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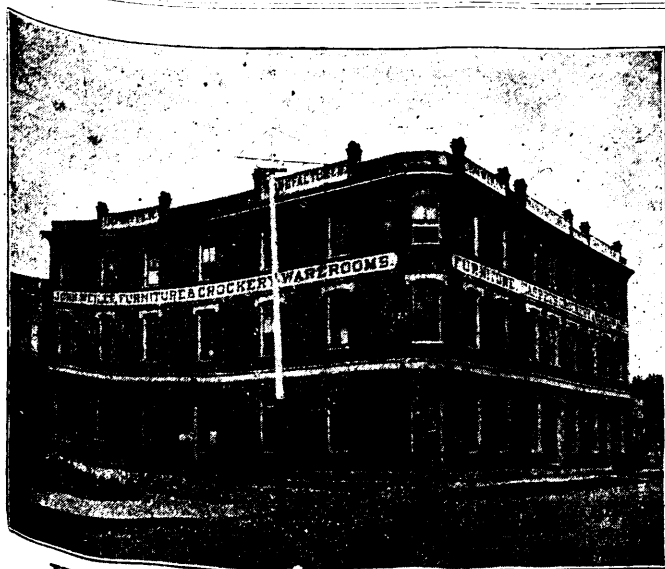
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TABLE OF CONTENTS.

	PAGE.		PAGE.
Enquiry Department	5	The Coal Mines	34
Publishing Department	5	An Enterprising Journalist	34
Purchasing Department	5	Produce of the Mines	35
Mineral Exhibits	6	Gold Saving Machine	35
Mining Papers on File	6	Latest from Big Bend	35
Agents	6	A Splendid Showing	35
Editorial Notes	6	Happenings at the Mines:—	
Fourth Lecture on Chemistry	10	Alberni	36
Trout Lake District	11	Ashcroft	36
The Springer Creek District	14	Ainsworth	36
Trail Creek	16	Big Bend	36
Big Bend	17	Cariboo	36
Cariboo Creek	19	Golden	36
Trail Creek Mines	20	Kaslo	36
Nelson	20	Nanaimo	37
Rossland	21	New Denver	37
Kaslo	23	Nelson	37
New Denver	25	Quesnelle	37
Sandon	26	Revelstoke	37
Fort Steele	26	Rossland	37
Donald	28	Trail	37
Lardeau District	29	Trout Lake	37
Notes from Boundary Creek	30	Vernon	37
Important Points in Kootenay	30	A Good Printing Company	38
The Mining Lectures	31	Catalogues Received	38
Railway News	32	Hotels	38
Notes	32	Mining Centres and How to Reach Them	38
A Complete Establishment	33	Province of British Columbia	38



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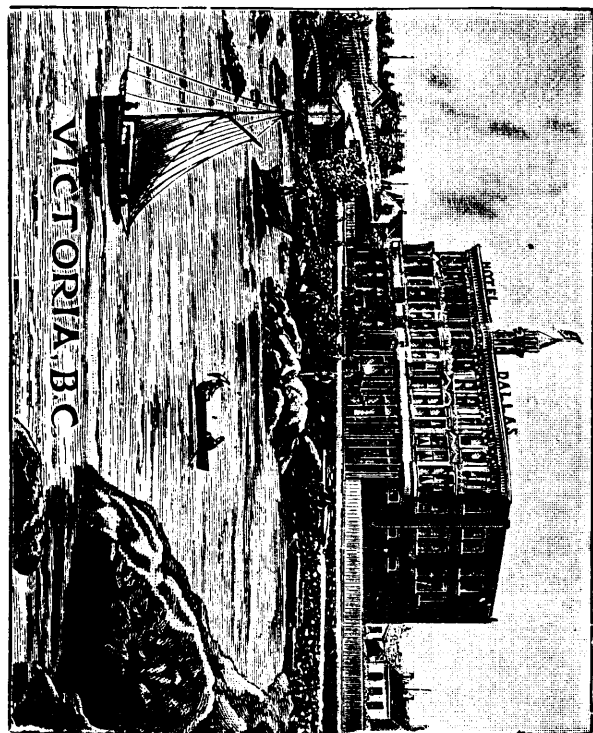
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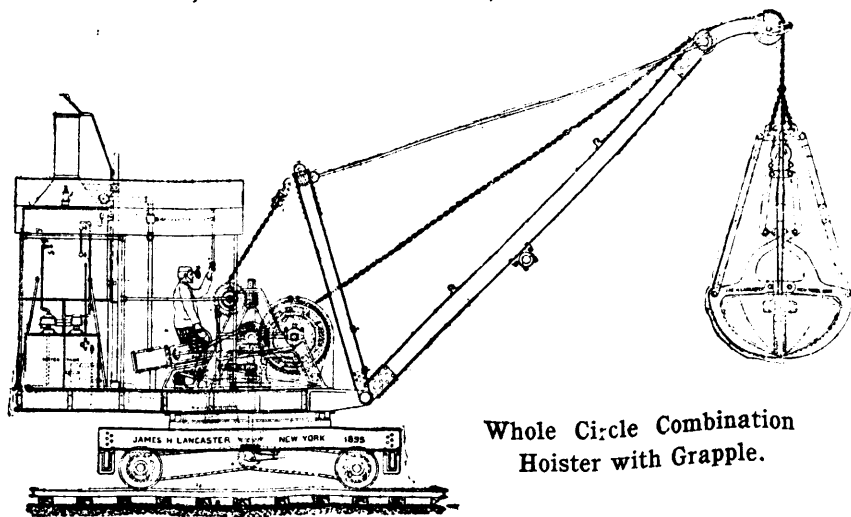
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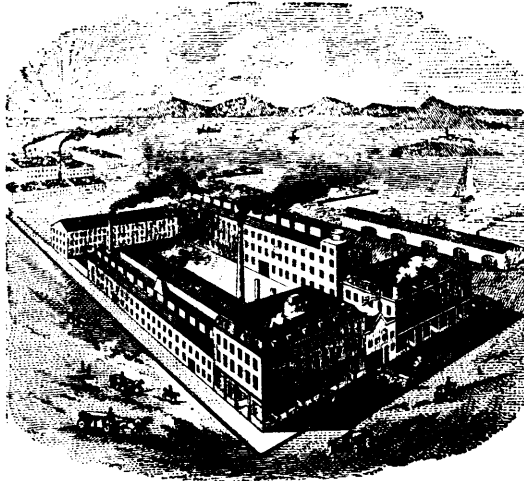
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 FOR GRESBY AND PENDER ISLANDS—Fridays at 7 o'clock.
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 FOR PLUMPER PASS—Saturday at 7 o'clock.
 FOR PENDER AND MORESBY ISLANDS—Thursday at 7 o'clock.

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VOL. II.

MAY, 1896.

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VOL. 2.

MAY, 1896.

No. 5

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In connection with the B. C. MINING RECORD we have established an "Enquiry Department" for the purpose of furnishing information about the mining resources and mining industries of British Columbia to parties outside the Province who may desire to obtain the same. For this we make no charge, but, on the contrary, will only be too glad to reply to any communications addressed to

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Inland Sentinel	Kamloops, B. C.
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G. L. Eastabrooks	New Denver, "
Wm. M. Shaw & Co.	Spokane, Wash.
Shaw-Borden Co.	" "
E. A. Thomas & Co.	" "
J. W. Graham & Co.	" "
Hotel Tacoma	Tacoma, "
McDonald News Stand	" "

EDITORIAL NOTES.

The British Columbia MINING RECORD has nothing whatsoever to do with party politics. Its sole object is to aid in bringing about the rapid development of the mining industry in this Province and anything, whether political or otherwise, affecting this object will be dealt with in these columns.

We have more than once referred to the neglect of British Columbia mining interests by the Dominion Government, but our protests, as well as those of our contemporaries in different sections of the country, have so far received no attention.

So little has been done for the mining community of this Province that one would almost imagine we had no member representing our interests, or if we had one that he utterly neglected his duty or was unable to command the respect and attention to which his position entitled him.

Whatever may have been the cause the fact remains that the mining districts of British Columbia and especially the Kootenays have been utterly neglected by the Federal Government. Take for instance the mail service. The wretched manner in which it is being handled by the post office department is a crying disgrace, and although nearly every newspaper in the country has reminded the authorities over and over again of their shortcomings, yet to-day there are few, if any, signs of improvement.

Petitions for improvements in our river channels and for the erection of better public buildings in our towns, as well as other much needed reforms, have almost invariably remained unanswered, and while half a million dollars or more were being squandered in a useless session of Parliament not a cent could be spared for necessary public works in Kootenay.

Yet the expenditure of money in assisting the development of our mines would have been a good investment on the part of Canada, far better than the thousands of dollars spent on works in the East which to-day are actually lying idle. The amount of treasure which would flow from our mines into the coffers of the Dominion as a result of development and the increased circulation of money amongst all classes through the impetus it would give to trade and manufacturers can hardly be estimated. Yet in spite of this—in spite of a fact which must be apparent to every thinking man the Dominion Government have practically given us the go-by, and as a result the wealth which should be retained in the country is flowing into the coffers of Uncle Sam.

All this time our mining men and mining companies have had to pay dearly for their machinery and supplies. According to the tariff, machinery used in mines is supposed to be admitted free, but the saving clause, "so long as it is not of a kind made in Canada," practically makes all mining machinery pay a high rate of taxation. The Canadian manufacturer naturally adds the sum he is protected to his price and the foreign made article has to pay a high duty to the Government. In both cases the mine owner is the victim.

The extension for another year of this clause referring to free mining machinery, of which we have heard so much lately is, therefore, a delusion and a snare. It affords no relief to the miner. He is either limited in his choice of machinery and prevented from availing himself of the most improved kinds or he is taxed heavily. This is unfair to an industry which is as yet in its infancy, but which if given a fair chance will be one of the most important in the Dominion. It is in reality taxing one industry for the benefit of others.

If our representative at Ottawa had succeeded in inducing the Government to admit mining machinery free of duty not for one year alone but for all time without any conditions added thereto, he would have earned the thanks of the mining community. But as it is he has actually gained nothing for us, as the concession granted for another year is really no benefit at all. It is making a mountain out of a molehill.

It is admitted east and west, and north and south, that the wealth of British Columbia in minerals, as yet in an undeveloped state, will tend to enrich in a remarkable degree the whole of Canada as soon as our mines can be placed in thorough working order. But while the treasure lies hidden in the rocks it is of no use to anyone, and yet, notwithstanding this—notwithstanding the vast treasure within reach, the Government adopts a policy which prevents our taking hold of it.

The policy of throwing obstacles in the way of a proper development of our mines by means of the tariff is a suicidal one all round. It does not even benefit the Canadian manufacturer in the long run. It simply limits his market. Let the development of our mines be encouraged by enabling mining men to get the best and cheapest machinery and the mining industry will go ahead by leaps and bounds, until machine works in Canada as well as elsewhere will have all the trade they can attend to in this Province, whereas now the demand is comparatively limited.

Besides this the wealth flowing from the Kootenay and other districts, illimitable as it is known to be if properly developed, would turn into and benefit every line of industry and trade throughout the Dominion.

The necessity for free mining machinery is, therefore, a matter to be taken to heart not only by every man in British Columbia but by the people of Canada as a whole, and at this time, on the eve of a general election, when an opportunity is afforded to speak out with force, let there be no uncertain sound on this most important subject.

Another subject of deep importance to the Kootenay country is that of the Crow's Nest Pass Railway. Not only will it give us cheaper coke, but it will place us in more direct communication with eastern markets. It is an enterprise which the people of Kootenay have been looking forward to with longing eyes.

It has been all along a matter of conjecture whether the Canadian Pacific Railway Company were really in earnest about building the road, but the proposals they made to the Government show that they are not only willing to undertake the work but they are ready to commence it at once. Under these circumstances it was the duty of the Government, if friendly to us, to have shown no hesitation in aiding so desirable an enterprise, especially as the proposition made to them was a fair one.

Unfortunately, however, they did hesitate and for the time being the opportunity to obtain what we so much desire is lost. It is not to be supposed that the Canadian Pacific managers, who are men noted for their push, energy and decision, delayed till the last moment placing their plans before the Government.

It may be taken for granted that the proposition of the railway company has been before the Ottawa ministry for some time. Yet no move was made by the Government until a day or two before the close of the late session when the proposals were placed before Parliament at a time when it was impossible to properly consider them, and the Government itself withdrew them without dissension.

Parliament is composed of men from all parts of the Dominion who, whether on one side of the house or the other, are not likely to hastily consider a matter involving several millions of dollars. The Government knew this, and that time was necessary for the discussion of so important a question, yet they sat silent upon it during all the many weeks of the session, and only at the last moment brought down the proposals with a full knowledge that they had hesitated too long. The Remedial Bill was of more consequence to them and, in the muddle which they got themselves into over that measure, Kootenay and its interests were lost sight of, and the people will have to wait a little longer for the Crow's Nest Pass Railway.

It is a satisfaction, however, to know that the Canadian Pacific Company are prepared to build the road. Coming from them the declaration invests the project with a degree of substantiality it has not hitherto possessed. If it had not been for the neglect or hesitancy of the Government, the road would have been under construction ere this.

It is well that the people of Kootenay and the other mining districts of British Columbia should consider matters of this kind which show neglect on the part of the authorities. We could give other instances where the interests of this Province have been overlooked but the space at our command forbids mentioning them. Sufficient has been given, however, to indicate that a change of policy toward this country is needed. Now is the time to assert our rights. If we are to be treated in the future as we have been in the past, we may make up our minds that the progress of mining in British Columbia will be slow, and just at a time when mining investments are attracting capital from all parts of the world, we cannot afford to have our progress hampered. A change is necessary.

Now that the claim of British Columbia to cabinet representation in the Dominion Government has been acknowledged, it may be well to consider whether the mining interests of Canada are of sufficient importance to have a department created for them. If they are, one of our members from British Columbia might very appropriately fill the position of Minister of Mines.

We have a Minister of Trade and Commerce, one of Agriculture and another of Marine and Fisheries; why then should there not be one of Mines? Mining next to Agriculture is destined to be the most important industry of the Dominion. Its growth is likely to be both rapid and great if properly looked after. A Department of Mines would have plenty to occupy the attention of a Minister.

There are not a few, however, who think that we have too many cabinet ministers as it is—the number they say might well be decreased. The only way to meet this would be to double up some of the departments under one minister. The Department of Trade and Commerce has actually three ministers looking after it—it might well be confided to two. The Secretary of State would not have to over-work himself if he took a second department under his wing; and so, a re-adjustment might be arranged to make way for a Department of Mines with a minister in charge of it.

We do not suppose THE RECORD'S effort at cabinet making will disturb the slumbers of the powers that be, but the idea we have expressed is at least worthy of consideration by our mining people. Why not take it up

and ventilate it? It may bear fruit, and if it does it will be a good thing for the mining industries of this Province.

Victoria, not content with having only one Stock Exchange, has been contemplating the idea of having two. It will end by there being only one. Some people think that even one is unnecessary. We don't. We think if a Stock Exchange is properly conducted it will be a good thing and will act as a protection to investors.

The promoters of the first, or we may say the original Stock Exchange, organized in Victoria thought they could get along very well without the presence of brokers in their midst. They never made a greater mistake in their lives. It is surprising how un conquerable is the desire with some to have things all to themselves. This was the trouble, it appears, with a few of the originators of the first stock exchange.

The brokers, however, had their friends and immediately steps were taken to form a second exchange which gave promise of being so much of a success in point of numbers, at least, that there would have been nobody left to join the first exchange.

This brought the latter to time and the whole trouble will end, no doubt, as we have predicted, by the two forming into one. It is time that the stock exchange should get to work in earnest as curb-stone brokers are getting too numerous and are beginning to ply their trade in a manner that bodes ill for those who are foolish enough to believe in them and throw their money away in pure speculation.

We do not hear much of the Vancouver stock exchange. Are the promoters too busy lining their own nests to give attention to the organization of what will prove to be a public benefit. Curbstone brokers are at work in Vancouver as well as in Victoria.

Duly incorporated mining companies, whose shares are offered for sale in the market should be compelled to publish a statement of their condition once a month showing their earnings and expenses, etc., etc., in the same way as the Canadian Pacific Railway publish theirs. This would be a protection to the innocent investor against bogus concerns, and companies able to show a good record need not fear the ordeal. As it is now, it is difficult to know exactly, except in a few instances, what the mining companies are doing and investment in their shares means "going it blind."

The trend of English and foreign capital has set in this way. Several parties of capitalists are on the way and others have arrived in the Province. One party from England, we are told, have taken a house in Vancouver for six months, to make it their headquarters

They are going to see the country thoroughly and examine it well, and evidently, like wise men, intend to take sufficient time to do it satisfactorily.

We hear of several parties of English gentlemen being formed to come out during this summer *via* the Canadian Pacific Railway, and all this means that a great deal of money is likely to be invested in our mines during 1896. It is the duty of every man connected with mining in this Province, whenever opportunity occurs, to guard these capitalists from bogus investment.

Once we create a feeling of confidence in our mining investments, it will not be long before we will rival South Africa as a field for capital. We have the mineral treasure to do it, and all that is required at this stage is careful and conscientious treatment of the men who are the pioneer capitalists and whose experience, if it be good, will lead others to follow their example.

We are at a stage now when we may either spoil or make our future. All that is required to ensure success is to trample down dishonesty wherever and whenever it appears.

Preparations are being made for an active season of work in the Cariboo and other districts where hydraulic mining is carried on. Our next number (June) will be devoted to a description of those districts, and an interesting number it will be. In the meantime our present effort is directed to the Kootenay country, East and West, and a careful reading of these pages will show the wealth of mineral resources possessed by the whole district. We need not particularize.

The loss by fire which the rising town of Ainsworth recently experienced is much to be regretted. But, like Kaslo when it was burned down some time ago, Ainsworth will rise to the occasion and before midsummer the fire of to-day will hardly be remembered. There will, at least, be no trace of it, and the town will be able to boast of better buildings erected to replace those just destroyed.

We take the following from one of our exchanges published at Rossland:—"Corbin's road is a dandy. Last week a correspondent of considerable note, representing a leading daily journal on the sound, visited Spokane. There he heard so much about Rossland that he was induced to come up for the purpose of giving the camp a write-up. He applied for transportation and was refused. He said, while here, that he was rather glad that he had not been placed under obligations to the road by accepting transportation, for now he would feel at liberty to tell the truth about the road as he found it. It was rough and out of repairs," etc., etc., etc.—The inference to be drawn from the above

is that if the noted correspondent in question had been granted transportation he would have told a different story about Mr. Corbin's road. This does not say much for the honesty or reliability of the noted correspondent. But our contemporary at Rossland would have done better had he refrained from publishing such stuff. Is the efficiency of a railway line to be gauged by the willingness or unwillingness of the managers to grant transportation to newspaper men? If this were the case it would not speak well for the reputation of newspapers. We suppose the residents of Rossland like to have people visiting their town, whether they come in a railway train or on a mule's back. It is, therefore, bad policy to disparage either the railway train or the mule by unjust criticisms. From all we can learn from those who have travelled over it, Corbin's road is not as painted by our contemporary.

We are glad to note the friendly rivalry that exists between the various towns in Kootenay to secure smelters. It is the precursor of a strong agitation to have our ores treated at home instead of sending them out of the country. There cannot be too much of an agitation in favor of home smelters.

There is a good deal said about the freight rates charged by the Canadian Pacific Railway. They are doubtless high in some instances, but it may be taken for granted that the company are not actuated by any desire to do what is unfair. It is to their interest to meet the miners as far as possible in this respect, in order to encourage development. The more development the more traffic for the railway, and the managers, who are thorough business men, are no doubt alive to this fact. The proposed visit of Mr. Bosworth, the freight traffic manager of the company, and Mr. Kerr to this Province to look into the matter of rates for the purpose of adjusting the same is a proof that the railway company are desirous of thoroughly investigating the matter with the view of meeting the wishes of the business men as far as possible.

The Nelson *Miner* asks the pertinent question:—"Why could not the Dominion Government grant us a paltry \$2,000 for a country court judge?" Echo is speechless.

Rossland is stirring itself to become incorporated. A town that has sprung into existence within a few months and can boast of a population of 4,000 people is certainly justified in looking for incorporation. The necessary improvements, such as sidewalks, graded streets, sewers, etc., can be better and more systematically attended to with a properly qualified civic administration to manage affairs. The burden of taxation to provide these improvements will be more evenly divided amongst the residents and the town will go ahead faster. It is reasonable to suppose that Rossland will have 10,000 inhabit-

ants before the end of another year. It is time, therefore, that it should be incorporated.

The feverish rush to Alaska has had a set back. The first instalment of the "sadder and wiser," to the number of seventeen, returned to San Francisco on the steam schooner *Excelsior*, on the 18th of last month. In the course of a lengthy report the *Examiner* says:—Sitka and Juneau are both crowded with miners who have got that far in their journey homeward, but can get no further. There is no employment for them in either of the cities, and many of them are begging for food and clothes.' One of those who returned to San Francisco, a placer miner, said to the *Examiner* reporter:—"The whole thing made me disgusted with life. I had a few hundred dollars saved up when I was induced to take that trip. Now I haven't a cent. I had to borrow 25 cents from one of my companions to buy dinner with to-night, and, unless they help me out, I have nowhere to sleep." It is needless to make lengthy comments on the above—it speaks for itself. We have to chronicle no such experience for miners in the gold fields of British Columbia.

The success which has attended our efforts to establish this journal under trying difficulties is really wonderful. Letters reach us daily from all parts of Eastern Canada and from every state in the Union, as well as from England, from parties who say they have seen and read the RECORD. Very few of those parties received the paper direct from us, which goes to show that our numerous subscribers are passing it along to their friends at a distance. This is as it should be, and thus the good work goes on of making known the vast resources of this Province.

Fourth Lecture on Chemistry.

BY HERBERT CARMICHAEL, PUBLIC ANALYST AND ASSAYER.

BEFORE I proceed to show you some of our practical methods of analysis, as I promised to do in this lecture, I would like to draw your attention for a little while to the great chemical changes which are taking place in nature.

Water is the substance which more than any thing else gradually changes the aspect of our landscape. It acts in two ways: First, as a mechanical agent or as a solvent of various matters; second, as a medium by which carbonic acid and oxygen in a dissolved state are applied to the substances undergoing the change. The mechanical action is easily seen in the beds which our rivers and streams cut for themselves in our valleys and down the sides of our mountains. Its solvent powers are not perhaps at first sight so apparent, but water is in all probability the most universal solvent known.

One of its most remarkable uses as a vehicle from a commercial point of view is in its solution of the underground strata of salt in some of the brine springs of the

world. In Cheshire, England, an enormous quantity of salt is used annually in the production of soda and hydrochloric acid, and all this salt is pumped up from the salt strata below in the shape of brine which is then put into shallow pans where the water evaporates leaving the salt behind. That this is an economical way of conveying salt will be seen from the fact that although Germany has some enormous salt beds, one through which they have bored 3,940 ft. and have not struck the bottom yet, notwithstanding these immense solid deposits, England has been able to compete with her with her brine springs. I believe that one mining company in Germany abandoned mining rock salt in the usual way and turned a stream of water into the mine, which, when it had dissolved the salt, was pumped to the surface and thence carried a long distance to the crystallizing pans.

Water has also performed a curious office for the rocks of one of the islands of the Southern Pacific. The rocks are composed of crystallized carbonates of lime, perhaps originally coral, but by exposure to the air and by the percolation of the water the loose particles of calcareous matter have been washed away and the whole mass presents in consequence a very brilliant crystalline appearance.

As I mentioned before water holds in solution carbonic acid and that sometimes naturally to a great extent. You are all no doubt familiar with this gas but I hope to bring before you some features which may be novel. I have in this flask a few pieces of marble, which is virtually pure carbonate of lime or calcium carbonate, and when I pour on this some dilute hydrochloric acid you see by the brisk effervescence which takes place that some gas is being evolved. This is carbonic acid gas or carbon dioxide, and I can collect it by passing the delivery tube into this beaker. The gas is invisible but I can show its presence by putting a lighted taper into the beaker, when the light immediately goes out, while in a vessel containing air only, the light continues to burn as brightly as ever. The reaction which has taken place here and resulted in the production of carbon dioxide is represented by the following chemical formula:

$$\text{CaCO}_3 - 2\text{HCl} = \text{CaCl}_2 - \text{H}_2\text{O} - \text{CO}_2$$

That is to say the combination of calcium carbonate and hydrochloric acid results in the formation of calcium chloride, water and carbonic acid gas.

We have here two jars already filled with the gas as we see by thrusting the taper into them, the light being immediately extinguished, for carbon dioxide neither burns itself, like hydrogen, nor supports combustion of other substances, like oxygen. Carbon dioxide is a very heavy gas one and a half times as heavy as air, so that I can take this jar containing nothing but air, as the taper will burn in it quite readily, and by carefully inverting over it one of the jars of carbon dioxide pour all of the gas into the lower jar, so that the taper is now extinguished in it and burns freely in the other which now contains nothing but air. Let me now pour into this jar of CO₂ a little of this liquid which is a perfectly clear solution of slaked lime in water. On shaking this up with the carbonic acid gas we have a white precipitate formed in the water, which if allowed to settle and collected, we should find to be calcium carbonate or chalk, the same substance which we started with in the form of marble, to prepare our carbon dioxide.

This gas being so largely dissolved in water becomes peculiarly applicable to fulfil the duties of a chemical agent, since such bodies generally act most readily in solution. It has been found that felspar, which forms a great part of the hard rocks granite and porphyry, will withstand for some time almost without injury the action of cold hydrochloric acid which is a powerfully corrosive, fuming liquid, but water charged with carbonic acid gas

effects it rapidly, causing it to decompose, and breaks up the obdurate mass into particles. Thus granite, one of the most dense and enduring rocks entering into the construction of our planet, of all others perhaps the least generally affected by chemical re-agents, yields to the gentle influence of a chemical power so apparently feeble as that of carbonated water.

We shall immediately have to notice how great are the effects produced in nature by this means. The effect on granite is as follows: Granite being largely composed of felspar contains a considerable quantity of alkali in its composition for which the carbonated water has an affinity, that is it has a tendency to unite with and to dissolve the alkali. The consequence is that the alkali being dissolved the mass crumbles in pieces and in the course of time becomes quite a different substance. Such is the influence of this in decomposing granite that it is found in quarries in Dartmoor to be decomposed to a depth of 60 ft. or more.

It is a singular fact that we are indebted for the most of our porcelain to the results of the decomposition just described. Some of the finest white clay is the result of this decomposition of granite rock and it is largely used in the potteries; in fact all clays are products of granite rocks due to the decomposition of their felspar, and the fact that we get clays of different colors is because of other small admixtures.

Limestone is also easily dissolved by water charged with CO_2 . I can easily show you this by the following experiment: I have here a siphon of soda water prepared for me by Thorpe & Co., and composed of nothing but common water charged with carbonic acid gas. By adding a little of this to some lime water we get a marked precipitate which is calcium carbonate or simply chalk. On putting in more of the soda water, the carbonic acid begins to dissolve the chalk until, finally, when sufficient has been added, the precipitate is wholly dissolved, and the liquid is once more as clear as pure water. Lime is formed by heating limestone or CaCO_3 , which then loses a molecule of CO_2 , and a molecule of lime, CaO , is left. Now on the addition of CO_2 we simply added the same atoms which we took away, and formed again the same substance.

As this experiment shows you the solvent power of CO_2 on the small scale, you may perhaps be able to form some idea of the magnitude of this action in nature. The baths of San Phillippo in Tuscany are mentioned by Sir Charles Lyell as consisting of water containing so much lime in solution that in four months it yields a stratum a foot thick. In a pond into which they are conducted they have deposited a solid mass 30 feet thick in a period of twenty years. The mineral contents of the water are turned to profitable account by the establishment of a manufactory for medallions in *basso-relievo*. Moulds exposed to the falling waters are coated over in a short time with a beautifully white crust as hard as marble.

I explained to you when speaking of oxygen the oxidising effect it had on metals, generally forming rust. One instance will show a pronounced effect which it has in nature. This took place at a point on the west coast of Ireland. The cliffs on this coast contain a large quantity of alum and iron pyrites, and being incessantly exposed to the violent action of the Atlantic billows, large caverns have been formed by the unequal washing away of different strata. Some years since part of these cliffs assumed an appearance of very extraordinary character. The waves by continued dashing had worn and undermined the cliff, which giving away fell with tremendous violence into the sea. The consequence was that several great strata of pyrites were exposed to the chemical influence of the air and sea water. Rapid

oxidation took place eliminating such an intense heat as very shortly to set the whole cliff on fire. For days the great rocks continued to burn with much fierceness, torrents of steam and smoke rising up as the heavy billows of the Atlantic leaped upon the glowing masses, and at a distance presented all the appearance of some violent volcanic disturbance. After the fresh substance thus exposed had become oxidised, the steaming cliff gradually cooled down, and now the slow and silent work of mechanical and chemical change is being carried on without any external manifestation of its existence.

Trout Lake District.

[CONTRIBUTED]

TROUT LAKE CITY is situated on Trout Lake, a beautiful sheet of water twenty miles long by two and a half miles wide, fed on the upper end by the Lardeau River and emptying into the Kootenay Lakes by the Lardo River. On either side of the lake the mountains, covered with magnificent timber, slope gradually to the water's edge, while here and there mighty glaciers peep out to beautify and give a grandeur to the scene—in fact, in the late summer it is the ideal home of the artist. The lake abounds with silver salmon, lake trout, and char, from five to fifteen pounds in weight, and the hills are stocked with game, *viz*: caribou, bear, deer, wolf, wolverine, grouse, and birds of endless varieties. The prospector finds no trouble in supplying himself with fresh meat.

The town is situated on a flat delta, which is formed at the upper end of the lake and surrounded by magnificent timber. The town at present is small and affords one general store, owned by C. B. Hume & Co.; mining record office; the Queen's Hotel, A. Brahamson Bros., proprietors; and the Trout Lake Hotel, Bourke Bros., proprietors. The Lardeau River for some miles from the town is lined with cabins where the prospectors and others reside. The winter population does not at present number over 100, but in summer this number is greatly increased.

The Lardeau Creek is well known as a placer producer and has been extensively worked for gold, many good finds having been made at different points. It extends from the lake to the head of the south fork fifteen miles, and to the north fork nine miles, showing alluvial deposits its entire course. Landmarks, test pits, etc., go to show that this creek was prospected 25 or 30 years ago. This creek will at no distant date be one of the leading hydraulic propositions in West Kootenay. All work up to this time has been done by private enterprise with small capital, and results show that if taken in hand by capital splendid returns would be given.

The Silver Cup Mine on the south fork of Lardeau Creek, about eight miles from Trout Lake City, has been developed by a force of from ten to twenty-five men for some months past with very encouraging results. A few carloads of ore have been recently forwarded to the smelter, and more will follow. The property is owned by Messrs. Downs, Holten, and others, and is at present under bond to Dan. McGillivray. A shaft has been sunk to a depth of 90 feet and levels extended 150 feet in a good vein of silver-lead ore, averaging from twelve to thirty-six inches and assaying from 300 to 500 ozs. silver, fifteen per cent. copper, and \$18.00 in gold per

ton. With depth the vein widens and improves in quality. The owners and bondholder are enterprising and ere long a great deal more will be known of this claim and the surrounding district.

Adjoining the Silver Cup is the Free Coinage mine, the property of W. C. Yawkey, of Detroit, Mich. This is situated on the same lead and with development will no doubt give a good account of itself. Adjoining the Free Coinage is the Glacier and Gold King, the property of A. Brahamson Bros., assaying \$60.00 in gold and a fair quantity of silver to the ton. Adjoining this again is the Mineral Prince, the property of Harry Langrell, which gives same results as the above.

The Seven Mile Group, comprising the American, Empire, Homestake, Black Eagle, Sunset, and Hardshape, are situated on Seven Mile Creek, a tributary of the south Fork of the Lardeau, and about seven miles

from twelve to sixteen inches wide and assaying from 300 to 500 oz. in silver, fifteen per cent. copper, and a good percentage in bismuth. This is looked on as one of the best properties in this district, and the others mentioned being on the lead will no doubt when developed to the same extent show the same results. Adjoining this group on the Duncan slope are the Silver Tip, Defender, Novice, Smuggler, and Hecla, good mineral in place but undeveloped.

In the same dyke, six miles from the mouth of Ganier Creek, is the Black Prince Group, comprising the Black Prince, Alice Murphy, Bottom Dollar, Grey Copper, and Contact. On the Black Prince, the property of W. C. Yawkey, a tunnel has been extended 180 feet to tap the vein at this depth. This property will be worked extensively the coming summer. It assays from 300 to 500 oz. silver and fifteen per cent. copper per ton of ore.



NELSON, B. C.

from Trout Lake. As these are all recent locations they are as yet undeveloped, but the surface showing is very good.

The Galena Prince Group comprises three claims, the Molly Mack, Leadville, and Denver. This group is remarkable for its outcroppings, showing extensive ore deposits assaying, from surface, 40 ozs. silver and 85 per cent. lead. This group is situated about three miles up Ganier Creek from Lardeau Creek. Two miles above this group is the Campbell & Johnston group, comprising the famous Badshot Claim, the Ferry Lode, Lone Pine, and Butte. This group is situated in the lime dyke which passes across the whole district. The Badshot has been developed to a depth of 100 feet in a vein

The adjoining claims are undeveloped, but have good ore in place. Beyond the above on Duncan Slope are the Edna Alice and Duke of Wellington Groups, showing quantities of ore in the face of the mountain with average lead of twelve to fifteen feet wide and assaying in the hundreds for silver per ton.

On the north fork of Lardeau Creek is the Blackburn Group, three claims showing good mineral in place but undeveloped. The Silver Tip Group also comprises three claims, the Silver Tip, White Owl, and Plato Prince. On this group a vein of ore has been opened, two feet six inches wide. It is solid shipping ore, assaying high, and the mine is owned by Messrs. Brewster, Temple, and Bourne, of Revelstoke. On the Jenny

Lind and the Sunshine a large body of good ore has been opened on. The Horne Ledge comprises thirteen claims and is a monster vein. It lacks development, but when it receives this good results may be looked for.

The Goal Group, situated between the north and south forks of the Lardeau, comprises eight claims showing large bodies of mineral assaying \$40.00 in gold, 60 oz. in silver, and 50 per cent. lead. These claims are very conveniently located. Development work on a small scale has been done on a few claims exposing a vein six feet wide. This group should show up well during the coming summer.

The Knowles group, situated at the junction of the north and south forks of Lardeau Creek and consisting of five claims, has a very good showing. Being very recent locations they remain as yet undeveloped. The Great Northern Group is one of the early finds in this district, having been located in 1891 by Messrs. Downs, Holten, Walker, and others. The situation is very convenient, being about six miles from Trout Lake, and a good trail of easy grade for rawhiding has been made.

The True Fissure, under bond to Mr. F. Nowell, of Juneau, Alaska, is one of the best showings in the country and with development will undoubtedly become

propositions, surface croppings assaying \$12 per ton. The Abbott Group, situated near the head of Holly Creek about 23 miles from Trout Lake City, comprises five properties. On the summit a large vein outcrops which assays well in the hundreds. For the convenience of working these claims a tunnel is being extended to intersect the vein in depth. This work is now being pushed on vigorously with a full force of men and it is expected the vein will soon be met with.

Adjoining the Abbott Claims on the Duncan Slope is the Wagner Group consisting of four claims. Two of these, the Duncan and the Lardeau, have large outcrops of ore which assays from 300 to 500 oz. of silver per ton. The property is owned by Messrs. Wagner, Kennedy, and others and is at present under bond to a Spokane company, and it is expected it will be thoroughly opened up during the coming summer.

Asbestos was discovered thirteen miles from Trout Lake City during last summer by A. Abrahamson, and he intends developing it as early as possible. This is a new feature and as the surface ranks No. 1 in grade no doubt it will be successful.

With the number of mines at present at work and others which will be working during the early spring



ROSSLAND, B. C.—IN 1895.

one of the leading mines in the district. The ore outcrops on surface from 30 to 60 feet wide. The Great Northern has been opened by a crosscut from the side hill, striking within easy distance a splendid vein of ore varying in size from two feet to four and a half feet in width and with an assay value of \$140 per ton. There are from 100 to 200 tons of ore on the dump. The Snowshoe was opened on last summer showing an improving vein with depth. The Phillipsburg, Silver Queen, Thistle, and Broadview, on the same lead remain as yet undeveloped.

The American, situated eighteen miles from Trout Lake City, is easily reached by going fourteen miles on the lake and four miles up the mountain. From the lake to the claim a trail has been cut and there is ore on the dump ready for shipment at any time. The vein opened on is rich in lead and silver and has a width of twelve to fourteen inches of solid shipping ore with every indication of improvement with depth. This property is owned by Messrs. A. Brahamson Bros., Taylor, and Kinman. The average assays of ore places it at \$100 per ton.

The Atkinson and the Bear are recent locations situated at the mouth of Holly Creek, and are free gold

and summer we expect to see a concentrator, if not two, being built here at no very distant date. With ore of such a high grade as that of the Silver Cup, Great Northern, American, Badshot, and other working properties mentioned in this article, it is needless to state the prospects of the camp are good. What the district requires is a better knowledge of it by the outside world and more capital to bring it to the front. There is no hesitation in saying that if we get the capital Trout Lake District will become one of the leading mining centres in West Kootenay.

Trout Lake is reached from Revelstoke by rail to Arrow Head, 28 miles; steamer to Thomson's Landing, ten miles; and thence by a good wagon road connecting with Trout Lake, twelve miles distant. A charter has been granted for the building of a railroad from the Arrow Lakes to Kootenay Lakes by way of Trout Lake, which will come within easy reach of all the mines and reduce shipping charges to the lowest possible price.

The alteration which was recently made in the boundaries of the Duncan Slope has greatly inconvenienced prospectors. The advantages will be more apparent during the coming summer, as that point is much talked of at present and will be thoroughly prospected shortly.

The Springer Creek District.

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

THE Springer Creek District in West Kootenay concerning which so much has been heard during the last few months, and of which we are likely to hear a great deal more in the near future, comprises a tract of country at the foot of Slocan Lake the exact limits of which have never been accurately defined, but for purposes of description it may conveniently be considered to be bounded on the north by the watershed or divide which separates Ten Mile from Springer Creek, on the south by the main waters of Lemon Creek, on the west by portions of Slocan River and Lake, and on the east by the watershed separating it from the Ainsworth district; so that it covers a roughly estimated area of about 150 square miles, having a length from east to west of some 15 miles and a breadth from north to south of 10 miles.

The history of Springer Creek is, practically speaking, its history of the last year, as until quite recently but little legitimate prospecting was attempted.

The first evidence we have of its being seriously regarded as a mineralized region was in June, 1893, when amongst others William Springer, whose name the principal creek now bears, went prospecting in the neighborhood for placer deposits, and coming across a promising quartz ledge, staked a claim which he called the Dayton, the creek adjoining, which is tributary to Springer being now known as Dayton Creek. The claim is thus described in the *Nelson Tribune* of Feb. 10th, 1894: "It carries dry ore and is located in the granite belt, three miles east of and near the foot of Slocan Lake, 20 miles from New Denver. The vein is 2½ feet wide, carrying 10 inches of pay ore, averaging 215 ounces silver and \$21 gold per ton. The highest assay was 920 ounces silver and \$40 gold. Mr. Springer has sold the claim to Mr. Hanover the Salt Lake smelter man."

Nothing definite however, appears to have been done, and the fortunes of the few prospectors who found their way into Springer Creek were unrecorded until the fall of ninety-four when the now famous Arlington claim was staked by C. E. Fielding and R. Cooper. The appearance of this at first indicated nothing very startling, but when in April of last year the present magnificent showing was disclosed as the result of two assessments, a tremendous excitement was caused at once, and prospectors from all parts flocked in.

During the summer and fall nearly 300 claims were staked in that district alone, and the receipts at the recording office here in New Denver were unprecedented.

Prospecting continued and reports of marvellous finds kept coming in until the snow literally drove the prospectors from the hills. These reports were backed up in many instances by substantial assays, but as is only to be expected from the lateness of the season at which most of them were discovered, few assessments have yet been done, and it remains to be seen whether the ledges are permanent; but it must be confessed that all of those on which any development has been attempted, have more than upheld the most sanguine opinions which were formed of them, and the Springer Creek District seems destined at no distant date to supply that very necessary article to the efficient and economic working of home smelters, a profitable dry ore.

As soon as ever the weather will permit numbers of prospectors will be in evidence to do the assessment

work on claims which they staked last fall, and I have not the slightest doubt from what I have already seen, that many splendid propositions will be brought to light.

The formation of the country is generally conceded to be granite and it was largely on this account that the district was for so long disregarded, as it appears that many of the old prospectors had imaginary reasons for supposing it to be unproductive. A similar prejudice appears to exist regarding some of the mountains on the western shore of the lake and as the reasons in either case were not very obvious, it may be that the one will prove as great a fallacy as the other; there certainly appears to be no reason why there should not be many good ledges on that side of the lake yet awaiting discovery. However, regarding the actual formation of Springer Creek, I don't think it is to be disposed of quite so easily as many people imagine. So far no reliable geological explorations have been attempted, or at least if it has the results have not been made public, and no printed map whatever of the district exists, so that it is impossible to speak authoritatively respecting the nature or extent of the various formations. There are many reasons however for believing that the geology of that section is considerably more complicated than is generally supposed.

True granite undoubtedly exists there in large quantities, but dykes of porphyry, serpentine and other eruptive rocks, cut the formation in many places; limestone, slates and schists are also found in the immediate vicinity and it would be presumptuous for me to attempt a more detailed description without first making a thorough and comprehensive examination.

Another feature of the country which is difficult of explanation with the limited information at my disposal, is the exact character and mode of formation of the veins. They vary in width from a few inches to several feet and dip at all angles, some appearing almost horizontally, others again being nearly vertical. Speaking generally, the true fissures trend east and west, while the smaller ledges or stringers point north-east and south-west or direct north and south. The district is usually regarded as forming part of a large dry ore belt, but recent discoveries tend to show that it contains paying wet ore propositions as well.

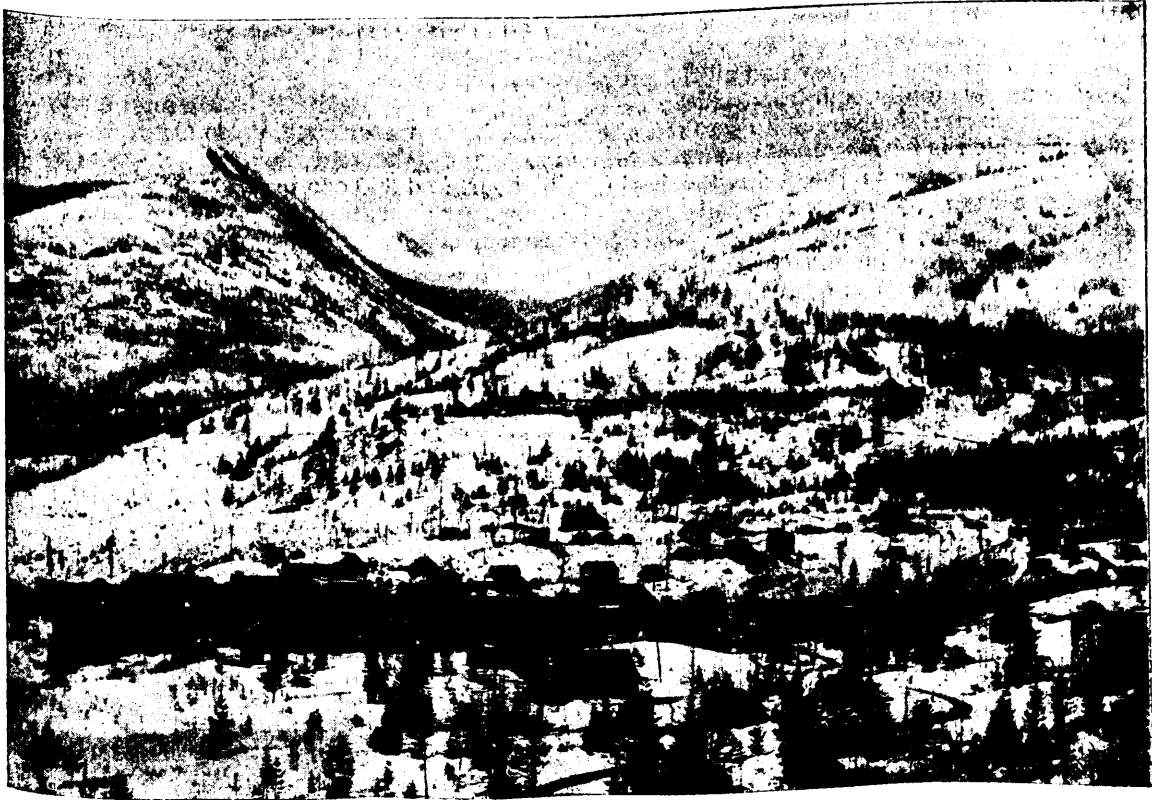
The most noticeable mineral is of course argentite or sulphide of silver. This contains when pure 87.1 per cent. of silver and is present in varying quantities in nearly all the veins. It is probably the most commonly occurring ore of silver and is found in large quantities in all the great silver-producing countries of the world, the United States, Mexico, Germany, Chili, Peru, etc., but it does not appear to exist in paying quantities in Canada outside of this district, except in one or two isolated cases. The ores all carry more or less gold in conjunction with the silver and not infrequently you may find visible evidence of both native gold and silver in the same specimen, which I believe is somewhat of an anomaly and would serve to indicate the extreme richness of the ore.

Contrary to general belief the dry ore region, so far as has been observed, is not separated with any degree of distinctness from the galena producing portions of the district, and it is no uncommon thing to find ledges carrying both wet and dry ores. To illustrate this we will instance the case of the Arlington. This claim, as before mentioned, was discovered by C. E. Fielding and R. Cooper. It is situated some seven miles up Springer Creek and the present showing, which is disclosed on the side of a small creek bank, is probably the best in the district. It presents to view about seven feet of enormously rich ore which, however, is somewhat peculiar of arrangement. The larger part of the vein consists of a

decomposed, serpentinous mineral, containing a deal of talc, which differs little in composition from the original serpentine. Through the whole of this portion native silver is present in fine state of dissemination, and in addition scales or plates of the same metal are to be observed wherever the ore is broken. These laminae or plates of silver are of varying sizes but specimens from a half to a square inch in area are by no means uncommon. The rest of the vein consists of rich argentiferous galena in which no native silver is apparent, and this is present in three streaks, two, four and fifteen inches wide respectively. The whole appears to dip almost vertically into the formation as after tracing it across the creek it is entirely lost. Mr. J. A. Finch, a prominent mining man from Idaho, who has spent a considerable sum in mining operations in this locality and to whom it was recently bonded for \$50,000.00, intends to develop it vigorously at once by sinking on the lode, and should it prove to lose nothing as depth is gained, it will cer-

which assayed as high as 1500 ounces silver and \$150 gold per ton. It appears to be essentially a poor man's proposition, as without any capital they have succeeded in taking out many tons of ore and shipping some to the smelter. Unfortunately there was but a poor trail to the mine and it cost them 30 to 40 dollars per ton to pack the ore out on mules to Slocan City, besides the usual freight and treatment charges. The government however is expected to make an appropriation shortly for the purpose of providing better trails, when the lowering of transportation rates will be much facilitated and a great deal of ore now lying on the dumps will be immediately shipped. The building of the railway through New Denver to Slocan Crossing on the Nelson branch, which it is announced will be begun at once and finished during the year, will help largely in this direction, as it is expected to follow the lake shore and pass within a very few miles of the producing claims.

The only other shipment up to the present was one of



ROSSLAND, B. C.—IN 1896.

tainly rank among the most valuable mines in the Province, and give a stimulus to mining in that district which will place it beyond all doubt on a permanent basis. Several intending purchasers were in to see this property last fall, among them being some gentlemen from the coast, but as usual the best claims fall to the lot of enterprising American investors, and it was therefore no surprise to anybody when it was announced that it had been bonded to Mr. Finch who, we all hope and feel sure, will be well repaid for his confidence in the camp.

So far but two claims have been enabled to ship ore from this district and of these the Howard Fraction, situated some seven miles from the lake on the north fork of Lemon Creek, contributed seven tons, which gave returns of 163 ounces silver and \$17 gold per ton. This claim is owned and worked by a small company of prospectors from the Black Hills, Dakota, who discovered it last fall. There are several small but rich leads of dry ore on the property and specimens have been obtained

five tons from a claim called the Exchange, at the head of Dayton Creek, about four miles from the lake, the exact returns from which I have not before me, but I understand that it averaged about the same as the Howard Fraction shipment. The owners, Messrs. Boies & Isaacson, erected buildings in the fall and have been working on the claim all winter. The ledge is fully four feet wide, and dips at an angle of about 40 degrees, it consists of quartz, which is sometimes very pyritic, carrying native silver and argentite. As is frequently the case in ores of this character, especially when from near the surface, it is very variable in quality and in trying to avoid shipping poor ore at the present high transportation rates, they probably left as good or better ore on the dump than they shipped, it being very hard to judge the value of the ore without very fine hand dressing.

No account of this district would be complete without reference to the claim known as the Two Friends. This was located last fall by Messrs. Murphy and Schon-

berg, who, in the last two months, have driven a 50 foot tunnel showing ore all the way, the claim is some eight and a half miles from the lake, on a south fork of Springer Creek. The ledge consists of about six inches of very rich galena, carrying some tetrahedrite or gray copper, from which assays ranging from 275 to 817 ounces of silver have been obtained. Next to this is found two inches of carbonates, the whole being enclosed on either side by several inches of dry ore. About 40 tons of shipping ore have already been taken out and placed on the dump by these two men in driving the tunnel, and it bids fair to be one of the best properties in the camp.

The Tamarac, the Meteor and the Nancy Hanks are all promising claims, and many other marvellous strikes have been reported outside of the strict limits of this article, among which we might mention the Ocean, Crusader, and Alpine groups, the latter of which is a wonderfully rich gold proposition, specimens of apparently barren quartz having given assays as high as 26½ ounces in gold; but these will be thoroughly prospected and examined before long and then we may expect to hear of some wonderful developments.

Meanwhile it is satisfactory to know that all the prospects are showing up splendidly, and in no single case has additional work on a claim served to weaken the general confidence which is felt.

A townsite has been located in the Arlington basin, and enquiries after Slovan city lots are of daily occurrence. The season is bound to be one of great activity and signs of an early influx of prospectors and capitalists is apparent even now.

We are very anxious that the coast people should benefit by these discoveries as well as ourselves, and to that end we invite them to come and investigate for themselves before the best properties are all absorbed by capitalists from over the line. Many, I know, are chary of investing because they have been so often bitten, but if they would only take ordinary precautions, such as they use in other business transactions, and consult a good, reliable mining engineer before investing, there would be fewer cases in which they would lose their money, and greater satisfaction all round.

I give this warning, because there are not wanting evidences that this may be a prosperous mining camp before long, and if they don't look out it will be Trail Creek over again and the coast people will find that they are left.

Trail Creek.

THE Board of Trade of Trail has issued a pamphlet setting forth the wealth of resources in that district, from which we reproduce the following:—

The mines of Trail Creek, in the Trail Creek mining district, British Columbia, will probably be the mining sensation of the world for 1896-7. The South African mining boom is on the wane, and mining on the "Rand" is getting down to a business basis. Speculators are still wild over Cripple Creek, but that boom has assumed proportions so ridiculously large as to be patent to all who gaze thereon. Alaska's mines cannot be boomed as yet, there being so much expense and danger and difficulty in getting to them, and the mining speculator and "boomer" will next be after Trail Creek—where his presence is in no way desired.

Through all the South African and Cripple Creek sen-

sations, the Trail Creek mines have been working right along at the same old stand, their productiveness being only retarded by lack of capital. Here, on the Canadian side of the International boundary line, only a few miles from the line, with easy and cheap ways of ingress and egress, the mines of Trail Creek have silently held out their offers of fortunes to those who would come and claim them—and the tide of immigration, the so-called "rush," has but just commenced.

While the fabulous richness of the mines of Africa is created by ore that yields \$11.62 in gold to the ton, the Le Roi, War Eagle, Josie, O. K., and other mines of Trail Creek have, without fuss or feathers, been increasing their shipments of ore that averages over \$37 per ton in gold, \$4 in copper and \$2 in silver.

The *Cripple Creek Journal*, a newspaper published in Cripple Creek, in a recent issue asserted that the two greatest camps on earth were Rossland, in the Trail Creek District, seven miles from Trail, and Cripple Creek. For a local newspaper to admit of its town's equal, stamps that equal as its superior.

The entire value of the ore shipped from the Trail Creek Mines during the year 1894 was \$125,000. This came from three mines—the Le Roi, War Eagle and Josie, all situated in Red Mountain, near Rossland. The shipments for 1895, up to October 1st, aggregated 17,027 tons, the value being \$636,000 in gold, \$33,000 in silver, and \$66,000 in copper; average value in gold, \$37.35 per ton; in silver about \$2, in copper about \$4 per ton, making the total average value about \$43.33 per ton. The aggregate tonnage for the year was over 23,000 tons, of the value of more than \$1,000,000. Had there been better facilities for shipping and necessary capital for mining, the output would have been unlimited, for the supply of ore is practically inexhaustible.

During the year 1895, over 2,000 mineral locations were recorded in the district, and during 1896 many of them will become producing mines. The War Eagle paid about \$200,000 in dividends to its stockholders, and the LeRoi is averaging about \$25,000 in dividends per month.

It is not unreasonable to expect that the mines of Trail Creek will produce 150,000 tons of ore this year, of a gross value of \$6,000,000. The Trail Creek Tramway, a narrow-gauge railroad to connect the mines at Rossland with the smelter at Trail, is progressing rapidly, and trains will be running between the smelter and the mines about May 1st. A right of way has been granted the Columbia and Red Mountain Railroad, which will run from some point in Stevens county, Washington, to Rossland. A bill is before the Provincial Legislature to allow the Trail Creek Tramway to become a part of the Columbia & Western Railway, that shall open up the mines through 150 miles of rich country. The Canadian Pacific is extending its road to Trail, and has surveyed an addition to the town of Trail—and, to make a long story short, Trail Creek is now assured of sufficient and satisfactory shipping facilities, and invites the attention of capitalists who have money with which to make more money.

The ores of Trail Creek have, to date, been smelted in Tacoma and Everett, Washington; in Helena and Great Falls, Montana; but the greater portion of the output of these mines will hereafter be smelted in the district in which they are mined. The British Columbia Smelting and Refining Company's smelter at Trail "blew in" three stacks in the week of March 12-19, 1896, and its fourth and fifth stacks will "blow in" before May 1st, giving that smelter a capacity of 250 tons per day. This smelter is the most complete and modern in equipment of all smelters in North America, and has a capacity equal to that of any of the great smelters of

Butte and Helena, while so modeled that its capacity can be made greater than that of any smelter in the West, with very little expense. The smelter and tramway have been built at a cost of over \$500,000, and there is plenty of capital back of both enterprises.

The fame of the town of Trail has spread only in the past few months, for the entire town, smelter and all, has been built in less than six months. The upbuilding of Trail is by no means finished, although nearly \$1,000,000 has so far been expended in that direction. At the present writing, the town of Trail possesses ten good hotels, eight saloons, four restaurants, eight general stores, one big hardware store, two meat markets, four barber shops, two news and stationery stands, one bank, one jewelry store, one drug store, one tailor shop, two sawmills, two blacksmith shops, a big brewery, bottling works, one billiard hall, two real estate offices, two livery stables, several dray lines, newspapers, churches, schools, postoffice, telegraph and telephone offices, one depot and a second soon to be constructed, one bakery, while ground is being prepared and buildings erected for one three-story and one four-story hotel, a plant for the British Columbia Iron Works, and another for the machine works, several stores and other enterprises. The British Columbia Smelting & Refining Company is putting in electric light works for the town, the lights to be turned on soon, and is preparing to furnish Trail with a system of water-works. A ferry has been built to connect the two shores of the Columbia at this point, and a wagon road is now completed from the Spokane Falls & Northern railway at Sayward, six miles distant

vestors find here a wide field and a profitable one. Trail, itself, is the smelting centre of British Columbia, and will always remain so, having all the necessary adjuncts that other towns in the Province lack.

Trail will be the distributing point for the Trail Creek district, as well as for the other mining districts in this section. Here wholesale houses are going up to supply the retail trade of surrounding towns and camps. As is natural in a town that is but six months old, there are branches of business not represented here, and other branches that offer good openings for competitive firms. Men with means who will help in the upbuilding of Trail Creek are assured that there is a splendid opening in Trail for them, in whatever line they may represent.

Big Bend.

[BY R. W. NORTHEY, EDITOR OF THE ROSSLAND PROSPECTOR.]

THERE are two famous places in this great Northwest bearing the name of Big Bend. One, in the state of Washington, is famous for its wheat and agricultural products. The other, in West Kootenay, B. C., is famous for its gold product—pure gold from deep placers and benches. This northern Big Bend is worth writing about. It takes its name from the conformation of the



STREET SCENE IN ROSSLAND.

from Trail, to the ferry in question. The Canadian Pacific proposes to build to Trail this year, and make Trail its terminus in this district. Trail's population was on March 1st, 1896, about 1,500. R. W. NORTHEY, Editor of the Board of Trade of Trail unhesitatingly declares that the Trail Creek country is, in their belief, fabulously rich in mineral wealth—and all that is needed is money to develop our mineral resources. Mining in-

Columbia River, which flows north from Donald, a station on the C. P. R., for about a hundred miles, and then making a rather sharp turn through a pass in the Selkirk Range, flows directly south, till at Revelstoke it again meets the railway, which has crossed the Selkirks by way of Roger's Pass and the Illecillewaet canyon, thus forming the base of a huge triangle, of which the

northernmost turn of the river is the apex. All the territory lying north of the C. P. R., between the river flowing north and the river flowing south is filled with snow-capped mountains, numerous creeks, and one or two larger streams flowing into the Columbia on both the eastern and western slopes, with here and there a pleasant valley and fertile beaver meadows. It is on these western tributaries, as well as the Columbia itself, that the rich placer ground has been worked at intervals since 1865.

Thirty years ago Big Bend was a busy place, a population, variously estimated at from eight to ten thousand miners and prospectors, being busily engaged in extracting the precious metal from its ancient bed. And many of them were successful, as it is stated that between four and five million dollars worth of gold was taken out by placer miners in 1865 and 1866. Only placer claims were worked. No one thought of looking for gold in the benches or in quartz. Besides the methods of hydraulicing in those days were crude and unsatisfactory. Placer claims that did not pan out more than \$10 a day per man were unprofitable. Provisions were dear, and the scenes enacted in the old Cariboo days—so often published—were applicable to Big Bend.

A steamer, the '49, was fitted out at the Little Dalles, with a cargo of supplies and some passengers, made what must then have been a most venturesome voyage up the River as far as Laporte, where further progress was barred by Priest's Rapids and the terrible Death Rapids, 50 miles north of Revelstoke—as far north as ever steamer went on the Columbia. The '49 afterwards came to grief on a sunken rock in what is now known as Steamboat Rapids, just below Downie Creek.

The gold-seekers in the Bend, too impatient and perhaps too impecunious (with provisions at famine prices) to try the deep diggings, began to hear rumors of rich gold finds in other parts of the world, chiefly in Australia, and then there was an exodus, only a small percentage of the population being left to continue scratching the surface gravel here and there, mostly on McCulloch and French Creeks, tributaries of Goldstream, which empties into the Columbia about 54 miles north of Revelstoke.

It would occupy a great deal of space to enumerate the various placer claims which have been staked during the past ten years, active operations having been recommenced in the Bend in 1886. The Consolation gold mine, on French Creek, has been a large producer of placer gold for the past five years, averaging, some seasons, \$100 a day per man, but a great deal of this profitable work has been neutralized by expenses in repairing damages from high water. The gold from this mine is as pure as it is possible for the crude metal to be, and fetches \$18.50 per ounce at the San Francisco mint. The average season's output, with four or five men at work, has been about \$20,000 in round numbers. The output for the last four months amounted to \$4,000. Some big nuggets have been found in this mine. John Sweeney, who came down to Revelstoke on a holiday last month, brought with him a fine showing of Consolation gold, the largest nugget being worth \$50, another \$43, while \$20 and \$10 nuggets were quite plentiful. The mine at present is looking better than ever before in its history, and the owners expect large returns this summer, as the gold is getting coarser all the time.

There are other placer claims in the Bend with a similar history; the Gold Hill, lately sold by Vandale & Beaton for a big sum, being one of the best producers of the past two or three years. Placer mining is the poor man's mining. There is no expensive machinery required, no hauling or smelting of ore. The miner can carry his output in his strong chamois leather bag,

and the only expense entailed after he has secured his ore is the sending of it to the mint. Numbers of men are engaged in this industry in Big Bend who have no capital but their labor, and most of them expect to strike it rich when they reach bedrock.

It goes without saying that where the shallow ground is rich in fine gold and small nuggets the heavier nuggets will be found on bed rock, *i. e.*: the rocky bottom of the bed of the ancient stream which brought the gold from its original resting place—trundled the big nuggets along in its swift waters till they caught fast in some crevice, to remain there till in the course of millions of years the whole channel silted up with sand gravel, and lighter gold, and eventually the stream sought another channel and formed another bed, to continue the same process of eroding the gold from the mother rock and deporting it safely in some nook below.

That this process is still going on is evidenced by the fact that sometimes large nuggets are seen on the rocky bed of some swift flowing stream, so swift flowing that it is seldom an effort to land such nuggets with a long-handled shovel is successful, the current washing it off the shovel before it can be brought above the surface of the water.

But I am digressing. Great attention is being paid to hydraulic mining in Big Bend just now, and there are several outfits engaged in washing the benches, not only on the smaller creeks, but also on Gold Stream and the Columbia itself. The Columbia River Hydraulic Company who are operating on the Columbia just above Smith Creek, are about to go in largely for this kind of mining, having faith in their location through the report of Prof. Nason, an American expert, who spent the whole of last summer prospecting the ground, and who is about to return to superintend the erection of an up-to-date plant, the first carload of machinery having arrived at Revelstoke from Chicago, and will be taken up as soon as the water is high enough for Tom Horne's large boat to navigate the upper river.

Besides placer and hydraulic mines, rich quartz has been discovered in the Bend, and several claims located. For several years it has been known that there was considerable gold quartz in the mountains near the source of the larger creeks, but the expense of getting up milling machinery has been too great to permit of its being worked by poor prospectors, and even capitalists have been dismayed at the cost of packing machinery 75 miles on horseback. But recently, Gus Lund, who located two quartz claims—the Jenny Lind and Ole Bull—some four or five years ago, has been fortunate enough to dispose of one of them, at a good figure, I believe, and some samples of quartz from this claim (the Ole Bull) were exhibited in Spokane last fall by one of the purchasers, and were said to be worth over \$600 per ton. Mr. Lund had already taken up a small mill, and proved that it would pay to mine gold quartz, even in Big Bend.

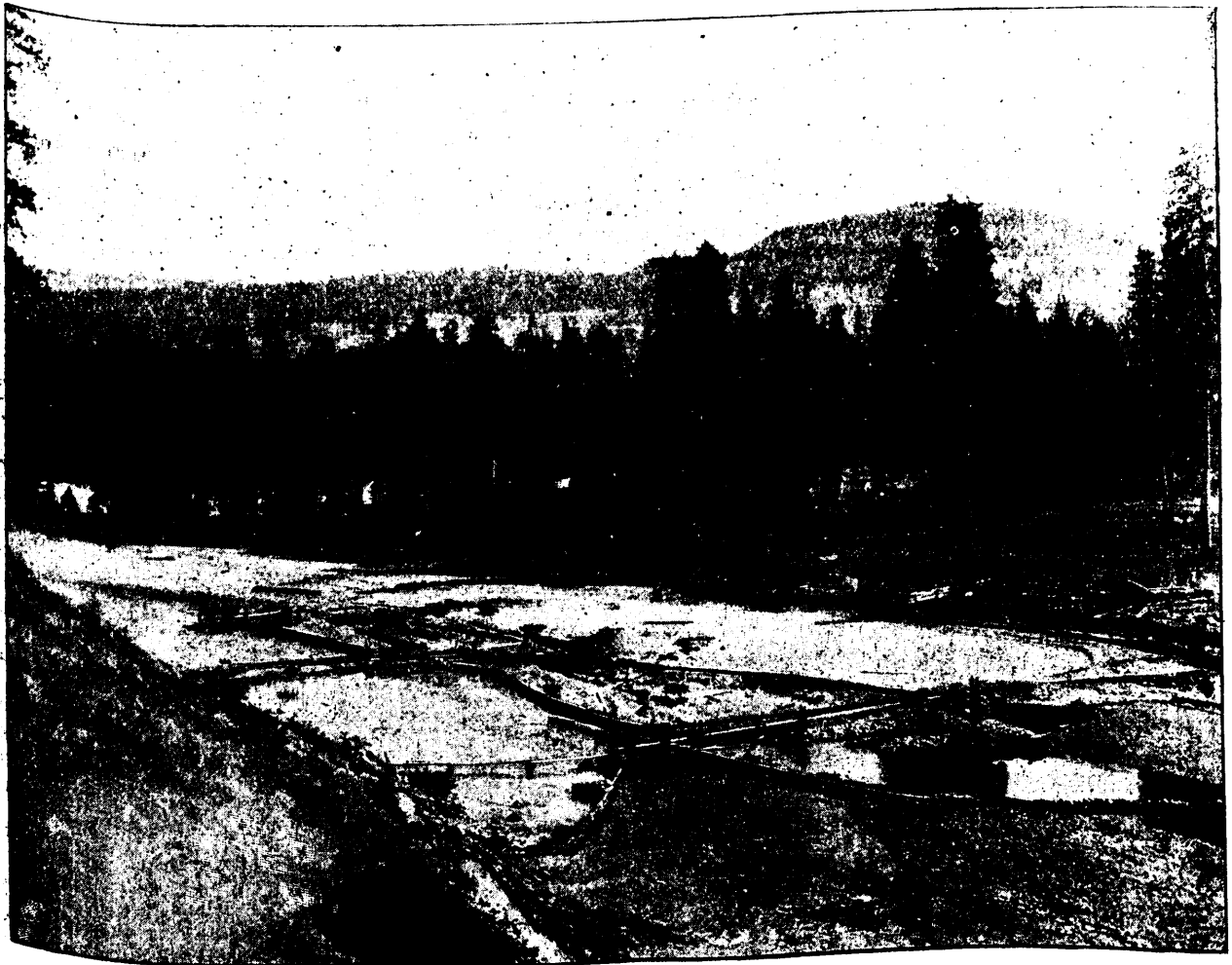
There can be little doubt that the mother lode, or vein, or ledge, or whatever you please to call it, from whence the gold was eroded in ages past (with the process probably still going on) is somewhere in that district, and while it may be in a river and scattered condition, it will, when found, be the richest piece of ground brought to light on this continent. The only thing that prevents Big Bend from ranking with Cariboo, as a placer and hydraulic camp is the costliness of getting up anything heavy, such as machinery. Cariboo has a wagon road, while Big Bend has only a pack trail, and for two or three months in the year, the river, as far as Laporte. But some means will yet be found to overcome this impediment to the district's prosperity. A light railway or tramway from Revelstoke would be the

best means for opening up Big Bend, but probably a steamboat specially built to run to Laporte and a tramway from there would be the cheaper plan.

Not only is the Bend rich in gold, but large deposits of galena, copper, iron, and some bismuth have been found; the galena being similar in appearance to the products of the Slocan and Lardeau, with perhaps a smaller percentage of lead. Ledges of mineral have also been discovered, bearing the iron cap so common in the Trail Creek District, which, as is well known among

on hope for the last ten years, they are still confident that their mines up river will yet cut some figure in the world's gold production.

I have not been able to crowd into this article what I started out to do—particularize the various mines, companies, and syndicates operating in Big Bend, but I hope to find time at no distant date, to supply the defects I mention, as, by the courtesy of Mr. J. D. Graham, Government Agent at Revelstoke, I am promised access to the old records dating from 1865.



PLACER MINING IN BRITISH COLUMBIA.

mining men, generally denotes the presence of copper and usually gold in the hard pyrites.

When the mines in the southern portion of West Kootenay have all passed from the prospector to the capitalist, Big Bend will have its day. The mineral hunters will push further north, where the mountains are equally as rich as those lying between the 49th and 51st parallels, and it will not take so long to open up that region as it has the Slocan, Lardeau and Trail Creek Districts, because within the next decade there will be unlimited capital in Kootenay; capital that will be on the lookout for good things close at hand. It will not need to be coaxed from the far East—it will be on the spot. I do not mean to say that Big Bend will have to wait ten years for the commencement of its prosperity, because the stampede of prospectors to that gold country is already noticeable and capital is beginning to look with favor on its vast possibilities.

Those who live nearest and see most of its products—the people of Revelstoke—have unlimited faith in Big Bend and its future, and though they have been living

Cariboo Creek.

[FROM OUR CORRESPONDENT.]

DEVELOPMENT work is being pushed by Devereux, Rodd & Bourne on the Promistura. The tunnel has almost a solid mineral face and is said to assay \$70 in gold. According to surface indications, they should strike very rich mineral in from 10 to 15 feet.

Messrs. Maxwell, Ahlgren & McIntyre are packing provisions and will soon begin assessment work on their Snow Creek claims, the Grey Wolf and Union Jack, which assay 61 and 54 ounces of silver respectively.

Jameson is also on the ground ready to begin work on his numerous high-grade silver properties. Messrs. Tasson & Burton will begin development at once on the Black Bess, a fabulously rich gold, silver and copper property at the head of Goat Creek.

Judging from the talk we hear on the outside and our knowledge of the richness of the Cariboo Creek country, we expect to see very lively times there in the very near future. The character of the country and the mineral is identical with that of the Trail Creek country, and this rich mineral belt is known to extend right through from foot of Lower Arrow Lake to foot of Slocan Lake, a distance of at least 35 miles. This ground has been prospected but very little, only run over from the Narrows on the Columbia, part way to the summit at the heads of Goat, Snow and Canyon Creeks, so that even half the story on the Columbia side is not yet told. Here is a grand opportunity for prospectors, in both quartz and placer mining, and for capital to get in on the ground floor.

Most of the creeks prospect well in placer, especially Cariboo and Snow Creeks. On Cariboo Creek there was some work done in '94 but it was by poor men who had not the means to get to bed rock. A few who had the nuggets almost in sight were washed out by a freshet and not having means to open up again and winter coming on gave it up to try again at the earliest opportunity, which it is hoped will be the present season.

Prospectors can outfit at Burton City, the gateway to the mineral wealth of the Cariboo Creek country. Hotel accommodations are good. Pack and saddle horses can be had at reasonable figures. Game is plentiful, especially deer, cariboo and grouse, and if one has lost a bear he can also be found here. Fishing is grand, the mountain streams being full of the speckled beauties, the Columbia River teeming with the larger ones, while its tributaries in August are a swarming mass of the little red fish.

The Trail Creek Mines.

THE FOLLOWING extracts are taken from a letter written by Mr. Ernest G. Looke, one of the ablest mining engineers in the country:—

Having now been here about three weeks, I feel that I have looked around sufficiently to be able to give you a short account of the camp and also, my impressions of what the outcome will be. In the first place, I believe you are aware that all of the veins are heavily capped with iron, which must be pierced through before pay ore is reached. The veins are regular and continuous and as depth is attained the mineral increases in quantity and quality: this fact is now assured, that the deeper the shaft goes down the richer the mineral becomes. The ore is a pyrites of iron and a pyrites of copper, carrying gold and copper, called by mineralogists pyroethite and chalcopyrite. The values of the ores run from 2 per cent. to 15 per cent. copper, and from \$15 to \$75 and \$100 gold. It seems as though with greater depth the copper decreases and the gold increases and the rock carries more quartz. This seems to be the case with the Le Roi Mine, which has attained a depth of 450 feet and is the deepest in the district. The vein at the bottom is about thirty feet or more wide, carrying over \$100 in gold per ton. I may state to you here that the stock of this mine went a-begging last year at 40 cents, whereas I do not suppose that any of it could now be obtained at par value, viz: \$5. The principal mines are all close in to town and from a slight elevation can all be seen at once. When I say principal ones I mean those on which the most development has been done. They are all valuable prop-

erties. Some of them have paid large dividends, such as the War Eagle, \$157,000, etc., whilst others are merely developing either with a view to sell, or are waiting for the railroad so as to ship their ores at a better profit. Most of the stock of these concerns is at par or above, and very little of it can be obtained at that. Small blocks may sometimes be obtained here which are readily mopped up.

The names of the mines which appear to be on the main belt are the Josie, Le Roi, War Eagle, Iron Mask, Centre Star, Virginia, Iron Horse, Georgia, etc., with a few others which I do not remember, and on which very little work has been done. The Iron Horse and Georgia have both been sold since I came here, the former for \$60,000, including three claims; the latter of one claim for \$25,000. Not much work had been done on them, but they are on the same belt as the mines which are doing so well, and whose value is reckoned at up into the millions.

For miles the ground is "staked out" in every direction, and in many instances the cropping show good, strong veins very similar to the surface indications of the good mines I have mentioned. Of course, all of them are not going to be mines like the Le Roi or War Eagle, but some of them will no doubt prove valuable properties, and now whilst the camp is in its infancy is the time to buy out these claims at easy prices. The country rock is a very hard diorite, sometimes changing to syenite; consequently work is very expensive. I believe an ordinary tunnel 5 feet by 6 feet will cost \$15 a foot driven by hand, from which you will gather that it is no poor man's camp. The veins are not true fissures but are probably cracks formed by the diorite cooling off, and subsequently becoming the vents for springs of hot water carrying the minerals in solution (for a description of this theory I refer you to Le Conte's Geology). Walls, the veins can hardly be said to have any, neither can any other of the characteristics of true fissure veins be observed, still the overflow of diorite seems to have been so vast that for all practical purposes the veins will prove just as reliable as true fissures. They will extend at least through the diorite and very likely into the granite, as I understand the veins have been lately proved to do at Cripple Creek. At present the camp is a smelting proposition, but I do not think that it would be safe to say that it will be always such after greater depth is attained.

One smelter is in full blast at Trail, on the Columbia River, and two others are said to have picked out their location and will soon be in course of construction.

I am perfectly satisfied with the outlook. I believe that the camp will prove a record breaker, and I am satisfied that any intelligent mining man who has some capital, which he will use judiciously, may in a few years gather together a fortune.

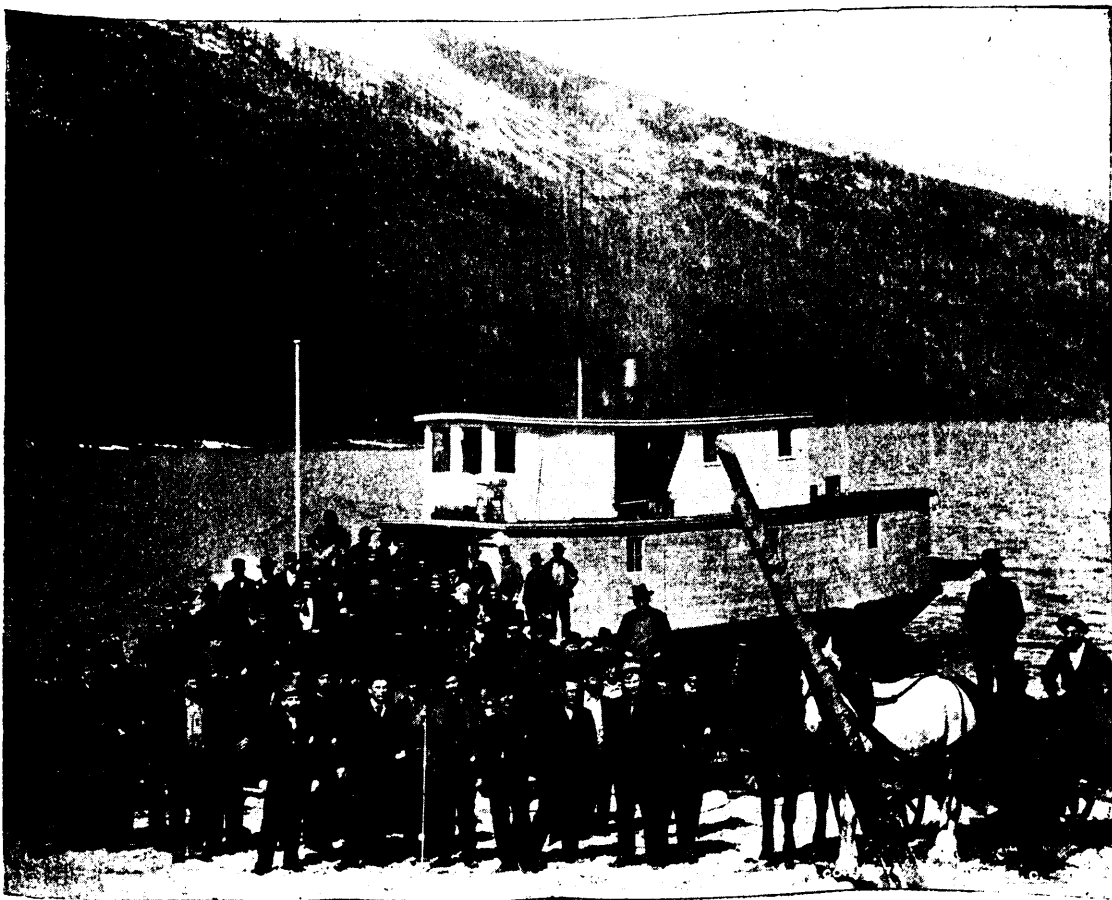
Nelson.

NELSON is pleasantly situated where the valley of Cottonwood Smith Creek joins the Kootenay River. It may be said to be the oldest town in the district and owes its commencement to the discovery of the Silver King and Kootenay Bonanza mines on Toad Mountain in 1886. The town was not laid out, however, till 1888, when the first lots were sold. It is one of the most beautiful spots in the Kootenay, as may be judged from the engraving which we publish in this number. Not only is it the terminus of the Nelson &

Fort Shepherd Railway but it is also connected by the Columbia & Kootenay Railway with Robson, which is a stopping place of the C. & K. S. N. Co.'s boats. That Nelson is destined to be a great centre is evidenced by the fact that the proposed Crows Nest Pass Railway will make it its terminus. That the Crows Nest Pass road will be built in the very near future needs no prophet to predict. Already the Canadian Pacific Company has declared its willingness to build the line, and the first steps toward this end has already been taken by the submission of proposals to the Dominion Government for the construction of the railway. The matter having gone so far cannot well be dropped now as it is a clear admission of the necessity of the road. Taking these facts into consideration, there is very little doubt that within the next few years Nelson will take great strides towards being a metropolis. It is the very centre of the great Kootenay mining district and its central position, if nothing else, assures a great future for it.

able of delivering 100 tons per day. They also built a smelter at Nelson which has been in operation for some time. To give an idea of the nature of these mines it may be mentioned that the company paid a million dollars when they purchased them. It is now the largest producing property in the country. The output of these mines is chiefly silver, but there are a number of gold bearing properties near Nelson attracting attention, principal among which may be mentioned the Starlight and Athabasca. That the whole country around Nelson is exceedingly rich in silver and gold is now well known, and as a mining camp it will undoubtedly hold its own in the future.

The town itself is well built, and has probably more of a substantial appearance than most of the other towns in the Kootenay. This is attributable, in a measure, to its greater age, but the enterprise and solid character of its residents have something to do with it. Like Rossland, it has two banks, the Bank of Montreal and Bank



STEAMER "HUNTER" AT SLOCAN CITY.

Not far from Nelson are the falls of the Kootenay River, which will undoubtedly be used for the driving of machinery, so that the prospects of the town becoming not only a trade centre but also a large manufacturing place are very bright. Its position will always assure its being a distributing point for the whole of Kootenay and as manufactures are inaugurated the advantages of Nelson will certainly give it the preference for their establishment.

In the neighborhood of the town are the famous properties of the Hall Mines Company, consisting of the Silver King, Kootenay Bonanza, American Flag and Kohinoor mines. This company, finding that the plan of transporting their ore from the mines to Nelson by wagon road was tedious and expensive, undertook the erection of a wire tramway which is now built and cap-

of British Columbia having branches established. One feature of the town is the comfortable and, in many cases, picturesque residences of the inhabitants. Several wholesale houses have established branches here, showing that they recognize the importance of Nelson as a distributing point.

The following is an extract from an article contributed by Mr. W. Pellew Harvey to the *Mining Journal* of London, England:—

"Around Nelson there are a good many mines in a more or less developed state, the principal ones of such days being the Poorman, Royal Canadian, Star of the West, Majestic, Whitewater, &c.; these are gold propositions, the gangue being quartz, with heavy sulphurets of iron and mispickel. The first and last have had a good deal of work done on them, and in the case of the

Poorman with much profit. I understand these could be acquired on reasonable terms, and as water and timber are available should offer an inducement.

On the Toad Mountain, in the same camp, are very many other properties, the leading ones, however, being the Silver King, Kootenay Bonanza, American Flag, Kohinoor, and some quartz claims, now operated by the Hall Mines (Limited), of London. The ores produced are argentiferous copper, with some gold, as grey and horseflesh copper, ranging from 4 per cent. to 45 per cent. copper, and from 40 ounces to 2,000 ounces of silver per ton, the average being about $\frac{1}{2}$ per cent. copper and 50 ounces silver. The company is working with great judgment, and is destined to have excellent returns so soon as the smelter is in running order. It was started about two months ago, but some difficulties with the running of the tram line and the water jacket had to be rectified, and in consequence delay in the regular return of matte has occurred. The smelter is supposed to handle 100 tons of ore daily, and up to the time of the stoppage referred to had put through a considerable quantity on this basis, giving a matte of 45 per cent. of copper, 300 ounces silver, and 12 ounces gold per ton, with a concentration of 10 to 1. The mines operated by the London company (the only one of the Province under such management) are looked upon locally as being the most important in British Columbia, and no one doubts the final issue. Coke costs, laid down at Nelson to the smelter about \$14 per ton of 2,000 lbs. (Hoods, Cardiff); to get the matte to a refinery will cost about \$17.50 per ton, but it is expected, with the development of the mines at Rossland and Nelson, and also the Slocan, the immense coal fields of the Crow's Nest will eventually be opened up, and by this means the price of fuel materially decreased, and local refinery made possible with economy. Further up the Kootenay Lake is Pilot Bay, where a smelter is operating successfully (see engraving in this issue) on the lead ores of Kaslo, Slocan, and Ainsworth, and some dry silver ores from the Springer Creek." NOTE.—Hall Mine shares are quoted at 34s. on £1 shares.

Rossland.

ROSSLAND was named after Ross Thompson who staked it out as a pre-emption in 1892. In 1894 the place was but little known although Trail Creek, the camp in which it is situated, had then attracted the attention of mining men. In 1895 Rossland's population had grown to 300, and at present it is estimated to contain 4,000 inhabitants. The growth of the town has been phenomenal as these figures show, but there are not a few who hold the opinion that by the close of another year the population will be 10,000. As early as 1890 the discoveries of such mines as the Le Roi, War

Eagle, Josie, and others were made, but from one cause or another real development work did not take place for several years afterwards. In 1891 ore from the Le Roi was taken on a pack train from the mine and shipped to Butte to be smelted. To-day there is a fine smelter at Trail (of which we give an engraving in this number), and it will not be long until all the ore taken from the mines around Rossland will be smelted at home instead of being sent hundreds of miles away. In 1894 the work of active development may be said to have commenced, and this was followed by strong companies being formed to work the mines.

It may be interesting at this point to mention a few of those companies and the capital of each:

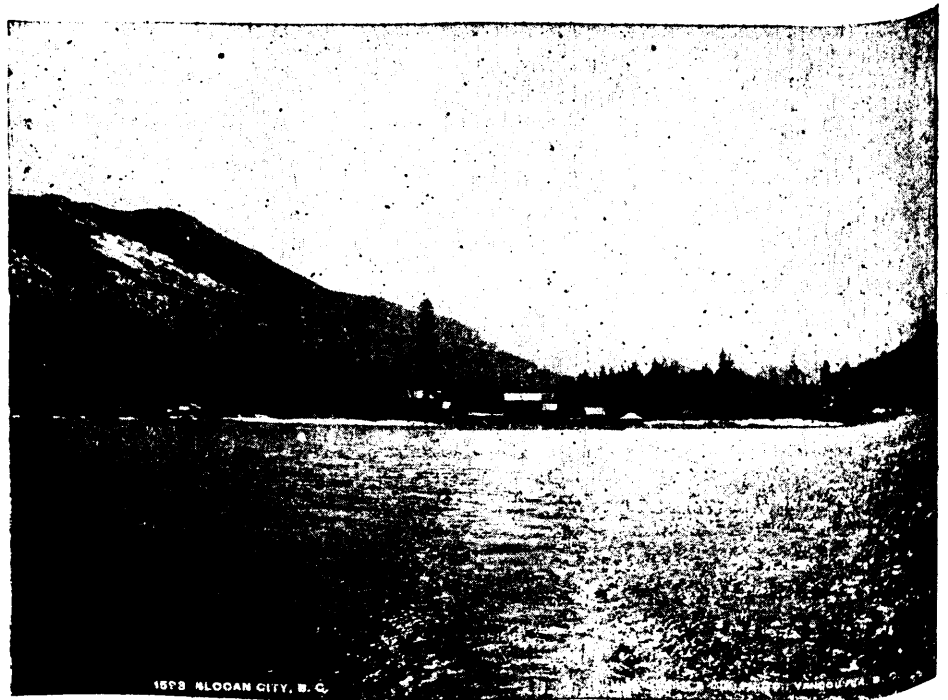
The O. K. Mining Co. owns the O. K. Mine and has a capital of \$1,000,000.

The War Eagle Gold Mining Co. owns the War Eagle, Iron Mask, Virginia, and Poorman Mines, and has a capital of \$500,000.

The Le Roi Mining and Smelting Co. owns the Le Roi, Black Bear and Ivanhoe Mines and has a capital of \$2,500,000.

The Josie Gold Mining Co. owns the Josie Mine and has a capital of \$700,000.

The Centre Star Co. owns the Centre Star Mine and has a capital of \$500,000.



SLOCAN CITY, B. C.

The Nickel Plate Mining Co. owns the Nickel Plate Mine and has a capital of \$500,000.

The St. Elmo Gold Mining Co. owns the St. Elmo Mine and has a capital of \$1,000,000.

The Trail Mining Co. owns the Columbia, Kootenay and Tip Top Mines and has a capital of \$250,000.

The Crown Point Mining and Milling Co. owns the Crown Point, Hidden Treasure and White Swan Mines and has capital of \$1,000,000.

These nine companies represent a capital of nearly eight million dollars employed in developing and working the mines in the vicinity of Rossland. Is it any wonder, therefore, that the town has had such rapid growth? But there are a number of mines owned and worked by private parties such as the Cliff by Messrs. Wharton, Cook and Late; the Indiana, Timber and Old Kentuck by parties under the name of the Indiana Consolidated;

the Jumbo by Messrs. Finch and Galusha; the Gold King by Mr. Stussi; the Georgia by Messrs. McArthur and Kelly; the North Star by Messrs. Kelly, Stack and Jeldness; the R. E. Lee and Maid of Erin by Messrs. Stewart, Welch and Larsen; the Lily May by Messrs. Bowles and Raymond; and many others, representing in all several millions more of capital invested.

It is impossible to give any adequate idea of the dividends earned by all these undertakings, but one or two instances will suffice to show the paying qualities of the mines. The Le Roi paid last year \$125,000 in dividends and ever since has paid at the rate of \$25,000 per month, and is expected to pay \$50,000 from this on. The War Eagle paid \$157,000 last year, and it is estimated to fully rival the Le Roi as a dividend paying concern. We could give a number of other instances of big paying investments but these two will serve as samples of others.

It is expected that over 5,000 men will be employed during the coming season in these mines, and this means an immense trade to Rossland. The rise of this wonderful camp seems like a fairy tale especially when it is considered that all this great development may be said to have taken place within the past eighteen months.

Rossland is now connected with Trail, where the smelter is, by means of a narrow gauge railway and before the end of the summer there will be at least three railways running into it. The people of the town are law-abiding and there is none of that recklessness and disorder so prevalent in western mining camps across the border. There are several churches, Methodist, Episcopalian, Presbyterian, and Roman Catholic, with resident clergymen, and other denominations are said to be preparing to follow suit.

The fourth estate is well represented by the Record, Miner and Prospector, three newspapers creditable in appearance and well edited. There is a good school and an opera house which has been so successful that the proprietors propose to enlarge it. The town is lit by electric light and pure water is brought in from Strong Creek in the neighborhood, the reservoir for containing it being 300 feet above the town, so that ample protection from fire is afforded, which is increased by the presence of an efficient fire brigade. The character of the buildings is improving as new ones are erected, and as steps are being taken towards the immediate incorporation of the town, one of the first steps of the council will probably be to fix the fire limits which will still further tend to improve the condition of Rossland. We must not forget to mention that already two of the principal banks in Canada, the Bank of Montreal and the Bank of British North America, have branches here, to be followed probably by others at an early period.

As soon as incorporation is affected the grading of the streets, the laying of a proper system of sewers and sidewalks will be actively carried on. This will add much to the appearance and comfort of the town which already is a most pleasant place to live in. The Dominion Express Company, which has an office at Rossland, handled during the past year over half a million dollars in cash, and while in 1894 the shipments of ore amounted to about \$125,000, in 1895 they had increased to over a

million and a quarter. But so actively is development going on that a conservative estimate puts the production of 1896 at not less than \$5,000,000. Is it any wonder, then, that the people of Rossland look forward to their town being a great mining centre in the near future?

We cannot close this article without referring to a very useful publication recently issued by M. J. A. Kirk on the Trail Creek Mines. Those who desire to obtain useful particulars in detail regarding the district and its resources should send for a copy of the work and the map that accompanies it.

Kaslo.

KASLO IS beautifully situated on the west shore of Lake Kootenay, about 20 miles from Lardo, at the northern head, and a like distance from the point where the Kootenay River leaves the lake proper to join the Columbia on its way to the ocean. The city is built on a series of terraces, or mesas, which rise from the lake with a grad-



KASLO, B. C.

ual ascent, giving it a perfect system of drainage, which from a sanitary point of view leaves nothing to be desired. The altitude of the city is only about 1,700 feet above sea level, ensuring it a mildness of climate that is hard to realize by any inhabitant of any eastern community who resides as far north. In this connection it is only necessary to say that Kootenay Lake never freezes, and the thermometer has only once registered below zero since the organization of the city. There is never much snow in the city, and the little that falls does not remain any great length of time. The mountains, however, which rise up majestically—abruptly from every point on the shore of the lake—are snow-capped the greater portion of the year, and the Kasloites can look out in the hottest months and see the verdure shaded away into the glistening white, and feel the refreshing breezes that come down from the summits of the snow-clad and rocky peaks, and wonder how people can exist in any country where the thermometer is erratic enough to climb up to 90 or 100 in the shade.

But aside from the poetry and pleasure which comes of residing in so pleasant a situation, it is the solid advantages it offers from a business point of view which

makes it desirable to all those who are looking for a more profitable investment for their money, or are seeking homes where competition is not so keen, as it is in the overdone and overcrowded older communities of the east. Located as it is in the centre of the great Kaslo-Slocan mining country, and at a point which is the only natural outlet for the ores of its mines, Kaslo is destined to become, in the near future, the greatest milling, and smelting point in the rocky mountain region. That this is not claiming too much, it is only necessary to establish its pre-eminence by describing in a brief way the mines in its vicinity, and which are tributary to it; its facilities for the shipment of either the raw ore, or the smelted and refined product; and its natural advantages as a smelting point.

Mineral was first discovered near Kaslo in the summer of 1890. This led eventually to the establishment of the fact that the territory lying between the Kootenay and Slocan Lakes was, in all probability, the richest country in silver-lead ore in the world. It is not the purpose in this article to attempt to give the history of the mines in the district, but simply to show what some of the prospects of '90 and '91 have become, despite the difficulties which had to be encountered and overcome. The greatest perplexity of the miner at the outset was happily overcome in October of last year, when the Kaslo & Slocan Railway completed its line to Sandon and Cody Creek, which are in the heart of the great Kaslo-Slocan mining country. Prior to the time of the completing of the road, the majority of the miners only occupied themselves in taking out the ore which was encountered in developing their properties. Now, with the difficulty of shipment obviated, it is confidently expected that the mines will all be worked to their greatest capacity. In describing the mines only a few general features and figures can be given of the most notable among them, as they are so numerous, that in an article of this kind it would be impossible to give anything like details.

The Slocan Star, at Sandon, about 30 miles from Kaslo, at the present terminus of the railroad, will ship this year 3,000 tons of selected ore, averaging in value 100 ounces in silver to the ton and 60 per cent. lead. It has just completed a concentrator, with all the latest improvements, with a capacity of 150 tons per day. The concentrator will put out this year at least 7,000 tons of concentrates, making a total output for the mine, this year, of 10,000 tons, averaging in value equal to the selected ore. The mine has a force of 40 men constantly at work. It is worked by four tunnels, aggregating 2,000 feet in length. It is stocked for \$500,000, and has already paid a dividend equal to 10 per cent. of its entire capital.

The Noble Five will ship this year 1,000 tons of ore averaging 60 to 150 ounces of silver, and 70 per cent. lead. Since the property has been opened up 2,000 tons of ore have been shipped. It is worked by tunnels, which aggregate a depth of 3,500 feet. It employs about 15 men steadily.

The Ruth is taking out 10 tons of ore daily, which averages 100 ounces in silver and 65 per cent. lead.

The Wellington will ship this year 1,000 tons of ore, averaging 160 ounces in silver.

The Last Chance will ship at least 500 tons of 200 ounce ore.

The American Boy, a prospect last year, has shipped 100 tons, 100 ounces in silver, 60 per cent. lead. It will be a large producer this year, under the increased facilities for shipping.

The Surprise has shipped this winter 300 tons, 250 ounces in silver, 60 per cent. lead, and will be a continuous producer.

The Deadman has about 1,200 feet of development,

and will ship this season 500 tons of 170 ounces in silver and 40 per cent. lead.

The Goodenough-Rico will ship this season 50 tons of high grade ore. A shipment of 20 tons from this mine last year netted the owners \$6,875.

The Rico commenced work last year in August, with a force of 40 men, and ran 6 tunnels, each of which has been extended 150 feet. They took out in this work 300 tons of ore, averaging 400 ounces of silver to the ton.

The Mountain Chief produced 160 tons of 100 ounce ore last year.

The Payne Group, 30 tons of an equal grade.

The Maid of Erin will complete a shipment of 500 tons of 100 ounce ore, by the end of March, this year.

The Washington is putting in a concentrator, and has 20,000 tons of crude ore on the dump, ready for treatment.

The Dardanelles shipped 100 tons of ore last year.

The Ajax will ship 100 tons this season; the Rambler, 50 tons; the Slocan Boy, 50 tons; the R. E. Lee, 50 tons; the Mountain Chief No. 2, 700 tons; the Lucky Jim, 200 tons; the Ivanhoe, 150 tons. All these ores will average 100 ounces in silver to the ton, and a large percentage in lead.

One hundred other properties could be enumerated which have been, and are, producing ore; and an almost innumerable number of prospects have a fine showing of ore, and a large number of these will be producing in the near future. As an evidence of this statement, is Whitewater, which last summer was only a prospect, is now shipping ore, and has a cash value of at least \$100,000. The veins are all of the true fissure character, and are nearly all worked by tunnels, thus making it a cheap camp to operate. Development has demonstrated the uniform richness and size, and the continuity of the veins. Already it is known that wagon roads will be constructed to the Ruth, Whitewater and Wellington mines this year; and tramways are contemplated from the Noble Five, Payne Group and Rico, to the Kaslo and Slocan Railway. The actual amount of ore exported to American smelters this year, to the present date—March 28th—from Kaslo, is 3,830 tons. No record is made of ore going to Pilot Bay and Nelson smelters, which would easily bring the aggregate up to considerably over 4,000 tons. In this description many of the important properties have, of necessity, been overlooked, as no list of the producing mines has ever been made. But all the mines named are tributary to Kaslo, which is their natural outlet. Another part of the district has been entirely omitted for want of statistics in regard to it. This part is the Lardo-Duncan country. The outlet for this latter named territory is down the Lardo and Duncan Rivers to the northern head of the Kootenay Lake, which brings it in easy reach of Kaslo. The ores of this district may be classed as dry, consisting as they do, principally, of copper, silver and gold. It is well established, however, that this part of the district is immensely rich in these ores, and the exploitation of the mines is only waiting till a better means of transportation of the ores down the river is effected. In a portion of the country adjacent to the Slocan Lake, and in the Whitewater and Lyle basins, the ores for the most part are also dry; and this dry ore belt, covering an extensive scope of country, extends within a few miles of Kaslo. Almost an unlimited amount of iron and lime ores for fluxing purposes are found convenient to the lake, or railway, within a short distance of the city. These can be mined and hauled at a small expense, and thus nature has provided almost every necessary adjunct for a successful smelting point here. These natural advantages will, no doubt, induce intelligent capital to put in a plant here at an early date.

Kaslo is connected by the Kaslo & Slocan Railway with the Canadian Pacific Railway at Sandon, and has a daily service. It has also a daily service by steamboat connecting it with the Great Northern, and with the Spokane Northern, Nelson and Fort Shepherd roads; thus giving it a choice of three different routes for ingress or egress.

The site where Kaslo now stands was located as a homestead in 1890, and the mining excitement began a few months later. It was at once seen that if the mines proved permanent that there must be, somewhere on the lake, a general supply and distributing point. Its close proximity, and the easy grade up the Kaslo River to the mines, left no doubt as to all others. And the boom was on. It is not necessary to go over the wild delusions which originated at this time. All kinds of business sprung up almost like Jonah's gourd. Stores, saloons, mechanical shops of various kinds went up almost like magic. There was a post office, a saw mill, a school established, a church built, a sampling mill of 100 tons capacity built, and a theatre instituted. A trail had been built to Bear Lake in 1892, but this was altogether too small a thing for 1893, and a wagon road was projected to Three Forks. The citizens of Kaslo actually contributed, in hard cash and labor, \$20,000 to build it—and it was built, and it is a creditable road to its promoters. In August of 1893, Kaslo loosed its leading strings with the Provincial Government, and was incorporated as a city. But about the time the articles of incorporation were granted, the depression of 1893 was at hand, and the price of silver went down. This was the first set-back. Then came the fire of 1894, which destroyed fully one-half of the business part of the city. Then came the flood of the same year, and one-half of the remaining part was practically swept out of existence. These calamities are ancient history now. The men who were first on the ground in a business way had faith and stayed with Kaslo, and to-day it has a population of about 1,000. All kinds of business is fairly well represented. There is an efficient school, the theatre is in full blast, and the mill is in active operation. The sampling mill is still in existence. The wagon road which took the place of the early trail has in its turn given place to the Kaslo and Slocan Railway. The principal streets have been graded down, and over a mile of sidewalks built, and the city has, within the last year, erected a city hall and lock-up, at a cost of \$2,500 and acquired a title to the ground on which they stand. In a quiet, steady way the city is growing, and a better class of buildings is taking the place of those which were erected in the early days. The boom element is gone. A system of water-works is being projected which will bring a plentiful supply of cool mountain water to the door of its citizens, and afford, at the same time, ample fire protection. Kaslo River can generate an almost unlimited

amount of power, and a scheme is now on foot to utilize it for lighting the city, and for milling and smelting purposes. A true Kasloite has never lost faith in his city, and while he does not believe in sitting down until something turns up, he puts on "a hustle," and is firmly convinced that everything comes to him who waits.



NEW DENVER, B. C.

New Denver.

NEW DENVER is the Government and the geographical centre of the Slocan Mining Division. A brief explanation of the geography of the district will at once show why New Denver is, and always will be, the capital of the Slocan.

The Slocan Mining District consists of six parallel creeks, five of which flow into Slocan Lake, and the sixth into Slocan River just below Slocan Lake. These are Carpenter, Four Mile, Eight Mile, Ten Mile, Springer, and Lemon Creeks. So well do the mines on all these creeks look, that it is impossible to say that any one creek is any better or richer than any of the rest. It happens, however, that Carpenter Creek was the first discovered and is ahead of all the rest in point of development. New Denver is the name of the large flat at the mouth of Carpenter Creek. Its admirable situation caused it to be selected at once as the seat of the Government offices, and recent developments have made it more central than ever. The Nakusp & Slocan Railway gives it easy connection with all the developed mines on Carpenter Creek, while the steamer "William Hunter" makes trips at least once a day to the mouths of all the other creeks, and carries supplies down from the stores of New Denver, or takes prospectors, who have been spending a few days "in town" back to their less congenial daily business.

Apart from its position as the Government and geographical centre, New Denver is very important as a point for transient trade. It happens that Carpenter

Creek, besides having an outlet at New Denver, has an outlet to the east at Kaslo. A number of American travellers like the Kaslo route into the country, and, as Kaslo has no direct connection with any other of the Slocan creeks, all these travellers have to come down Carpenter Creek to its mouth at New Denver, and then go from there to the mouths of the other creeks. These people come in by train in the evening, stay over night to await the steamer in the morning, and thus keep the hotels full of travellers. Moreover, there is always a stream of traffic between the old camp on Carpenter Creek and the new ones down Slocan Lake. The miner who has mined in the old camp during the winter wants to prospect in the new camp during the summer. Thus a stream of trade through New Denver is kept up. At present it is very hard to get accommodation for a night although the town is well supplied with hotels.

Besides having a good position for business, New Denver is endeared to all its people by its beautiful climate and situation. For a place 1800 feet above the sea the mildness of its climate is marvellous. The snow disappears more than a month before it leaves other points on the same lake ten or fifteen miles away, and long before it disappears in other parts of West Kootenay. This makes New Denver the favorite residential point of the Slocan. The beauty of the town will some day make it a great centre of travel for tourists. Some of those who have seen it, including the writer of this article, are well acquainted with Switzerland, and all agree that there is nothing there quite equal to the mountains round New Denver, or to the sunsets of Slocan Lake.

An extension of the Nakusp & Slocan Railway is about to be made through the town to the lower creeks on Slocan Lake. This will greatly hasten the development of this the most important mining section of British Columbia.

Sandon.

THE town of Sandon at the present writing, though only a few months old, has a population of about 1000 and is steadily increasing in size. It is a brisk, busy place of business and has the destination of being the only town in West Kootenay which is the termini of two railways. These railways are the Nakusp & Slocan Railway (which is operated by the C. P. R.) and the Kaslo and Slocan Railway. Daily trains, both passenger and freight, are run on the latter road and daily freight and tri-weekly passenger trains are run on the former. In a short time it is expected there will be a daily passenger service on the N. & S. Railway.

The town is the centre of a remarkably rich mining district, being surrounded by many valuable mines, some of which have the reputation of being the richest silver-lead mines in the world. The following are some of the shipping mines in the immediate vicinity of and tributary to Sandon. The Slocan Star, Ruth, Reco, Goodenough, Deadman, Last Chance, Noble Five, Bluebird, R. E. Lee, Ivanhoe, American Boy, Madison, Ajax, Oswego, Payne Group, and the Belt.

The chief product of these mines is galena which averages 76 per cent. lead and 150 ounces silver to the ton. Recently the owners of the Reco shipped two carloads of ore which netted the fortunate shippers over \$17,000. The company owning the Slocan Star (the Byron N. White Company) have recently completed the

erection of a thoroughly equipped concentrator with a capacity of 125 tons per diem. This company has now on hand many thousands of tons of concentrating ore ready for the concentrator. It is expected that during the coming summer the owners of the Noble Five and Reco groups of mines will also build concentrators.

Apparently, Sandon has a very bright future. It is a very suitable place for the establishment of wholesale houses as owing to its excellent railway system it is a fine distributing point from which to supply the east, west and south of West Kootenay.

At the last session of the Legislature a charter was granted to a company for the purpose of empowering it to erect and operate water and electric light works. The construction of these will be proceeded with at once—in fact a commencement has already been made on the water works. The town will therefore shortly be supplied with the best of water and electric light services and with efficient fire protection. It already possesses a good telephone system. At the present time there are two survey parties at Sandon—one locating a branch of the K. & S. Railway from Sandon to the mines up Sandon Creek and the other locating a branch of the N. & S. Railway to the same point.

The Slocan country generally is known as a "poor man's camp"—that is, there are more mines operated by the original locators and men of moderate capital than in any other part of the district of West Kootenay. Only the other day a body of clean galena ore one foot wide has been discovered within the limits of the town and the owners are vigorously prosecuting development work with a view to early shipment.

The number of shipping mines in and near the town is expected to be considerably increased by next winter as new discoveries of ore are being frequently made. The quantity of ore shipped and number of men employed by these mines during the last winter have been larger than any previous season. It is safe to say then that Sandon is and will continue to be one of the most prosperous and important towns in the interior of British Columbia.

Fort Steele.

FORT STEELE in a few years time, judging from the promising mineral locations in the vicinity, ought to become a flourishing mining centre. Very few people realize the immense possibilities in the number and value of the numerous quartz and placer properties which lie within a radius of ten miles of this point. Up Wild Horse Creek, of course, is the most important mineral bearing region comprised in this area. Any one looking at a map of this section of country would be astonished at the number of locations and the way in which they are distributed on each side of the main creek and up its numerous tributaries and branches. Starting from Fort Steele and following up the northwest bank of Wild Horse, a distance of about two miles of gently rolling, sparsely timbered country is crossed before reaching the foot of the mountains, where the creek issues from the first range of foothills through a deep and precipitous canyon; thence following a gorge of about 100 feet in depth and averaging an eighth of a mile in width, which its waters have cut in a circuitous manner through the sedimentary deposits of the Kootenay Valley, and joining the main stream at Fort Steele. The bottom of this ravine has been covered to a depth of eight or ten feet by the debris washed down from the

placer grounds above and may be worthy of attention some time in the future. Right at the mouth of the canyon considerable placer work has been done in the past, and there is no doubt, with the present improved machinery and the additional knowledge gained by past experience, a large extent of this ground would be found to pay well. Not only that, but, in the opinion of many old timers, there would in all probability be great chances of striking rich pay streaks in some of the old channels. However, leaving that for the future to decide, we will go on up the creek and confine our attention to those properties that are at present in process of development. Crossing over the range of foothills, the formation of which is slate and quartzite, and on which there are several locations of low grade gold quartz, we come to Brewery Creek, which flows into the Wild Horse from the north, and on the east bank in the

on a large scale. Adjoining these claims there are several Chinese companies engaged in hydraulicing, crevicing, and washing over the old tailings, and there is no doubt a large amount of gold is taken out every season.

On the hill to the north overlooking the old placer camp there are two gold quartz claims belonging to D. Griffiths and Geo. Dougherty. It is understood that this property has been bonded or sold to Chicago parties for \$35,000. Crossing over to the south bank and proceeding up stream for half a mile the mouth of Boulder Creek is reached, on which numerous valuable discoveries were made last year, the original location being the Gold Hill, situate on left hand side of the east fork of the creek. The ledge is about 200 feet wide and rises in a series of steps for about the length of the claim, the lead being exposed on three sides. It is a



SURVEY PARTY AT SANDON, B. C.

angle formed by it with the main stream is the ground being worked at present by the International Placer Co., of Montana. Good pay dirt has been struck and there is every prospect of it turning out well. On this property there are also four mineral claims showing good indications of gold bearing quartz. A short distance further up the main stream on the same side is the Invicta Gold Co's ground. It was originally owned by David Griffiths and worked by him for years, but is now in the possession of an English company and, in fact, has been under their control since 1892. They have been making extensive improvements and alterations and expect to realize large profits during the coming season. Immediately opposite on the other bank of the creek is another old hydraulic property called the Nip and Tuck, lately purchased from the original owners by Foster & Co. and leased to J. M. Buxton, of Vancouver. Preparations are also being made to work this ground

gold-bearing quartz, and has been sampled for 4000 square feet on the surface, the average return from 30 assays being $3\frac{90}{100}$ to the ton. The My Emma is an extension to the south and the Lizzie an extension to the north of the Gold Hill, the lead running through them both about three feet wide on the My Emma but not exposed on the surface on the Lizzie. The Caledonia is an extension of the Gold Hill on the east, the Midas an extension of My Emma on the west. The Patsy Bolivar is south of the My Emma with a fifteen-foot ledge. The International Placer Co. have five claims lying west of the Gold Hill property with an eight-foot lead, all having the same character of gold quartz. The Boston Girl directly across the creek from the Gold Hill has a three-foot ledge of gold quartz lying between granite walls, the lead can be traced for 500 feet and assay returns showing about \$40 gold and silver. Leaving Boulder Creek and following the mountainside south of

Wild Horse, the next is the Dardanelles group of mines which are situate about 2000 feet above the creek and about three miles from the old placer camp. A good trail of about two miles in length connects the property with the wagon road which follows up the northwest bank of Wild Horse: The ledge is four feet in width and can be traced for over 2000 feet, the country rock being porphyritic slate. A lot of work has been done, showing it up to advantage, one tunnel 140 feet in length, in which the lead shows 18 in. quartz with 15 in. of talc on top and from 4 to 6 in. of solid galena on the bottom, assay returns giving 50 to 100 in gold. These claims were discovered in the summer of 1893 by Banks and Young.

About 1,000 feet higher up the mountain is the Lentz Group, comprising the Lillie May, Lentz, and the McKinley Lode. On the Lillie May there is a tunnel 40 feet in length with a two foot lead of ore in the face; an open rock cut about 50 feet from the tunnel, in ten feet with a six foot face, good surface showing. Above this cut, the lead is exposed to view, being two and a half feet in width at this point. Another rock cut about 200 feet from the tunnel is in nine feet on the face, of which the lead measures 6 feet from wall to wall, with a fine shewing of ore assaying well in gold. The vein can be traced across the Lillie-May onto the quartz lode. This property has been sold to a Spokane company who in all probability will proceed with development work during the coming season.

A mile up stream from the Dardanelles, on the same side, is Wallinger Creek, on which are the Hoodo and Rocky Mountain claims, with a ledge of gold bearing quartz. On the Rocky Mountain there is a shaft 20 feet in depth, the ledge being five feet wide, the ore carrying galena and iron sulphurets assaying \$11 in gold with eleven ounces in silver. At the junction of the east fork and main stream, about a mile from the last mentioned properties, there is what is called the Golden Five Group, located by Charles Elwood and partners in 1894. There are four ledges about 300 feet apart, cutting the formation which is porphyritic slate; they crop out for some distance on the surface, covered at each end with slides; on one, the Big Bend Boy, a tunnel has been run in 30 feet. An open cut has also been run along the ledge, showing an ore body of about two and a half feet in width. Up on the east fork, those claims which are the greatest distance away from its junction with the main stream are the Hidden Hand and Iron Mask, having an iron cap some fifty feet in width and eight or ten feet in thickness. The ore is chloanthite, assaying 23 ounces in silver and \$5 in gold, with eight per cent. nickel. Following down this branch we come to the Nancy Hanks, Sweepstakes and Maud S. The lead on these claims is about 400 feet wide, the ore iron sulphurets carrying gold and silver; the country rock being slate on one side with lime on the other. Four hundred feet of the lead has been exposed to view by washing the face of the ledge from a ditch run in from the creek; one tunnel has been run in for fifteen feet, and six cuts at a distance of about sixty feet apart, from three to six feet in length, on all of which there is ore in sight. The lead crosses the creek from the Sweepstakes to the Nancy Hanks, in fact the lead is in some places the bed of the creek. Not far away, in the same vicinity, are the Neosha and the Hiyue; the lead is an iron cap about 24 feet in width, the ore, galena, assaying 81 ounces in silver, and \$5 in gold. Last, but not least, are the claims up Victoria Gulch, on the northwest side of the creek, about opposite the Dardanelles Group. Up at the head of the gulch, near the top of the mountain, and right back of the old placer camp, is situated a claim belonging to Wm. Voss, which was dis-

covered and located in 1887, and has the honor of being the first quartz location on the creek; the ledge is about 60 feet in width and will concentrate from two and a half to 115 into one. A tunnel has been run in, cutting the ledge and showing a fine body of ore which averages 20 ounces in silver, 35 per cent. lead and \$3 in gold. Between this point and the mouth of the gulch there are six claims, all of which have well defined ledges of gold bearing quartz. All these properties mentioned have the advantage of being within easy reach of the main stream, down the banks of which a wagon road has been made, connecting this region with the Kootenay at Fort Steele, there is also unrivalled water power, and an unlimited supply of timber, so there is no reason to doubt that in a very short time mining will be carried on in earnest, which will necessitate the building of a stamp mill or smelter in the vicinity.

Donald.

[COMMUNICATED.]

THE TOWN OF DONALD, delightfully situated at the foot of the Selkirk range of mountains about one mile from the first crossing of the Columbia River by the C. P. R., is the end of the Western and commencement of the Pacific Division, and is distant 2,445 miles from Montreal and 458 miles from Vancouver. Eleven years ago construction of the railway reached Donald and from that time the town rose, as it were, from out of the silent forest, roamed by Indians and wild animals, and at the present time contains between 300 and 400 inhabitants and about 100 residences. The majority of the inhabitants are employees of the railway, Donald being the headquarters of the mountain section, where repair shops, etc., are built. Large stores belonging to the company supply what is required in the repairs of engines, cars, etc., and a supply store is also here where the employees obtain their supplies. The manager, or superintendent, of the Pacific Division is Mr. R. Marpole, whose energetic movements are proverbial, as he is continually visiting every section of his division and thoroughly inspecting the same, hence an accident is hardly ever heard of. The C. P. R. hospital for the use of the employees is at Donald and a professional gentleman and a nurse are in attendance. I would remark that a more healthy country, however, cannot be found, and I speak for all East Kootenay, that out of from 2,000 to 3,000 people an average of fifteen deaths a year would cover all. Very little work is carried on here outside of the C. P. R., but mills and logging camps are operated in the neighborhood. The court house for the county and the gaol is here located, in which the sheriff of Kootenay has his headquarters. There are thousands of acres of good land at and near to Donald outside of what is owned by the railway company. Many applications have been made for the same, but the circumlocution office is so run at Ottawa that one gets tired of waiting their pleasure; hence those who would settle around in farming go elsewhere. These lands are within the railway belt which I suppose accounts for the state of affairs. If they still belonged to the Province pre-emptions would have been obtained, and, I venture to say, many happy homes would be carved out of what is now isolation, and the produce and resources from the same would give abundance to the inhabitants. On the contrary, nearly everything

required for our use has to be transported from other places at considerable expense.

Ten years ago and later quite a number of mineral locations were taken up in the vicinity of Donald and on many of the claims considerable money was expended. On the Wait-a-bit River work was carried on extensively for some time. For the convenience of the miners a wagon road was built for four miles, which was paid for by Mr. Lukes, Sheriff Redgrave, and Mr. Kavanagh. Excellent prospects in gold and silver were found, but the great cry of West Kootenay put a stop to work for a time as the miners left for that locality. However, the time will come, I venture to say, when near by and for many miles around rich mines will be located. It is known that on the Wait-a-bit River and more especially on the Black Water River, a few miles from Donald, excellent placer mines exist which will shortly be worked to advantage. It is a country rich in minerals and will richly pay the explorer if he is interested in mines.

About twenty mineral claims have been recorded on Porcupine Creek about fifteen miles from Donald, which are gold bearing ledges, and on Quartz Creek twelve miles from Donald, which empties into the Columbia River, claims are located rich in gold. Eighteen miles from Donald valuable gold ledges have been found and it is anticipated that extensive fields will be discovered will be equal, if not superior, to some of our best mines in other parts of B. C.

Being confined, as it were, in my statements to Donald, in sending you these few lines, I cannot fully enter into some localities although they are as near to Donald as to other places, that is, if one could cross the mountains. However, I will conclude by mentioning the Spallumcheen country where a large amount has been spent for many years in the development of mines, some of which are known to be valuable and rich, viz.: the Rothschild and the Jones mine adjoining. The latter has been worked for months by William McNish & Jones and is proving a rich and valuable copper mine with vast silver leads, the copper assaying as high as 75 per cent., a carload of which will soon be ready for smelting. In these claims also assays of gold have been \$56 to the ton and silver 35 per cent., with lead, etc. In this direction an excellent bismuth mine has been developed, owned by Messrs. Dainard, Low, and Sheriff Redgrave. On Jubilee Mountain are located the Lancaster, Silver King, Mountain Daisy, and many other claims. The Silver King and the Mountain Daisy assay in some instances \$800 silver to the ton and are owned by Messrs. Redgrave and A. W. Vowell, crown grants covering the same. The Lancaster has shipped rock (copper) to Swansea. In time these mines will be looked after and worked by capitalists when convinced that they are valuable properties, but at present for the want of capital very little development is carried on.

[NOTE.—Mr. Redgrave, who kindly supplied us with the foregoing items, is a man widely known, not on the Pacific Coast alone, but throughout the broad Dominion. He has been for many years Sheriff of Kootenay; was a pioneer of Cariboo 34 years ago; has travelled extensively in Africa and the gold fields of Australia;

was an officer of police in the City of Toronto for years. In January, 1862, he conceived the idea of making an overland journey to British Columbia and carried that idea out. All the information he could get, which was very meagre at that date, he communicated to others, and showed them that in spite of all obstacles the Pacific Coast could and should be reached. In April of the same year different parties were formed which went by way of Chicago and St. Paul, across the Minnesota plains by stage, and down the Red River to Winnipeg. At Winnipeg, or what was then known as old Fort Garry, horses and provisions were purchased and the journey commenced by way of Edmonton, thence through the Rockies by Jasper and Yellowhead Passes; some landing at Quesnelle and others going by the Thompson to Kamloops. Innumerable hardships were met with and overcome, but on the plains it was a pleasant trip, game and buffalo being met with in hundreds of thousands. The dreary march through the Rockies required great strength and determination to reach the journey's end, and it was a great undertaking in those days as the time occupied was over six months. Most of the overlanders were successful in their different undertakings, some at this day being rich men and members of the Dominion Parliament. Mr. Redgrave may well look back with pride to this the first and last overland journey inaugurated by himself and ended by landing amongst us some of our most prominent men. We are



MAIN STREET, FORT STEELE, B. C.

in hopes that on some other occasion we may have the pleasure of receiving many items of the journey, coupled with the names of his hardy and brave companions who can always look back with pride to their six months journey through a then almost unknown country.]

Lardeau District.

THIS district adjoins the Trout Lake District on the north-west and is likely to prove one of the first annual producers in West Kootenay. The ledges are of immense size, some being over fifty feet in width with good surface showings, and are traceable for miles in length.

The most important groups so far developed are the Sable Creek and the Glengary. The former is now being operated by the Kootenay Gold, Silver and Copper Mining Company, the Kootenay Consolidated Mining Company, and several others not incorporated. The lode has an average width of 35 feet, is plainly traceable on the surface, and is located for about five miles. The Kootenay Gold, Silver and Copper Mining Company started to crosscut their vein at a depth of 60 feet last fall, going through 25 feet of high grade pay ore without reaching their hanging wall. Their expert is of the opinion that they will show fifty feet of pay ore. The ore carries gold, silver and copper, and is concentrating, about ten and half tons to one. The other claims are yet in the early stages of development but show the same character of mineral on the surface.

The Glengary is a high grade galena property, assays for silver showing from 100 to 1100 ozs. and a fair percentage of copper. The ledge is about eight feet wide, has two feet of solid galena in sight, and will probably be a shipper this fall.

Other important groups are the Lexington, embracing six claims; the Pool, six claims; the Gladstone; and many others, all showing large bodies of ore on the surface.

Gold has been found in many places in creeks and rivers throughout this district and no doubt this season will witness some important gold discoveries.

Fish River, which runs through the district from Lardau City, a promising townsite, affords a natural highway and excellent facilities for economic transportation. This river is navigable for over twenty miles, to within a few miles of its mouth where rapids exist. The Government are now building a wagon road from Lardau to the navigable waters of Fish River. This will enable all the mines in that section to ship their ore and will greatly assist development in the district.

Notes from Boundary Creek.

[FROM OUR CORRESPONDENT.]

AT the Greenwood Camp, properties now under bond to Messrs. Turner and Innes of Vancouver, development is going rapidly on.

On the Gold Drop sinking is being carried on at two different places, and the camp is looking well.

A diamond drill, recently brought over from Rossland, is at work on the Snowshoe. It is the intention of this company to fully demonstrate the value of their properties for the coming summer, and on the result of their work will depend in a large measure the progress of the camp.

The Skylark Group of claims in Skylark Camp, it is believed, will soon be put in shape for active work. The Skylark shaft, which was filled with water, was bailed out last week so that the lower workings could be examined by interested parties. The Skylark, Denver and Silver King are included in this group, the Skylark probably carrying the richest ore in the district.

The Last Chance Claim, Smith's Camp, on which a 75 foot shaft was just completed, has never looked so promising as at the present time. The ore carries silver and lead principally, with some gold. Considerable native silver is also found.

Development is being pushed on the North Star and Lake View Claims, Long Lake Camp. On the former a shaft will be sunk to a depth of 100 feet, while on the Lake View a tunnel will be driven the same distance.

These are considered to be among the most valuable claims in Long Lake Camps.

A force of men will soon be put at work on the Morrison Claim, Deadwood Camp. This claim was located last summer and shows a large body of pyritic ore.

Important Points in Kootenay.

AINSWORTH.

A FLOURISHING TOWN on Kootenay Lake, about eleven miles south of Kaslo. It was originally known as Hot Springs from the chalybeate Springs which issue from the side of the hill in the upper part of the town and which supplied the inhabitants with the most luxurious hot baths. It is one of the oldest and best-known towns in Kootenay and although nearly destroyed by fire the other day, will be quickly rebuilt. The population is constantly growing, and the mines, about four miles back, are steadily shipping, notably the No. 1 and Skyline. The Ainsworth Camp is fortunate in possessing, not only rich galena ores, but also, what are known as dry ores. These contain silver and iron but no lead, and are especially valuable in the smelting process.

MIDWAY

Is very generally yet incorrectly called Boundary. It is splendidly situated on a large plot of level ground, some six hundred acres in extent, and is well watered by the Kettle River and Boundary Creek. It will, without doubt, be the supply point and residential abode for the mines and miners of the rich surrounding camps, and a place of some importance.

NAKUSP.

This is the northerly terminus of the Nakusp & Slocan Railway, which runs into the rich Slocan country. It is situated on the east shore of Upper Arrow Lake, fifty miles from Revelstoke, and is the Canadian outlet for the Slocan ores, as much as 7,000 tons going out that way last year.

PILOT BAY

Is now a place of much importance to Kootenay, indeed to British Columbia, as the first smelter built in Kootenay, running ore and shipping bullion is located there. The main supply of ore that feeds the smelter is taken from the Blue Bell mine, about ten miles further north on Kootenay Lake, and which is also the property of the smelter owner, Mr. Hendryx. Buildings are steadily going up in Pilot Bay, and it will be the industrial depot of Kootenay Lake. Good stores, hotels, mails and local communications are all to be had. It might be added that the capacity of the smelter is 200 tons per day, and employs about 200 men. (See engraving in this issue.)

REVELSTOKE.

Situated on the Columbia River and on the main line of the C. P. R., Revelstoke is enviably blessed. Steamers may, and do, go down the Columbia and Arrow Lakes from Revelstoke to Northfield, over 200 miles, and here connections can be made with the Spokane & Northern Railway. It has exceptional advantages of communication, and is using them to the best advantage. There is a smelter, sawmill, also good stores and hotels; churches, schools, money order, telegraph and express

offices. It is the principal town of the North Riding of West Kootenay, and the celebrated Big Bend placer country is reached from here. In this issue we publish an interesting street scene in this thriving place. It is the connecting point with the Kootenay country for passengers coming over the C. P. R., and is therefore likely to be a very busy spot during the coming season.

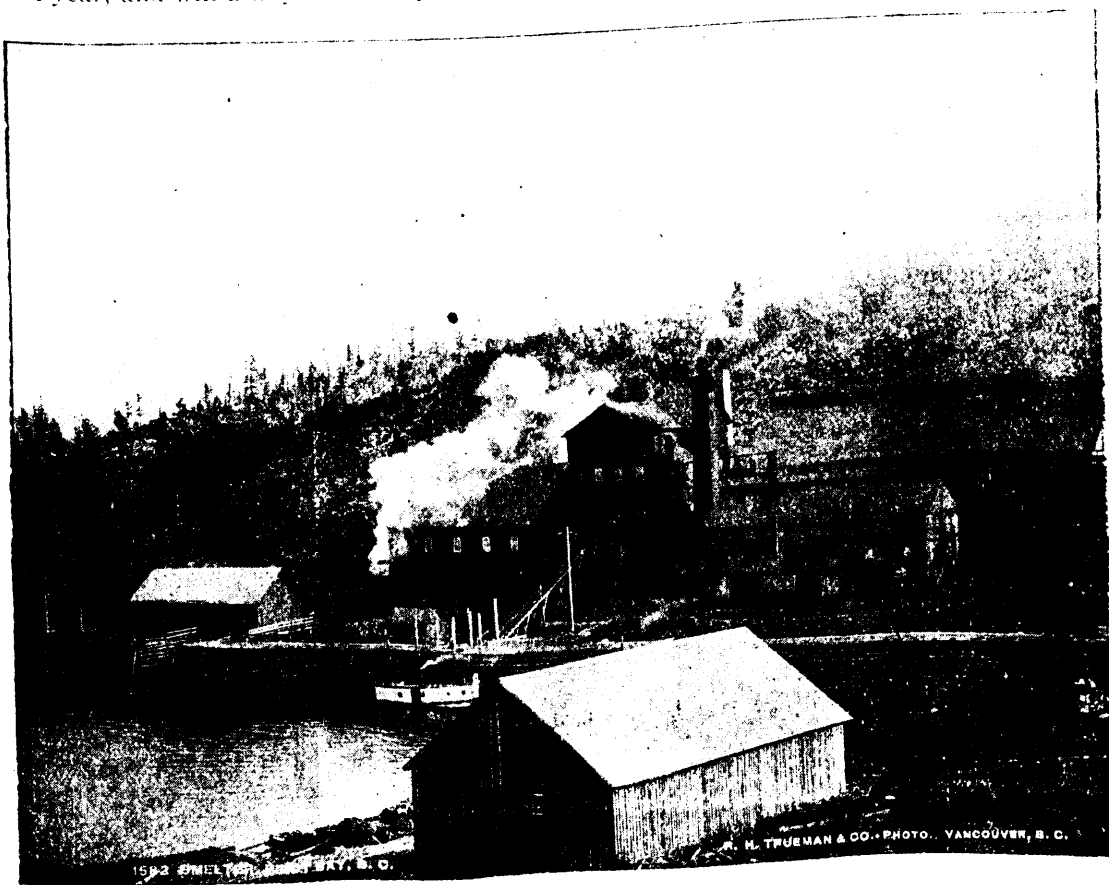
THREE FORKS.

In the heart of the rich Slocan, and with two railroads running into it—the Nakusp-Slocan and the Kaslo-Slocan—it has surely advantages enough to boast of. It is situated on the three forks of Carpenter Creek and is a rustling, busy, little town with good stores and hotel accommodations. Owing to the immense amount of labour performed in the building of the railways mentioned, Three Forks was about the busiest town in the Slocan last year, and will always be a busy one.

all the points in the Kootenay country, but as our efforts are not to be confined to one number, we will have opportunities to give fuller descriptions of many places and parts of the country which are not included at this time. We invite descriptive contributions from all sections of the mining districts and will be only too glad to publish them as the object of the journal is to attract the attention of capitalists and others to the vast and varied resources of the Province, in order, thereby, to aid in their development.

The Mining Lectures.

OWING to press of other matter relating especially to the Kootenay, we are unable to give in this issue more than one of the lectures delivered under the



SMELTER AT PILOT BAY, B. C.

TRAIL.

Is the present shipping port for Rossland, being situated on the navigable waters of the Columbia, and gave its name—Trail Creek—to the whole district around it. A new townsite has been laid out, which is in a most thriving condition. There are some who think it will rival Rossland, owing to its proximity to the water and shipping facilities. The town is connected with Rossland by means of a narrow gauge railway, and a smelter of which we give a view in this number, is in operation. Owing to the great richness of the country tributary to Trail, it is expected that other smelters will be erected there, as one will be unable to do the business. It is a rising town and is destined to become one of the most important in the Kootenays.

In the space at our command in one issue of the B. C. MINING RECORD, it is impossible to do full justice to

auspices of the Provincial Government. There are two lectures by W. Pellew Harvey to follow in order to complete the series, and both of these we hope to give in the June number of the RECORD.

The *Midway Advance* in speaking of these lectures says:—"The fourth of the series of lectures on mining which are being given by Mr. Carlyle, the Provincial Mineralogist, is published in the last issue of the MINING RECORD, the lecture is full of interesting and instructive data, but so long as these lectures are only listened to, and do not reach much beyond, an audience composed mainly of Vancouver office boys and clerks, naturally their utility must be very much limited. Why in the name of common sense, should the Provincial Mineralogist reside hundreds of miles from where, alone, his experience and knowledge might prove practically valuable. Under present circumstances Mr. Car-

lyle would have appeared just as useful and very nearly as ornamental to the Province were he still in quiet possession of the professional chair in Montreal. As well establish an experimental farm upon the dump of the Hall Mines at Nelson, as appoint an official mineralogist whose duties do not take him beyond the precincts of the coast cities."

We do not see the force of the argument put forward by the *Advance*. Mr. Carlyle is in charge of the Mining Bureau established by the Government, and in that capacity we do not well see how his headquarters could be anywhere but in Victoria. This, however, does not prevent Mr. Carlyle's services from being extended to all parts of the Province, which, indeed, as we understand it, they are to be. Mr. Carlyle's presence in the Province and the services he can render to mining is, we consider, of great importance to that industry and there is no use in attempting to belittle them. Mr. Carlyle will soon be going up country, and why not wait and see what his work throughout the Province will embrace and to what extent his usefulness will result before criticising? The great mining states of Colorado and California have the work of their bureaus centering at Denver and San Francisco, and in such central places, from which all parts are reached, has proven best to concentrate this work. Wait until the Provincial Mineralogist has had an opportunity of becoming better acquainted throughout the Province, and in a few weeks, we believe, he leaves for the Kootenay, where he will spend three or four months.

The enterprise of the B. C. MINING RECORD in publishing the lectures in full has been, we are glad to say, much appreciated by mining men in all parts of the Province, and we now contemplate publishing the whole series in pamphlet form.

Railway News.

AS SOON as arrangements can be made, the C. & K. S. N. Co. will have their steamers run four trips a week between Trail and Arrowhead. The company has a new steamer building at Nakusp, and when that is finished daily trips will be run between those points. This additional service is found necessary owing to the increased traffic in both passengers and freight.

Since the second engine arrived from Robson work has been progressing more rapidly on the Trail Creek tramway. The management hopes to have the railway in operation by May 15.

President Corbin authorizes the statement that the Columbia & Red Mountain railway will be built immediately. He expects to complete the road in four months. The Columbia River will be bridged at Northport just below the present cable ferry. Contracts for grading the line will be let immediately and the bridge will be commenced very soon. There will be a 200 foot tunnel at Sheep Creek Falls, otherwise the road could be finished at a much earlier date. The telegraph line will be extended to Rossland before the completion of the railroad.

Mr. W. D. Snodgrass, of Okanagan Falls, recently visited the coast, the object of his mission being to interview the C. P. R. freight officials regarding better rates to the lower country. He thinks he can convince them that it is to their advantage to look thoroughly into this matter, as he says at present the Northern gets the great bulk of the trade.

Says the *Rossland Miner*:—In our issue of March 15th we complained of the delay in receiving goods from Eastern Canadian points and cited two instances in which the C. P. R. was to blame for the delay. We have since learnt that in both cases the C. P. R. had "nothing to do with the case." In regard to the goods ordered in Winnipeg by us, we find that the order was made up in Toronto, a month after it was given, and was then shipped in bond over the Grand Trunk railway, arriving at Trail about ten days ago. It was just two months on the road. In the second instance cited, that of an hotel keeper who ordered a cooking range from Winnipeg, we have ascertained that it was the vendor of the goods who was responsible for the delay. He took two months to fill the order.

The *Miner* regrets that it should have done this injustice to the C. P. R. It is a corporation whose methods we do not generally indorse and we are therefore bound to be all the more careful in finding fault with it. The fact appears to be that the C. P. R. is making strenuous efforts to secure the quick delivery of freight at points in West Kootenay and is succeeding in this better than its rivals.

Notes.

THE Dominion Developing and Mining Co., with half a million dollars of capital, the greater part of which is subscribed on the Coast, is now busy looking over the ground with the view of proceeding with development work this season. Parties having propositions to make should not fail to communicate with this company through their secretary as they are in a position to entertain bona fide proposals. The company is a strong one as will be seen from the following list of directors: Hon. W. H. Montague, Minister of Agriculture, Ottawa, Ont.; Jonathan Miller, Esq., postmaster, Vancouver, B. C.; John Hendry, Esq., president B. C. M. T. & T. Co., Ltd., Vancouver, B. C.; D. L. Lockerby, Esq., wholesale grocer, Montreal; B. Douglas, Esq., justice of the peace, New Westminster, B. C.; Jno. MacQuillan, Esq., manager Dominion Building and Loan Association for B. C., Vancouver, B. C.; J. J. Banfield, Esq., Financial Broker, Vancouver, B. C.; Jno. T. Carroll, Esq., M. D., Reeve of North Vancouver, Vancouver, B. C.; F. R. Stewart, Esq., wholesale commission merchant, Vancouver, B. C.; R. A. Pyne, Esq., M. D., Registrar College of P. & S., Ontario, Toronto, Ontario. Shares in this company should prove to be a good investment.

We would call the attention of our mining men to the advertisement of Macfarlane & Co., Vancouver, who are now keeping a large stock of articles required in assaying, etc. The establishment of Messrs. Macfarlane's business in Vancouver will be a great convenience to those in the mining districts who wish to keep their stock of assay articles replenished from time to time.

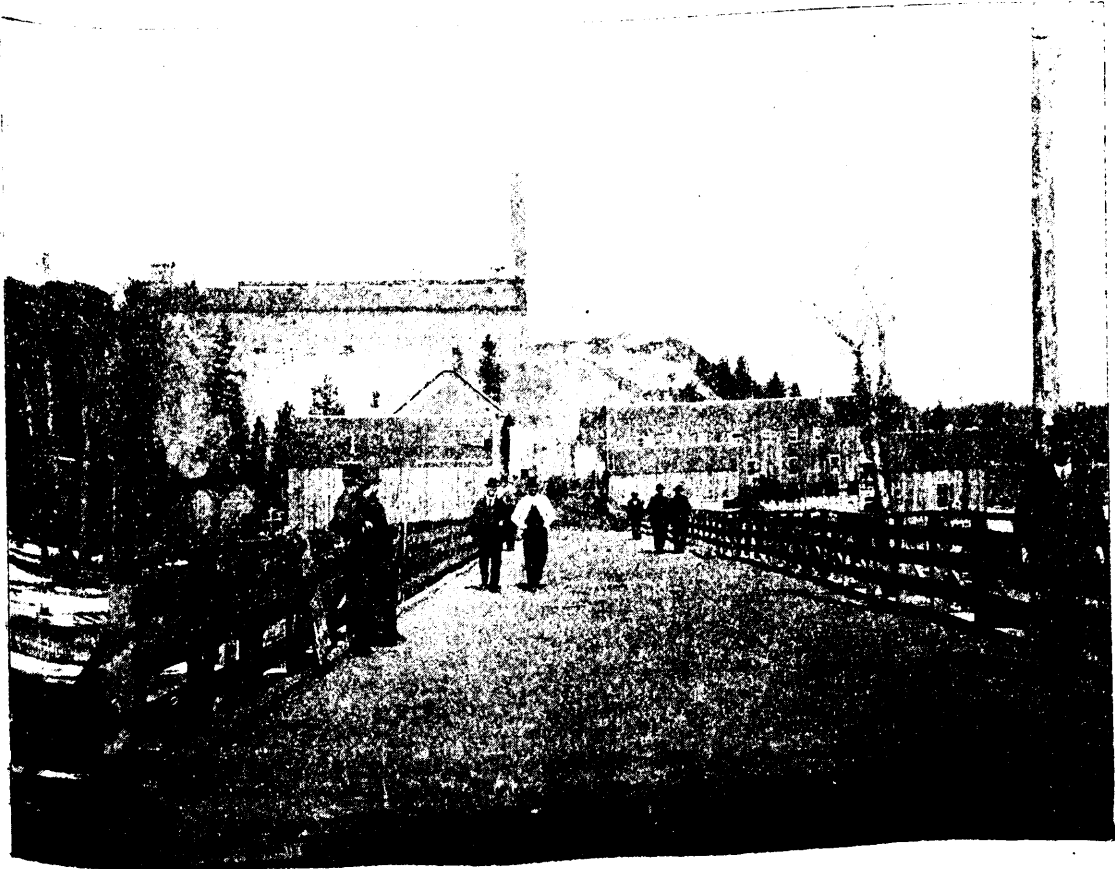
A Vancouver syndicate which was organized by C. S. Douglas, Mining Broker of Vancouver, has secured five valuable claims in "Ground Hog Basin," on French Creek, Big Bend District, and will do development work on them this summer. Assays of rock from the several claims run from \$6 to \$90 in gold to the ton, the lower assay being from a quartz ledge 20 feet wide, while the higher assays were from veins of fair width. Experts who have examined the rock—notably Mr. Clemes, the

English expert—say it is the best looking quartz they have seen in the Province.

The Bank of Montreal, alive to the increasing importance of the Kootenay District, is establishing branches wherever in the opinion of the bank they are warranted. A branch has been in operation for some time at Nelson, and now another has been established at Rossland. Mr. A. H. Buchanan, the manager at the former place, is at present acting at the latter until such time as a permanent manager is appointed at Rossland which will be shortly. The Bank has also a branch at Vernon under the management of Mr. G. A. Henderson. In Vancouver the Bank of Montreal building is, probably, the handsomest of the kind in the city, and under the management of Mr. C. Sweeny is now the leading financial institution on the coast, as the Bank of Montreal itself is the greatest of the Canadian Banks.

The office and entrance to the works are on Kearny street, near the corner. This ground was purchased by the late Mr. Joshua Hendy in 1888, and the buildings were completed and occupied about the close of that year. The frontage on Kearny, between the corners of Bay and Francisco streets, is 275 feet, and running west nearly to Dupont street.

A capacious entrance and driveway is midway on Kearny street, on the north side of which is a commodious office, and on the second floor an airy drafting room. Beyond this, separated by a covered driveway, are the engine and boiler rooms, and still beyond the blacksmith forges, and above all these the pattern shops. To the north of the office and engine-room is an open space running to Bay street corner, for the storage of boilers and machinery not affected by the weather; to the west of this is a wide and long 4-story building especially and substantially built, covering a capacious



SMELTER AT TRAIL, B. C.

A Complete Establishment.

IN San Francisco, on the corner of Kearny, Bay, Dupont and Francisco streets; at North Beach, west of and near section 1 of the seawall reached either by the water front boulevard or the Kearny street line of electric cars, stopping at the corner of Powell and Bay streets and walking eastward along Bay three blocks to the corner of Kearney street, is located one of the most complete manufacturing plants west of Chicago, and in many respects equal to any in the country. Occupying almost an entire block, the shops of the Joshua Hendy Works are complete in every respect, and workmen are at the present time engaged in overhauling and preparing the plant, making it ready for an expected busy season.

machine shop. The stores above are devoted to lighter work, warerooms, and general purposes, all of which are available and accessible by passenger and freight elevators.

The foundry proper is one of the largest on the coast, fitted with cupolas, furnaces, cranes, and all the necessary appliances for casting every description of light and heavy ironwork, and it is here that engines, mining and saw mill machinery of all kinds are built, and the line of patterns carried by the company are complete. The machine shops are fitted with the finest machinery that is manufactured, and here are turned out the celebrated Challenge ore feeders, the newly improved Triumph concentrators and mining machinery of all kinds. A complete saw mill machinery department is now being arranged, where the latest improved band mills, circular mills, edgers, head-blocks, in fact every kind of machinery and appliances used in saw mills will be built.

Mr. Frank H. Loftis, who is to have charge of this branch of the business, is well known as one of the best saw mill builders, and here with the latest facilities, he will be prepared to fit out mills of any capacity. Situated as these Works are, far from the center of business, but accessible by street railways, few are aware of the size and facilities of this plant, but it is prepared to turn out the best of work in the shortest possible time, and in a manner bound to give satisfaction.

The salesroom and principal office of these Works are at 42 Fremont street, where samples of their own machinery can be seen, besides that of other manufacturers for which they are agents.

The Coal Mines.

THE following is the list of foreign shipments of coal from the mines of Vancouver island for the month ending April 30:—

NEW VANCOUVER COAL COMPANY.

Date.	Name and Destination.	Tons
4—	Str. Peter Jebson, San Diego	4,799
4—	Str. Willapa, Juneau	16
8—	Str. City of Everett, 'Frisco	3,902
8—	Str. Sea Lion, Port Townsend	41
9—	Ship St. John, 'Frisco	2,706
9—	Str. Wanderer, Port Townsend	62
12—	Bark Gen. Fairchild, 'Frisco	2,280
12—	Str. Sea Lion, Port Townsend	51
13—	Str. Willapa, Port Townsend	66
17—	Str. Willapa, Juneau	20
21—	Str. City of Everett, 'Frisco	3,948
22—	Str. Peter Jebson, Los Angeles	4,664
27—	Str. Willapa, Port Townsend	58
29—	Str. Pioneer, Port Townsend	45
29—	Str. Holyoke, Port Townsend	70
29—	Str. Wanderer	64
Total, April		22,792
" March		14,309
Increase, April		8,483

UNION COLLIERIES.

4—	Str. Alice, Alaska	5
4—	Str. Progressist, Los Angeles	3,826
4—	Str. Wellington, 'Frisco	2,400
11—	Str. Transit, Seattle	594
11—	Str. Mineola, Los Angeles	3,100
11—	Str. San Mateo, 'Frisco	4,200
25—	Str. Rapid Transit, Seattle	247
25—	Str. Mexico, Sitka	200
25—	Str. Mineola, 'Frisco	3,100
Total, April		17,664
" March		21,080
Decrease, April		4,416

WELLINGTON COLLIERIES.

4—	Str. Umatilla, Seattle	1,150
7—	Str. Al-Ki, Port Townsend	350
8—	Str. Costa Rica, 'Frisco	2,550
13—	Str. Wellington, 'Frisco	2,600
16—	Str. Discovery, Vancouver	27
22—	Str. Progressist, 'Frisco	4,000
24—	Str. City of Pueblo, Seattle	800
27—	Str. Al-Ki, Port Townsend	200
39—	Str. Willamette, 'Frisco	2,450
Total, April		10,127
" March		14,309
Decrease, April		4,182

Through an oversight of the printer, the illustration on Page 17 was printed as "Street Scene in Rosslund" in about one-half of this edition. It should have been "STREET SCENE IN REVELSTOKE."

An Enterprising Journalist.

MR. A. B. GRACE, the publisher of the Fort Steele *Prospector* is one of the most enterprising journalists on the Pacific Coast, as will be seen from the following clipping taken from the *Fourth Estate* of New York:—"Mr. Grace is a versatile genius, and combines with his editorial and reportorial accomplishments that of an artist of no mean order. The paper is issued without type or press. It is turned out on an Edison mimeograph, and the work is of a high order of excellence. The entire paper, with the exception of sketches and diagrams, is type written. The general effect is pleasing and the sheet is more easily read than many papers gotten out in the regular way.

The Christmas number is particularly interesting and would attract attention anywhere. It is filled "plumb" full of mining news of interest, descriptions of mine-development work going on, sketches in and around Fort Steele, etc. The advertisements are novel, and if they do not attract the attention of the reader it is certainly not the fault of the publisher.

In his issue there appears a comprehensive and concise write-up of the mining division of Fort Steele, defining its boundaries and making known the capabilities of that section and what is being done to promote the mining industry."

In answer to a request from the RECORD for some particulars in regard to his mode of publishing the *Prospector* and the origin of the paper, Mr. Grace writes us as follows:—"The *Prospector* was started early in November, 1895, and this week's issue was its 25th number. Its object is to give the outside world as much information as possible of the vast mineral resources of the Fort Steele mining division of East Kootenay. Situate as we are 160 miles from railroad communication, and with only a weekly mail-communication by water only possible for about five months in the year, there is no means of conveying to the outside people, "except by private letter," what we had in the shape of mines or mineral, how we were situated or how to get here. Winter coming on and having nothing to do, I thought I would use the typewriter and mimeograph as a medium to distribute all the information possible of the district. The *Prospector* has an actual subscription of 345 subscribers; our foreign list outside of Fort Steele numbers 260 copies, many going to England and the United States, reaching from the Pacific to the Atlantic on both sides of the international boundary. Another reason for the use of the mimeograph was the fact that it was possible to insert sketches, maps and charts of the mines and objects of interest in the vicinity of much importance to mining men in general. The mimeograph belongs to the stencil class of duplicating machines, being well known as the best type of such devices. The stencil is made on a sheet of specially manufactured tissue paper, which is coated on one side with a film of sensitive material. The cutting agent of the mimeograph is a plate of fine tool steel, upon which are cut intersecting corrugations, numbering 200 to the inch, thus making on the plate a surface of small, sharp points, so fine and minute that a magnifying glass is required to bring them distinctly to the eye. Upon this steel plate the sheet of paper is placed, and the stencil is formed by writing or drawing on the paper over the steel plate with the stylus, which is made of tempered steel. As the stylus passes over the sensitive paper, it presses the paper against and upon the

steel plate, and the fine sharp points puncture it from the under side, making a series of orifices or holes, each one a two-hundredth part of an inch from the next, in the line of writing. The type writer stencil is made by laying the stencil paper upon a sheet of perforated silk, and placed in the type writer, as you would an ordinary letter sheet. The stencil is then placed in a printing frame, and the copy made by passing over the stencil sheet a roller well inked, making a perfect duplicate of the stencil. I have printed over a thousand impressions from one stencil, and can print as fast as the ordinary hand printing press. I print the regular issue of the *Prospector*, four impressions, 375 copies, in five hours. The setting up of the stencil is faster than type composition. Extracts from the *Prospector* are copied by the principal mining papers on both sides of the boundary, in the Northwest and in many Eastern journals."

Produce of the Mines.

RETURNS FOR 1896 UP TO MAY 2.

ORE TREATED IN KOOTENAY.	
At Nelson	5,793
At Pilot Bay	11,066
	16,769
ORE EXPORTED.	
From Slocan via Kaslo	4,625
Slocan via Nakusp	2,493
Trail Creek (gold ore)	3,085
	10,203
Total Tons	26,972

PRODUCE OF SMELTERS.

Nelson (Hall Mines) matte	596
Pilot Bay, silver lead bullion	822
Trail Smelter	88
	1,506 tons.

SHIPMENTS FOR APRIL PER KASLO & SLOCAN RAILWAY.

MINE.	DESTINATION.	LBS.
Slocan Star,	Pueblo	540,000
Northern Belle,	East Helena	30,000
Last Chance,	Smelter	30,000
Wellington,	Everett	30,000
Antoine,	Everett	30,000
Ruth,	Pueblo	120,000
Ruth,	Smelter	120,000
Lucky Jim,	Omaha	60,000
Slocan Boy,	Smelter	30,000
Lucky Boy,	Pilot Bay	6,000
Whitewater,	Everett	180,000
Lucky Jim,	Conc, 3 Fks.	120,000

A Simple and Effective Gold Saving Machine.

WE HAD the pleasure the other day of witnessing the working of one of the best gold saving machines on the market. At 150 Water Street, Vancouver, a full sized machine was in operation when we visited the premises, and it at once struck us that it was just the thing required by men of small capital who proposed working on the Fraser or any other rivers in British Columbia. It is very simple and easily driven—even by hand—and we feel assured will do what is claimed for it—"save every color of gold passing through it." It is light in weight, inexpensive, and will get through with twenty-five tons per day, which is a good showing for so small a machine.

Its efficiency in gold saving has already been satisfactorily tested in California, and a further test will be made immediately on the Thompson River under the supervision of a reliable man, the returns from which will be made public in the June number of the B. C. MINING RECORD. Meantime enquiries in regard to the machine, its workings and capabilities, will be cheerfully answered by applying to Mr. Finley McIntosh, 150 Water Street, Vancouver, and we would recommend parties interested to apply to him, as it will well repay them to do so.

Latest From Big Bend.

THE FOLLOWING was received too late to appear in the article on Big Bend:—"The latest piece of good news for Big Bend comes in the shape of a report from Chicago that Messrs. Wm. Kirkup & Atkins have succeeded in interesting capital to the extent of two million dollars for sinking placer claims on French Creek, including the well-known Consolation and Gold Hill; a company having been formed in the Windy City for the purpose of prosecuting a vigorous overhaul of the rich auriferous gravel in various parts of the Big Bend country. This will have a stimulating effect on the whole of North Kootenay, and we may expect to see the Revelstoke district waking up at last under the beneficent influence of the vast amount to be expended there and the large returns which are assured from Big Bend gravel when exploited in a systematic manner."

A Splendid Showing.

THE FOLLOWING announcement has been made by the directors of the Hall Mines Company. When it is considered that the smelter was running only part of the time it will be admitted that the returns shown are indeed most gratifying. It is returns such as these from our mines that will bring capital flowing our way. The shares of the company, it is needless to say, are on the rise.

From the Hall Mine Offices,
1 Leadenhall St., E. C. London, April 16, '96

The directors have pleasure in placing before the shareholders the result of the smelting operations for the month of March, as follows:—2,102 tons of ore were smelted, yielding 212 tons of matte, containing (approximately) 106 tons of copper and 76,113 ounces of silver.

By order,
F. RAMSAY, Secretary.

An admirable opportunity is given by one of our leading private educational institutions at Vancouver for the student of nature to exchange flowers, bugs, rocks, etc., for a general, commercial, or musical education. With the abundant wealth of these bits of nature at our very doors, and the best season in all the year for gathering them, no doubt many of our young people will gladly make the exchange desired. Collections, we understand, are desired from any part of British Columbia.

Our London (England) Agents.

Messrs. Gordon & Gotch, St. Bride Street, London, England, will hereafter act as the Agents of the British Columbia MINING RECORD in Great Britain, and are authorized to receive subscriptions and advertisements for this Journal.

Happenings at the Mines.

ALBERNI.

A. R. HEYLAND returned recently from Alberni after having inspected the work on the Nanaimo-Alberni Company's proposition, for the purpose of presenting a report to the directors.

"I went up China Creek," said Mr. Heyland in giving a brief account of the trip, "and struck the Cataract Hydraulic Claims, where they are putting in a mile and quarter of fluming. This is a solid structure four by two. A fine dam costing \$2,000 has been built, the banks being 200 feet in height. Both the Cataract and the Duke of York, which I visited afterwards, have sawmills of their own. The flume at the last named claim is six by two, is composed of sawn lumber, and encircles the bluffs from forty to fifty feet in height. From there I went on to the Constance which is the property of the Nanaimo-Alberni Gold Mining Company. A shaft is being sunk to bedrock with the intention of putting in a long drift across the flats, this claim being the only one with flats on it; all the rest are benches. The Nanaimo-Alberni Company own about 300 acres and the gravel benches all show gold. At bedrock on the Constance Claim coarse gold was found in one shaft, and at Williams Creek they are still staking off claims.

I also visited the Alberni Consolidated Company's mines, where for a distance of 30 feet sunk on the ledge, the latter has widened from fifteen inches to three feet six inches, and gold is easily perceptible in the rock. Picked specimens would go about \$1,000 to the ton. The prospects for the district generally are unmistakably good; both hydraulic and quartz claims are doing well, prospectors are staking off ledges all the time, and a hopeful feeling prevails everywhere.

The fact of gold being discovered in the Nanaimo-Alberni Gold Company's District is the more satisfactory inasmuch as it furnishes an almost safe indication that more country of a similar character will be found on this side of the divide, which implies an immense advantage to Nanaimo."

ASHCROFT.

It is expected there will be through stages twice a week from now on carrying mails both ways.

Cataline's pack train of 36 animals is loading for the Peace River Country. After this he packs from Quesnelle up. The distance to be packed from Ashcroft to his destination is about 420 miles.

The outlook at present would indicate that much freight will be taken into Lillooet section during the coming summer and autumn. It is expected that machinery for the Lillooet quartz mines will be shipped at no distant date.

It is reported that a contract for hauling the Cariboo Gold Fields Company's pipe has been let to Contractor Bambridge, and that 250 draft horses will be sent in to do the work. The price paid is not reported, nor is the news of the contract being let as yet confirmed. It is thought, however, by those best informed, to be true.

Charles Skinner, who has a large meadow near Tatlow Lake, reports quite an excitement over the quartz mines. Mr Skinner visited the ledges and reports that twelve men are in there now. Cinnibar, quartz and copper are the minerals found there. He says that there is almost to much snow on these ranges of mountains for much prospecting.

AINSWORTH.

Clark and Van Hook have made a shipment of ore twelve tons of ore to the Pilot Bay smelter from the Tariff, and expect to make another shortly.

We hear that a piece of quartz was picked up within a mile of Ainsworth. It contains a quantity of free gold and was estimated to be worth about \$4,000 per ton. Mr. F. Fitch, who picked it up, is now trying to locate the ledge.

BIG BEND.

Two benches on Carnes Creek were located lately by Messrs. Wolcott and Grainer. They are very accessible hydraulic propositions and no doubt rich, as the locations panned out a considerable number of colors from dirt raked here and there. The locations are each 88 acres.

It is reported that Wm. Kirkup and George J. Aitkins have closed a big mining deal with Chicago capitalists who have organized the French Creek Hydraulic Mining Company with \$2,000,000 capital. It is also said, and is believed to be true, that a contract has been let for \$50,000 worth of pipe and machinery.

CARIBOO.

Work is beginning on all the hydraulic claims. Weather is fine and the snowfall gives a promise of an usually good supply of water for the season.

Gangs of men are at work shovelling snow out of the ditches tributary to the Mosquito Creek Hydraulic Mines. This work requires to be done every spring, and in the case of the Mosquito Creek Claims occupies as much time and is as expensive as the working of the claims during the piping season. Similarly the Gold Flake Company's men are removing the snow from the company's ditches.

GOLDEN.

Capt. Armstrong has commenced to bring his ore from the Vernon Creek silver mine, per steamer Dutchess, to Golden, and will ship it from here to one of the smelters.

The steamer Duchess on her first trip of the season found the water low for this time of year. She had a very large amount of freight, including machinery for the Wild Horse Hydraulic Mines.

KASLO.

The records show that the prospecting season has commenced. Several claims in the Salmon River District have been located.

The Kaslo & Slocan Railway are sending out four or five parties of surveyors to finish the taking up of their land grant in two weeks.

Mr. George Gooderham, who is president of the Bank of Toronto, is considering the advisability of establishing a branch of the bank here. He will probably return to Kaslo before long.

There are eleven men working on the Antoine. On account of the water the work will be closed down in a few days. Five carloads of ore have been shipped during the winter.

There are about twenty tons of ore a day coming from the K. and S. now. Owing to the danger from slides and bad roads most of the mines are not shipping now. The trains are running on time.

Work on the Texas, on Springer Creek, owned by Garland, Papwork & Co., is stopped. They have shipped ten tons of ore and are in 65 feet on the new tunnel. They expect to strike the ledge in 125 feet more.

NANAIMO.

It has been learned that it is the intention of the Dunsmuirs to close down the Wellington Mines, with the exception of the levels, and that it is further intended to abandon Wellington almost entirely. The report further states that the men now engaged at Wellington will be given employment in the Alexandra Mines, which are to be opened up on a more extensive scale, so that a large number will thus find employment.

NEW DENVER.

In New Denver, during April, more than a quarter of a million dollars worth of mining claims were bonded. Most of the properties are in the dry ore belt at the foot of Slocan lake.

Work was sustained on the Howard faction all winter. One shipment of eleven tons of ore was made which after paying all expenses, including packing from the mine to the lake, netted over \$100 per ton.

At the Enterprise, on Ten Mile Creek, the Finch syndicate has now driven over 500 feet of tunnels and they have never been out of ore. It is estimated that they have enough ore in sight to pay for the property and monthly dividends after they begin to ship.

A rich strike has also been reported from Three Forks on an extension of the Grey Eagle, recently incorporated by S. M. Wharton. The ore is said to run from 300 to 400 ounces in silver per ton. This discovery has caused quite a number of New Denverites to purchase small blocks of Grey Eagle stock.

NELSON.

The shares of the Hall Mines, Limited, are now quoted at \$7.50. Six months ago they were unsaleable at \$3.50.

It is reported that the shaft being sunk on the Blue Belle Mine develops 22 feet of ore of better grade than any yet found in the vein. The ore is so clean it requires no concentrating.

The lower tunnel of the Silver King Mine is being advanced six feet a day; machine drills are used. One hundred men are now employed.

The Hall Mines Smelter commenced on its third run the other day, and about 115 tons of ore a day run through. The tramway is delivering on an average 140 tons of ore a day, and working successfully.

The Nelson Hydraulic Company's ground and plant on Forty-nine Creek, eight miles southwest of Nelson, have been leased to D. W. McVicar and others of Ainsworth, and work has already commenced. It is understood the lease is on a basis of 25 per cent. of the gross output as rental.

Eighty-five men are at work at the Silver King Mine, and the force will be increased next week. First-class miners alone are needed. The present output is about 80 tons daily, but there are several thousand tons on the dump and in the ore bins. The upper section of the tramway handled 513 tons in four days this week, working eight hours a day.

QUESNELLE.

Chinese with rockers are washing gold near the mouth of Quesnelle River, and are reported to be making \$4 a day.

Col. Underwood's dredge has been removed above the bridge and is being put rapidly in a condition to begin early operation. In about two weeks the machinery will be all in.

REVELSTOKE.

A visit to the Revelstoke smelter, long in disuse, discloses the fact that it would not need much outlay or expense to put in repair. But if it is to be worked at all, immediate steps are necessary to prevent its being entirely swept away. It is built on the river bank, which is yearly being eroded by the stream, and if (and there is great reason to fear it, as there is so much snow on the hills) the river is at all swollen it will surely go completely into the stream this year.

ROSSLAND.

The Blue Elephant is opening up nicely. E. W. Liljegran has four men at work, and has an open cut driven in on the ledge about 30 feet. It shows about five feet of silicious ore all the way in the bottom. The ore runs about 5 per cent copper.

Work is progressing rapidly on the Georgia. The tunnel is now in 16 feet and shows 8 feet of ore of a satisfactory grade. A 3-drill compressor plant has been purchased from the Rand Drill Company and power drills will be at work soon. It is the intention to replace this plant by a larger one at an early date.

Montreal is now a large holder of Rossland mining stocks and promises soon to rank close to Spokane and Butte in this respect.

Outlying portions of the mineral belt are coming to the front. It is only a short time since the Jumbo was thought to be outside the ore zone and the Lily May was considered but a poor prospect. Now both are in a fair way to make great mines.

The face of the north cross cut in the Centre Star looks like a jeweler's shop. They have now got four feet of as beautiful copper ore as ever was seen in this camp. They are still about 40 feet from where they expected to tap the north ledge, and of course cannot tell whether they are into it yet or not.

A company was incorporated in Spokane with \$500,000 capital. Its sole assets consist of a fractional claim in the camp, which was sold two weeks ago for \$150, and is certainly not worth more than four or five times that sum. And yet some brokers have actually listed it.

TRAIL.

There is talk of very important additions to the smelter, but so far the authorities say nothing for publication. The present building is large enough for two more reverberating furnaces, and men are engaged building them. A plant will be put in to crush the matte for shipment. Heretofore this work has been done in the sampling room, but that has entailed considerable extra work.

TROUT LAKE.

Supplies are being packed in to the Abbot Group. Work is being steadily pushed along with three shifts.

Tunnelling is in progress in the Great Northern. A goodly pile of ore is now on the dump.

A tunnel to tap the vein at a lower level will be started as soon as snow goes off upon the Silver Cup.

VERNON.

Some of the best looking quartz that has been brought into town for some time came up from the Mountain View claim on the west side of Okanagan Lake, near Camp Hewitt. Mr. John Craig, one of the owners of the claim, has very great faith in its richness, and work will be steadily pushed ahead on it during the summer.

A Good Printing Company.

THE B. C. MINING RECORD is printed at the office of the Commercial Printing Company of New Westminster, and we wish to bear witness to the excellence of the work turned out by them as well as the satisfactory manner in which our business with them has been conducted by the employees of the company. We have found it to be one of the most pleasant and satisfactory offices we ever had dealings with.

We have had several enquiries in regard to field glasses, magnifying glasses, &c., for the use of prospectors and others in the mining districts. Messrs. Clarke & Stuart, of 28 Cordova Street, Vancouver, gave us prices and lists to send to our correspondents. They have a very complete stock from the best makers, and parties requiring anything of this kind should write to them direct. It is an advantage to people in the interior to be able to obtain these articles near at home without the necessary delay of sending a long distance for them.

CATALOGUES RECEIVED.

A supply of handsome catalogues, price lists, and other information has been received by the Purchasing Department of the RECORD from the following firms, and copies will be mailed free to any of our subscribers who may desire to obtain information as to the latest and best mining machinery, etc., etc.

The following catalogues have been received up to this time: Joshua Hendry Machine Works, Mining Machinery of all kinds.

The Giant Powder Company, Explosives.
 Shelton & Co., Vancouver B. C., Furniture.
 Merrall's Hydraulic Quartz Mills.
 The Pelton Water Wheel.
 Goodyear Rubber Co., Rubber Goods.
 Union Iron Works, Machinery.
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 Fraser & Chalmers, General Milling Machinery.
 The Metallic Roofing Co., Steel Shingles.
 H. W. Petrie, Machinist and dealer in Machinery.
 James H. Lancaster, Dredging and other Mining Machinery.
 Northey Manufacturing Co., Ltd., Pumping Machinery.
 Girard Water-wheel Co., Water-wheels.
 M. C. Bullock Manufacturing Co., Diamond Drills, &c.
 H. W. Caldwell & Son Co., Elevating Machinery, &c.
 Edward P. Allis Company, Mining and Milling Machinery.
 J. J. Norman Company, Gas and Gasoline Engines.
 Sullivan Machinery Co., Diamond Prospecting Drills.
 Electrical Engineering Co., Dynamos and Motors, &c.
 Canada Paint Co., Paints, &c.
 William Hoskins & Co., Hydro-Carbon Blow-pipes, &c.
 Gutta Percha and Rubber Manuf'g Co., Rubber Goods.
 The Dominion Wire Rope Co., Wire Rope.
 Dodge Wood Split Pulley Co., Pulleys.
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 The Goulds Manufacturing Co., Hydraulic-Machinery.
 Marvin Electric Drill Co., Electric Drills, &c.
 Western Plating and Manuf'g Co., Amalgam Plates, &c.
 D'Este & Secley Co., Engineering Specialties.
 Robert Aitchison Perforated Metal Co., Perforated Metals.
 Jos. Dixon Crucible Co., Graphite Lubricators, Crucibles.
 The Connersville Blower Co., Blowers, &c.
 Henry R. Worthington, Hydraulic Machinery, &c.
 The Jeffrey Manufacturing Co., Chain Belting, Mining Locomotives, &c.
 The Philadelphia Engineering Works, Ltd., Engines, Air Pumps, &c.
 James Leffel & Co., Water-wheels, &c.
 Wm. Jessop & Sons, Special Steel.
 James McBeth & Co., Electric Blasting Apparatus.
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Hotels.

BRITISH COLUMBIA is fortunate in possessing one of the finest sanitariums in Canada. The St. Alice and Bath hotels at Harrison Hot Springs, both under the same management, are not only delightful resorts for pleasure, but the wonderful healing powers of the hot springs make them specially desirable for health seekers. In the bathing department the baths are all porcelain lined and there are a number of skilled male and female attendants.

Attached to the hotels is a medical department in charge of Dr. H. J. Philpot so that guests are well cared for in this particular.

The fishing and hunting in the neighborhood are excellent and on the lake steam, sailing and row boats are provided for the use of those staying at the springs.

Altogether it is one of the most delightful spots to stop over at, and travellers and tourists visiting British Columbia should certainly not fail to make a stay of at least a few days.

Stages meet all trains at Agassiz station on the C. P. R. and from there a delightful drive of five miles over a good road brings passengers to the springs.

The Manor House, Vancouver, continues to increase in popularity, especially amongst mining men, many of whom have been staying there lately. From all we can hear the hotel is in every way deservedly popular.

The looked for opening of the Van Winkle Claim across the river from Lytton has not taken place yet. It was expected that the waters of Stein Creek would be brought on this spring, and with a large head of water this big property might be made to pay. The matter is still under consideration, but there is no likelihood of anything being done this season.

The Bank of British North America has established a branch at Rossland with Mr. Oliver, formerly of Vancouver, in charge. No sooner was this move made than the Bank of Montreal followed suit, with Mr. Finucane, of the Nelson branch, nominated as manager.

MINING CENTRES IN BRITISH COLUMBIA

—AND—

HOW TO REACH THEM.

ALBERNI.

Alberni.—Steamboat communication with Victoria and by stage with Nanaimo.

Barclay Sound.—Forty miles from Alberni; communication by steamer with Victoria.

CARIBOO.

Barkerville.—Two hundred and eighty-five miles from Ashcroft; stage from Ashcroft. See stage lines.

Bonaparte.—Twenty miles from Ashcroft; stage from Ashcroft.

Big Bar.—Stage from Ashcroft.

Clinton.—Thirty-two miles from Ashcroft station; stage from Ashcroft.

Fort George.—Nearest post office, Quesnelle, where stage to and from Ashcroft changes.

Horsefly.—Nearest post office, 150-Mile House; stage from Ashcroft; change at 150-Mile House.

Lac La Hache.—One hundred miles from Ashcroft; stage from Ashcroft and Barkerville.

Lillooet.—Weekly stage from Clinton, where connection is made with stage for Ashcroft.
Lightning Creek.—Between Quesnelle and Barkerville, by stage.
One Hundred Mile House.—Stage from Ashcroft.
One Hundred and Fifty Mile House.—Stage from Ashcroft.
Quesnelle.—Two hundred and twenty-five miles from Ashcroft; stage from Ashcroft.
Quesnelle Forks.—Stage and pack trail from Ashcroft.
Soda Creek.—Stage from Ashcroft.
Slough Creek.—From Barkerville, twelve miles.
Talia Lake.—Stage from Ashcroft, changing at Soda Creek.
Willow River.—Stage to Barkerville or Stanley, thence rail.
Williams Creek.—From Barkerville, seven miles.

CASSIAR.

Dease Creek.—
McDame Creek.—

COAL CENTRES.

Crow's Nest Pass.—
Nanaimo.—From Victoria, all rail, 73 miles. Steamer from Vancouver.
Union.—
Wellington.—From Victoria, all rail, 83 miles. Steamer and rail from Vancouver.

EAST KOOTENAY.

Cranbrook.—Nearest railway station. Golden. Communication by steamer from Golden to Windermere, thence by stage.
Fairmont Springs.—Nearest railway station, Golden. Steamer to Windermere, thence by stage.
Fort Steele.—Steamer and road from Golden. Steamer from Jennings, Montana, G.N.R.R.
Galbraith Ferry.—Steamer from Golden. Stage in winter.
Galena.—Nearest railway station, Golden; thence by steamer. Stage in winter.
Golden.—On the main line C.P.R., 475 miles from Vancouver.
Moyie River.—From Fort Steele, 25 miles.
McMurdo District.—Steamer and trail from Golden, 35 miles.
Perry Creek.—Steamer from Golden to Fort Steele, thence by road.
St. Mary's.—From Fort Steele, 20 miles, trail.
Thunder Hill.—One hundred and fifteen miles from Golden. Steamer in summer, stage in winter.
Windermere.—Steamer from Golden. Stage in winter.
Wild Horse Creek.—From Fort Steele, two miles trail to Kootenay river.

WEST KOOTENAY.

Ainsworth.—Twenty-eight miles from Nelson and twelve from Kaslo. Steamer communication.
Albert Canyon.—A station on the C. P. R., 400 miles from Vancouver.
Big Bend District.—Fifty miles from Revelstoke by trail and boat.
Cariboo Creek.—Steamer from Nakusp, ten miles.
Fort Shepherd.—Nearest post office, Trail Creek; communication by rail and steamer from Revelstoke.
Illecillewaet.—On the main line C. P. R., 407 miles from Vancouver.
Kaslo City.—Thirty-five miles from Nelson; communication by steamer.

Lardeau City.—Forty miles from Revelstoke; communication by steamer.
Lardo-Duncan.—Steamer from Kaslo to head of lake, thence river trail 40 miles.
Nakusp.—North-west terminus of Nakusp & Slocan Railway, 50 miles from Revelstoke. Steamer communication from Revelstoke tri-weekly.
Nelson.—Thirty miles from Robson; is the eastern terminus of the Columbia & Kootenay Railway, and also on the Spokane & Northern Railroad. Steamer from Revelstoke.
New Denver.—Steamer from Revelstoke and rail from Nakusp; all rail from Kaslo. Distant from Revelstoke, 78 miles, from Kaslo, 28 miles.
Pilot Bay.—Eighteen miles from Kaslo, thence by steamer.
Revelstoke.—On main line C.P.R., 379 miles from Vancouver.
Rossland.—Seven miles from Trail Creek by road or stage.
Sproat's Landing.—One hundred and sixty miles from Revelstoke, and one and a half miles from Robson.
Springer Creek and South Slocan Camps.—From New Denver by steamer, twenty miles.
Sandon and Cody Creek.—All rail from Kaslo, 29 miles. Steamer and rail from Revelstoke via Nakusp and Three Forks. Distant from Three Forks, four and a half miles.
St. Mary's Country.—Steamer from Kaslo or Nelson to Davie Townsite, thence trail.
Three Forks.—Steamer from Revelstoke to Nakusp, thence rail; from Kaslo, all rail. Distant from Revelstoke, 82 miles; from Kaslo, 24 miles.
Trail.—Rail from Spokane to Northport, thence steamer. All steamer from Revelstoke, or steamer and rail via Nelson. Distant from Spokane, 150 miles; from Revelstoke, 150 miles; from Nelson, 50 miles.
Troul Lake City.—Steamer and stage from Revelstoke.

LILLOOET.

Bridge River, Cayoosh Creek, Fraser River.

VALE.

Boundary Creek.—Nearest railway station on the S. and O. R., Okanagan Landing, thence by steamer to Penticton and on by stage to Midway.
Fairview Camp.—Communication by boat from Okanagan Landing to Penticton, thence by stage.
Kettle River.—Steamer from Okanagan Landing to Penticton, thence by stage.
Midway.—Rail from Sicamous to Okanagan Landing, steamer Penticton and on by stage.
Okanagan Mission.—Rail from Sicamous to Vernon, thence by stage, or by steamer from Okanagan Landing to Kelowna, thence by livery.
Osoyoos.—Rail to Okanagan Landing, steamer to Penticton, and thence by stage.
Rock Creek.—Rail to Okanagan Landing, steamer to Penticton, and thence by stage.
Vale.—Nicola Lake Stage from Spence Bridge and Kamloops, 50 miles.
 Any of these points may be reached by rail from Spokane to Marcus, and thence by stage, twice a week.
 Mail stage leaves Penticton for Midway every Thursday morning.

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TIME TABLE No. 9.

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Leaves Arrowhead for Nakusp and Robson on Sundays, Tuesdays and Thursdays at 8 p. m.
Leaves Robson for Nakusp, Arrowhead, and C. P. R. points east and west on Mondays, Wednesdays, and Fridays at 4 p. m.
Connection is made at Robson with C. & K. Railway for Nelson and all points on Kootenay Lake and with Steamer Lytton for Trail and Northport.

TRAIL CREEK-ROBSON ROUTE, STEAMER "LYTTON."

Leaves Trail for Robson on Mondays, Wednesdays and Fridays at 8 a. m.
Leaves Robson for Trail on Mondays, Wednesdays and Fridays at 1 p. m.
Close connection at Robson with steamer Nakusp for Nakusp and Revelstoke and with C. & K. Railway for Nelson and Kootenay Lake points.

NORTHPORT-TRAIL CREEK ROUTE, STEAMER "LYTTON."

Leaves Trail for Northport on Tuesdays, Thursdays, and Saturdays at 7 a. m.
Leaves Northport for Trail on Tuesdays, Thursdays, and Saturdays at 1 p. m.
Connects at Northport with Spokane Falls & Northern Railway for Spokane.

NELSON-KASLO ROUTE, STEAMER "NELSON."

Leaves	NELSON FOR KASLO:—	Leaves	KASLO FOR NELSON:—
	Sundays at 4 p. m.		Sundays at 8 a. m.
	Tuesdays at 5:30 p. m.		Mondays at 3 a. m.
	Wednesdays at 5:30 p. m.		Wednesdays at 3 a. m.
	Thursdays at 5:30 p. m.		Thursdays at 8 a. m.
	Fridays at 5:30 p. m.		Fridays at 3 a. m.
	Saturdays at 5:30 p. m.		Saturdays at 8 a. m.

The steamer leaving Nelson connects on Tuesdays, Thursdays and Saturdays with Nelson & Fort Sheppard train, at Five-mile point, and with C. & K. Railway on Wednesdays and Saturdays for Kaslo and Lake points
The steamer leaving Kaslo connects on Mondays, Wednesdays and Fridays at Five-mile point with Nelson & Fort Sheppard train for Spokane, and at Nelson with C. & K. Railway for points north and south.
The right is reserved to change this schedule at any time without notice.
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