steel pipe ore cars, etc.; B. C. Assay & Chemical Supply Co., assayers' supplies; Braun & Co., T., assayers' supplies; Beatty & Sons, M., cables and tramways, dredges, pumps, etc.; Bennett & Co., Wm., fuse safety couplers, etc.; California Wire Works, cables and tramways; Canadian Rand Drill Co., drills and compressors; Canadian General Electric Co., electrical plants; Cooper Mfg. Co., The James, compressors, power and hand drills; Denver Fire Clay Co., assayers' furnaces, etc.; Fraser & Chalmers, mills, pumps, hoists, engines, etc.; Fairbanks, Morse & Co., steam and gas engines, compressors, etc.; Gates Iron Works, engines, boilers, crushers, etc.; Hamilton Mfg. Co., The Wm., crushers, mills, hoists, etc.; Hendy Iron Works, Joshua, modern mining machinery; Hinton & Co., Geo. C., electrical supplies and machinery; Hearn & Harrison, engineering, mining and surveying instruments; Hamilton Powder Co., explosives; Howells Mining Drill Co., drills, all kinds; Jeffrey Mfg. Co., elevating machinery; Jenckes Machine Co., hoisting and milling machinery, Krupp,

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E. S. CLOUSTON, - - - - - General Manager.

A. Macnider, Chief Inspector and Superintendent of Branches. W. S. Clouston, Inspector of Branch Returns.

F. W. Taylor, Assistant Inspector.

JAMES AIRD, Secretary.

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TO JOINT STOCK COMPANIES.

We have at considerable expense brought out a book, the copyrights on which are applied for, for the use of Joint Stock Companies in which to keep a record of the following:

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- Register of Shares Transferred.

The book contains suitable conveniences for correctly keeping all the detail set forth in the Act, and the summary of shares and list of shareholders can be arranged for any term wished for, the stock pattern allowing for 10 years business of the company.

It is a matter of fact that most of the share dealings in British Columbia are contained in books which do not comply with the Act, being copies of American models called Stock Ledgers, and not suitable for the purpose; take for example the numbers of the shares, and also the amount paid or agreed to be considered as paid on the shares held by any member.

If you are interested send us an outline as to the number of shareholders you at present have, and how many have ceased to be members during the past year and we will quote you for a book good for say 10 years business. For a small company we can supply a book carrying all the above information for \$6.00.

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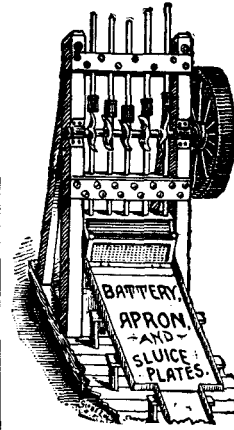
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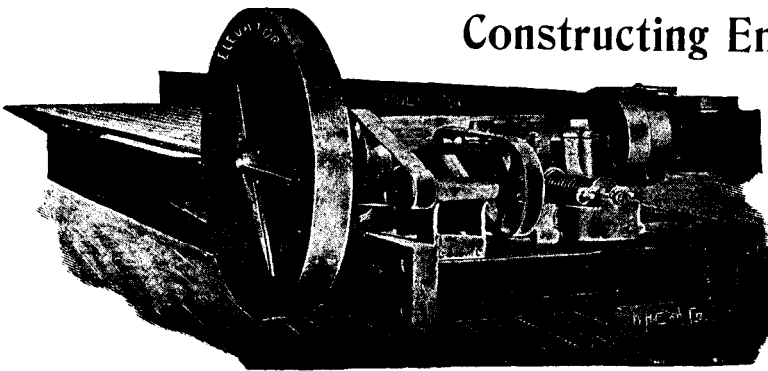
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