HOLIDAY-MIDWINTER NUMBER

The Phœnix Pioneer

AND BOUNDARY MINING JOURNAL.

Devoted to the Interests of the Boundary Mining District

Sixth Year. PHOENIX, BRITISH COLUMBIA, JANUARY, 1905. Price 25 Cents.

GRANBY CO.'S SMELTING PLANT, GRAND FORKS, B.C.

Capacity, 2,000 tons daily.

MONTREAL & BOSTON SMELTING PLANT, BOUNDARY FALLS, B C.

Capacity, 750 tons daily.

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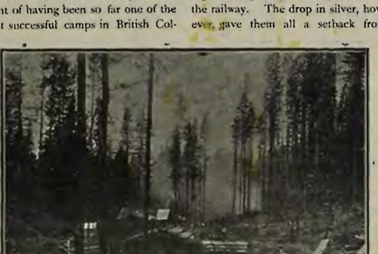
Devoted to the Interests of the Boundary Mining District, Southeastern British Columbia.

THE EARLY HISTORY OF THE BOUNDARY

THE history of a great mining camp is always of more or less interest, whether it refers to the productive and well known mines themselves or to the community that has been built up as a consequence of the existence, development and profitableness, present or future, of those mines. It is, therefore, probable that Phoenix camp, on account of having been so far one of the most successful camps in British Columbia, with every prospect of a steady growth for years to come, will hold its own in interest, not only of the past but of the future. However, it is of what has gone before with which we now have to deal.



VIEW OF PHOENIX BEFORE EVEN A WAGON ROAD HAD BEEN BUILT—THEN CALLED GREENWOOD CAMP.

Up to the year 1890 there was slight knowledge of the mining riches of Kootenay-Boundary. Many years before that the Blue Bell mine on Kootenay lake, had been known and worked in a primitive way, the Indians using the almost pure lead from which to mould bullets. But with the building of the railway line from Spokane to Kootenay lake at Nelson in 1892, the tide of prospectors began to flow in. Then followed the rich silver-lead discoveries of the Slocan district, and the temporary growth of a number of places in that locality. Before this, the silver-lead mines around Ainsworth had been worked also, to some extent, as they are now.

In 1893 silver was demonetized in the United States, and immediately dropped in price, so that many silver miners lost interest in looking for or digging out the white metal. Following that, attention was paid to the gold and copper mines of Rossland, which, like all the other camps, had its season of great prosperity, to be followed by a shrinkage, and that in turn by legitimate, systematic mining—especially in camps that had the worth to back them.

All these years what is now known as the Boundary country was practically unknown, as far as its resources were concerned. It was 70 or 80 miles from the nearest railway, at Marcus, Washington, and was little thought of or heard of. Still, a few hardy prospectors were in here in the late eighties and early nineties, and some of them found high-grade claims that were worked with some profit, notwithstanding the long mule and wagon haul to the railway. The drop in silver, however, gave them all a setback from which they never recovered till within the last three or four years. The Skylark and Providence were among these.

Prospectors had tramped over the thickly wooded hills where the city of Phoenix now stands, and had seen the mammoth iron ledges that gave small values in copper and less in gold and silver, and they thought little of them. Many were allowed to lapse, while still others were relocated, the operation being repeated if necessary. Few were fond of doing assessments when provisions had to be packed from 50 to 80 miles. It was expensive and disheartening, especially as there was so little chance of securing that great need of all new countries—or old countries either, for that matter—a railway.

Many of the old time prospectors who stayed with this camp in those tiresome days, have done well, but no one will grudge them with what they have come by, as it was undoubtedly well earned—every dollar of it. Others let go—dropped everything—and went to other districts, only to wish later that they had stayed with the Boundary. But when the C.P.R. actually began the construction of its Columbian & Western line into the Boundary—chiefly to reach the immense tonnage of the mines of Phoenix—then there was a decided change. But this will be referred to later.

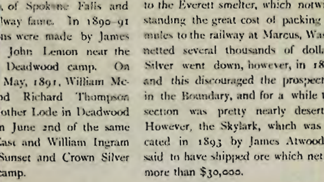
According to the general understanding of the oldest of the old settlers, the first man to come into what is now known as the Boundary Mining District of Southeastern British Columbia, was Charles Deitz, who arrived in this section in the year 1857. Mr. Deitz is still a resident of the Boundary, now living in a comfortable old age on his ranch a few miles from Midway. Old "Jolly Jack" Thornton was supposed to be the second man to reach this now well known mining region. As early as 1862 Boundary creek was worked for placer gold, and there was a small settlement south of the international boundary line, near where the town of Midway is now located.

In the year 1884 the first mineral claims were staked in Southern British Columbia. These were the Eagle, on Hardy Mountain, by James McConnell, and the Victoria and Washington, afterwards Old England, on Rock creek, a few miles above Kettle river. W. T. Smith and John East came to the Boundary district in 1887, and located the Rocky Bar claim, now the Tunnel, on Boundary creek, near the falls. In the same year they also located the Nonsuch, in Smith's camp. In the same year, 1887, the Bruce claim, on Ingram mountain, near Midway, was also located by East.

Three prospectors, George and David Leyson, and George Y. Bowerman, located the Big Copper, in what is now Copper camp. The claim was then known as the Bluebird. Afterwards they went over the Dewdney trail to Rossland, where some locations were also made, and the Boundary claims were allowed to lapse. The King Solomon, in Copper camp, was staked by Ed. Lefevre and James Lynch, and in 1888 it was acquired by D. C. Corbin, of Spokane Falls and Northern railway fame. In 1890-91 some locations were made by James Atwood and John Lemon near the Buckhorn in Deadwood camp. On the 23rd of May, 1891, William McCormack and Richard Thompson staked the Mother Lode in Deadwood camp, and on June 2nd of the same year John East and William Ingram located the Sunset and Crown Silver in the same camp.

By this time the pioneer prospectors were beginning to cross over the valley to where the city of Phoenix now stands, and Matthew Hotter located the Old Ironsides in July, 1891, and Henry White located the Knob Hill about the same time. James Atwood and James Schofield located the Stemwinder and G. W. Rumberger and Joe Taylor located the Brooklyn. Robert Densler located the North Star, allowed it to lapse, and it was relocated as the present Idaho by G. W. Rumberger. Densler also located the War Eagle and Snowshoe. Joe Taylor and G. W. Rumberger located the ground that is now the Rawhide and Monarch, and allowed them to lapse, when Densler relocated the Rawhide, and Keightly, Humphrey and Lind staked the Monarch. Other locations in this camp followed in rapid succession. Atwood and Schofield also discovered what is now Summit camp, and made locations. The rich Providence, which is now paying dividends, was located in 1892 by William Dickman.

About this time Howard C. Walters, an energetic mining man from Spokane, came into the Boundary and acquired a number of high-grade claims, as no others would then pay to work, with the nearest railway 75 miles away, and no wagon roads or trails in the country. However, Mr. Walters, who had organized a company known as Spokane & Great Northern Mining Co., finally succeeded in getting in a two stamp mill, which was set up at Boundary Falls, to treat the ore of the American Boy and Boundary Falls claims. Mr. Walters also bought the Providence, and made some shipments to the Everett smelter, which notwithstanding the great cost of packing on mules to the railway at Marcus, Wash., netted several thousands of dollars. Silver went down, however, in 1893, and this discouraged the prospectors in the Boundary, and for a while this section was pretty nearly deserted. However, the Skylark, which was located in 1893 by James Atwood, is said to have shipped ore which netted more than $30,000.



AN EARLY CABIN IN PHOENIX.

BOUNDARY'S NEW RAILWAY.

SIX years ago, when the Canadian Pacific Railway Company willingly spent its millions to construct over 100 miles of new railway, through its Columbia & Western charter, to reach Phoenix and the Boundary, it was a notable piece of work. But the great Canadian corporation had practically all the tonnage here to come for, the great objective point, of course, being the then growing-famous mines of Phoenix. Its officials knew that the tonnage to be developed would be tremendous—but even at that, they did not realize in full the potentialities, in a revenue producing way, of the Boundary. When, however, one mining company, operating at Phoenix, began to pay into its coffers a thousand dollars or more per day for freight alone, year in and year out, the Boundary district certainly looked very good to the head officials.

For years James J. Hill, president of the Great Northern Railway, had also been proposing to reach Phoenix camp by building a line from his nearest point—Grand Forks—a distance of about 25 miles, but necessitating some of the most expensive railway construction in the west. Three years ago surveys were run, and again they were carefully checked over nearly two years ago. But it was not until 1904 that something tangible was the result of these surveys.

Mr. Hill had built his line to Grand Forks and Republic two years before, and the lack of tonnage for that line is supposed to have been a tender spot with him, after the heavy cost entailed. However, he was learning that there was no lack of tonnage if he reached Phoenix, for was not the C.P.R. securing that rich plum entirely? So, in May of 1904 it was decided to go on with the work to Phoenix, and when it was so decided no time was lost.

In looking for a man who could contract for the entire work, a man who was a British subject, Mr. Hill selected John W. Stewart, a gentleman of many years of experience in railway construction. It was a happy selection for Mr. Hill and his advisors, for it is doubtful if the work could have been done so quickly and with so little friction had it been in charge of others. It is also questionable whether there is another contractor in Canada, much less in the United States, who could have handled the labor situation in the successful manner in which Mr. Stewart has handled it, especially as regards the alien labor and union questions. It is quite apparent to anyone that, as long as Mr. Hill, with his extensions in British Columbia, sees fit to award his contracts to such men as Mr. Stewart, the likelihood of complications will be reduced to the minimum.

Patrick Welch, an able assistant of Mr. Stewart, had immediate charge of the actual construction, which it was admitted was an evidence of wisdom on the part of Mr. Stewart. Few men could have produced the same results that these two gentlemen have accomplished this last summer and fall, and yet have it done with satisfaction generally.

When the word finally came in June to proceed, it was a rush job from the first day. It required practically all of June and July to organize the working forces, get camps established and secure the necessary laborers and supplies, but when this was done rapid progress was made, and the bulk of the work was completed in about four months—a record in railway construction rarely equalled.

A MILLION DOLLAR LINE.

This little piece of railway, which with spurs and sidetracks is about thirty miles in length, has cost the Great Northern people in round numbers a cool million dollars, or say a little more than $35,000 per mile. It was built for the special purpose of securing a share of the tonnage of the large mining concerns of Phoenix, and the road will undoubtedly receive its share of that tonnage. Its heavy cost is due largely to the extensive rock cutting necessary to construct the grade, the bulk of which was within a few miles of Phoenix. In one place a thorough cut had about 40,000 cubic yards of rock taken out, and in another a bridge was constructed that required about a million feet of timber—and all this is expensive work.

But cost made no difference, for it had to be put through, and put through quickly. In fact, on many of the heavy rock cuts two shifts of men were employed for a long time, to facilitate matters—night and day. All told, there were at one time 1,600 laborers working on the line, there being scarcely a mile of the grade that was not occupied by some of them.

James H. Kennedy, the chief engineer of the line, with a corps of four assistant engineers, had charge of the new line during construction, and looked after the details of that part of the work. They succeeded in securing a grade of not more than three per cent, and there are many long stretches of one per cent and less than two per cent. This favorable grade will permit of hauling heavy loads up the hill, there being a difference in elevation between Grand Forks and Phoenix of about 2,500 feet. The maximum curvature is 14 per cent.

ROUTE OF THE NEW LINE.

The new line, instead of following up the North Fork of the Kettle river to reach Phoenix, as does the C.P.R., follows the valley of Fourth of July creek from the Kettle river valley, till it reaches Summit camp, where it crosses the C.P.R. line. Then it runs up to the headwaters of Eholt and Providence creeks, circling around the point within a mile or two of Greenwood, but at a much higher elevation, and enters the city of Phoenix at the western end—opposite end from the C.P.R. The engineers state that the route of the line is an excellent one, when the difficulties of reaching this point are considered, and it would seem that such is the case from the substantial work that has been done.

The route is certainly a scenic one, and will be enjoyed by travellers coming into the chief mining town of the Boundary. It will also be a great accommodation to those coming here from the east, south or west, and will give Phoenix direct connection with another transcontinental railway.

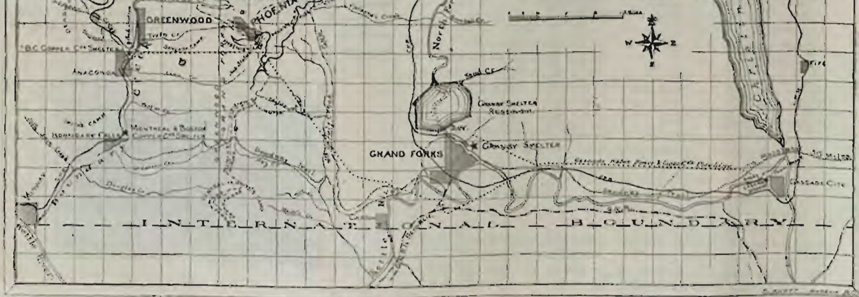
The corporate title of the company building the new line is the Victoria, Vancouver & Eastern Railway and Navigation Co., Ltd., the charter allowing it to build through to the Pacific coast, which it is anticipated will be done in the near future, a start to be made in 1905, it is believed. By the new line, Phoenix is but 175 miles—a few hours—from the city of Spokane, in the neighboring state of Washington.

SOMETHING OF J. W. STEWART.

John W. Stewart, who had the contract for this new railway line, was born in Scotland 42 years ago, securing his education in Edinburgh, and is one of the best known men in British Columbia. Mr. Stewart did his first work in this province as an engineer on the construction of the Canadian Pacific Railway in 1882. Later on he took part in the construction of many pieces of railway in the interior, including the Nelson & Fort Sheppard, the Red Mountain, the Kaslo & Slocan and the Columbia & Western, the latter built for the C.P.R. six years ago. At present Mr. Stewart has from 800 to 1,000 miles of new lines under contract in Manitoba, Ontario and the Northwest, and is probably one of the largest contractors in the railway construction business in the Dominion. He is a hard worker himself, and thoroughly understands the business to the minutest detail—which accounts for a large measure of his success. Mr. Stewart has many friends in British Columbia, especially in this part, where he is best known.

The contract for the bridge building and the track-laying on the Great Northern from Grand Forks to Phoenix, was let to Porter Brothers, one of the best known firms of its kind in the Northwest. The improved Roberts track-laying machine was used to put down the steel, which was imported from England. In the course of the trestle and bridge building something like two million feet of timbers were used. Porter Brothers also secured the contract for building the stations, freight sheds, round houses, etc., on this piece of road, and at this time this work is now proceeding.

Taken altogether, J. W. Stewart has every reason to feel well satisfied with the progress made with the construction of the Phoenix extension of the Great Northern. It is only too well known that, as a rule, railway contracts are rarely completed within from six months to a year of the time set therefor, and in this respect it is to the credit of Mr. Stewart and his able lieutenants that this contract has proved a notable exception.



WORK OF RAILWAY CONTRACTORS IN PHOENIX.

PROBABLY the largest single piece of work on the new railway to Phoenix was that at the Phoenix end, comprising, with the sidetracks, spurs, etc., nearly ten miles of construction. This work was sub-let to Burns & Jordan, a firm of contractors that has done a large amount of railway work in the Boundary in the last six or seven years. On the C.P.R.'s Columbia & Western construction, Messrs. Burns & Jordan had half a dozen sub-contracts during the progress of the work, and did them all up in satisfactory shape.

Regarding the work in and around Phoenix, however, the railway contractors did not have an easy job, for the reason that the city streets were torn up, in accordance with the agreement of the city's council with the railway company, and much blasting had to be done close to buildings in the city. In fact, the railway line cut a wide swath through the centre of the corporation. Yet, so skilfully have Burns & Jordan done their work that there have been almost no complaints at carelessness from the blasters. Some damage was done, when it could not be avoided, but it was promptly repaired. The Pioneer itself can testify to this from actual experience.

Beginning at a point about five miles from Phoenix on the Great Northern grade, Burns & Jordan's contract ran into Phoenix, with the sidings that were necessary for the large share of traffic which the railway expects to secure from here. Several camps were established, and men were set to work as fast as they came in, Burns & Jordan alone having above 600 men at work in and around Phoenix when the greatest number were employed. In the course of their work they have moved some 300,000 cubic yards of rock alone, besides hundreds of thousands of yards of other material.

With an excellent construction outfit—one that was up-to-date in every respect—they were able to push the work in a manner most satisfactory to those who were anxious to get the railway completed at the earliest possible date. Both of the partners being present during the entire construction; they looked personally after perhaps fifteen different gangs of men, sub-contractors, etc., who were in their employ. In this way no grass grew under their feet.

The firm of Burns & Jordan is composed of Edward Burns and John Jordan—both members being of long experience in the railway construction field, having done contracting for the last 18 years in all parts of the Pacific Northwest. The business men of Phoenix generally, with whom they have come in contact this last summer and fall, are unanimous in saying that it has been a pleasure to do business with them. During the progress of the construction both Mr. Burns and Mr. Jordan had their families in Phoenix.

HOW BOUNDARY TOWNS WERE STARTED.

IN a publication of this character it is quite in keeping that something should be said about the cities and towns of the Boundary country. Nearly all of them, in the last five or ten years, have had their times of prosperity and otherwise. They would not be typical of western mining camps if they had not. But it is pleasant to record the fact that general business all over the Boundary was never before on as substantial a basis as it is today—which means, as a matter of course, that legitimate mining was never in a better condition.

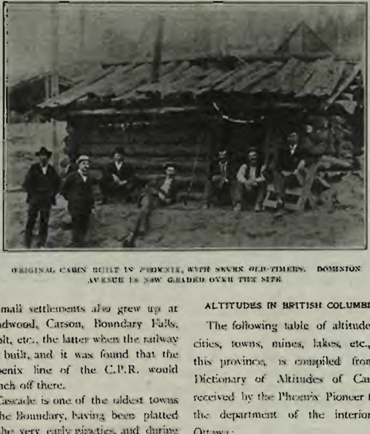
Phoenix—the most important point in the Boundary because the bulk of the ore tonnage originates here—which was originally known as Greenwood camp, and from which the town of that name was called, was virtually established in 1899. When the gigantic ore bodies of the Old Ironsides and Knob Hill mines began to be appreciated on the outside, that and the building of the C.P.R. into the district attracted a great deal of attention to this camp. About the same time McKenzie & Mann and associates took over the Brooklyn and Stemwinder groups for the Dominion Copper Co., the Snowshoe began active development, and other properties also came to the front, to add to the fame of the camp.

Geo. W. Rumberger platted the Cimeron mineral claim in the fall of 1899, J. B. McArthur also platting the New York claim as a townsite in the same year. In November of that year the Miner-Graves syndicate, as the owners of the present Granby mines were then known for brevity, placed the Old Ironsides sub-division to Phoenix on the market, all of the Phoenix property having one of the most remarkable sales in the history of townsite selling in British Columbia. It is within the memory of the writer that some persons travelled hundreds of miles to buy Phoenix business lots at the opening sale, only to find them already sold, much to their disappointment.

As far as the records show, the first townsite platted in the Boundary creek district, as it was then called, after the creek of the same name, was Midway, first called Eholts. This was acquired by Captain R. C. Adams, of Montreal, and associates, in 1893. It is now the Boundary terminus of the C.P.R.

The site of the present town of Greenwood was acquired by Robert Wood and associates in 1895, who immediately founded the town and platted the lots, the town being incorporated in 1897. Anaconda, adjoining, was founded previously, and Mr. Wood made an unsuccessful attempt to purchase it first.

Grand Forks, located at the junction of the main Kettle river and its North Fork, was one of the earliest settlements, being a diverging point. The site, which was owned by George McRae, was sold to John A. Manly in 1893, who shortly thereafter founded the town by platting it. Grand Forks is fortunate in being the location of the immense Granby smelting works, now about to be enlarged for the third time.



ORIGINAL CABIN BUILT IN PHOENIX, WITH SEVEN OLD-TIMERS. DOMINION AVENUE IS NOW GRADED OVER THE SITE

Small settlements also grew up at Deadwood, Carson, Boundary Falls, Eholt, etc., the latter when the railway was built, and it was found that the Phoenix line of the C.P.R. would branch off there.

Cascade is one of the oldest towns in the Boundary, having been platted in the very early nineties, and during the railway building enjoying a genuine "boom," and being at that time one of the most important of Boundary towns.

A conservative estimate of the population of the Boundary district has placed it at about 12,000 persons. As is well known, the most important industry is that of mining, being the industry on which all others practically depend. Other industries and occupations are well represented, lumbering being carried on to a considerable extent, and farming becoming more and more important each year, with a splendid market close at hand, being the numerous mines and smelters of the district, and the communities growing up around them. The valleys are admirably adapted to fruit raising, and fruits of all kinds are cultivated in the greatest profusion.

BOUNDARY DISTANCES.

Railway distances in the Boundary from Nelson, the C.P.R. divisional headquarters, are, approximately, as follows:

	Miles
Cascade	83
Grand Forks	96
Eholt	110
Phoenix	130
Greenwood	118
Midway	127

ALTITUDES IN BRITISH COLUMBIA.

The following table of altitudes of cities, towns, mines, lakes, etc., in this province, is compiled from a Dictionary of Altitudes of Canada received by the Phoenix Pioneer from the department of the interior at Ottawa:

	Feet
Arrowhead	1,413
Arrow Lake	1,384
Ashcroft	1,004
Atlin Lake	2,200
B. C. Mine	3,800
Bonnington Falls	1,658
Cascade	1,587
Castlegar	1,418
Christina Lake	1,531
Corbell	3,135
Cranbrook	3,014
Crow's Nest Pass	4,449
Eholt	3,096
Elko	3,082
Esquimalt	33
Farron	3,985
Fernie	3,303
Field	4,062
Fife	1,978
Fisherman	2,241
Glacier	4,093
Golden	2,580
Grand Forks	1,746
Greenwood	2,464
Hartford Junction	4,300
Hope	216
Illecillewaet	2,710
Kamloops	1,160
Kaslo	1,752
Keremeos	1,390
Kootenay Lake	1,735
Lardeau	2,400
Lillooet	840
Lytton	695
McGuigan	3,515
Midway	1,913
Morrissey	3,101
Mother Lode Mine	3,450
Moyie	3,046
Nakusp	1,413
Nanaimo	125
Nelson	1,769
New Denver	1,800
New Westminster	13
Nicola Lake	2,127
North Bend	495
North Star Junction	2,981
Okanagan Lake	1,135
Omenica Lake	4,100
Oro Denoro Mine	3,400
Osoyoos Lake	946
Phoenix	4,625
Princeton	1,885
Quesnelle Lake	2,250
Revelstoke	1,503
Robson	1,414
Rogers Pass	4,309
Rosebery	1,795
Rossland	3,461
Salmo	2,181
Sandon	3,516
Shields	2,025
Silverton	1,799
Slocan Station	1,777
Slocan Junction	1,637
Slocan Lake	1,761
Smelter Junction	1,563
Spences Bridge	776
Teslin Lake	2,600
Trail	1,364
Trout Lake	2,400
Tunnel	3,206
Windermere Lake	2,700
Vancouver	11
Vernon	1,255
Victoria	57
Waneta	1,358
Wardner	2,384
Wellington	377
Yale	223
Ymir	2,398

THE GRANBY CONSOLIDATED

ACKNOWLEDGED TO BE CANADA'S GREATEST COPPER PRODUCER.

THE story of the Granby Consolidated is one of the most interesting, as well as one of the most important, of any mining concern in British Columbia—or, for that matter, in the entire Dominion of Canada. Those most familiar with the subject concede this to be a statement of fact. From one of the most insignificant of groups of copper claims, six years or more ago, in a remote district, it has grown to be one that is attracting earnest attention from copper men of importance the world over for the reason that it is now realized that the Granby mines are becoming more and more an important factor in the copper producing industry of the American continent, and as years go by they are likely to become more so.

In the history of mining concerns there are always a large number of ups and downs—successes and failures. In the nature of things this must necessarily be so, as it is in all business enterprises of whatsoever nature. But no mining concern of this day—at least in this province—can show the steady, uninterrupted progress of the Granby Co.

It has become only too well known here in the Boundary that during the last few years no concern has done so much to foster confidence in this district as has the Granby. When mining in general had a setback two or three years ago, and it seemed to be the fashion for hitherto supposedly strong concerns to curtail or entirely stop operations, the Granby Co. not only kept on steadily, but was constantly enlarging its scope of usefulness in the Boundary as a labor employer, and at the same time was making greater preparations for turning out an increased quantity of copper, gold and silver bullion from the company's smelter. With its six furnaces it is today sending out about a million and a half pounds of copper bars per month. But further details of the product will be given in another part of this tale.

Exactly thirteen years ago last July, the first mineral locations were made in what is now Phoenix camp, being antedated by but few prospects in the Boundary country. These locations were the Old Ironsides and Knob Hill, and were made by Matt Hotter and Henry White, respectively, on the 20th day of July, 1891, and were recorded five days thereafter, at Camp McKinney, the recording office for this entire section in those days, and nearly 50 miles distant. The contrast with the situation here today is a remarkable one, the greatest progress, of course, having been in the last four or five years.

When Henry White and Matt Hotter toiled up the valley of Boundary creek on that hot summer's day in the early nineties, there were no trails or wagon roads of any kind in this section, and but few locations had been thought worthy the attention of the few hardy prospectors that had ventured some sixty or eighty miles from the nearest railway, which was at Marcus, Wash. But White and Hotter believed they had found something good at last, one of the claims being named after the famous old frigate of the United States navy, and the other after Hotter's old home, Knob Hill, San Francisco. John Stevens was a side partner of Matt Hotter, and on August 1, 1894, he located the Victoria adjoining the Old Ironsides, which is also included in the present Granby group of mines.

Times were hard in the Boundary, however, and it was next to impossible to get capital interested here, so far from railway communication, and with most of the mines of so low a grade. The original locators became discouraged, and it was not until 1895 that Stevens ran an open cut on the Knob Hill, showing more plainly what an immense proposition that was.

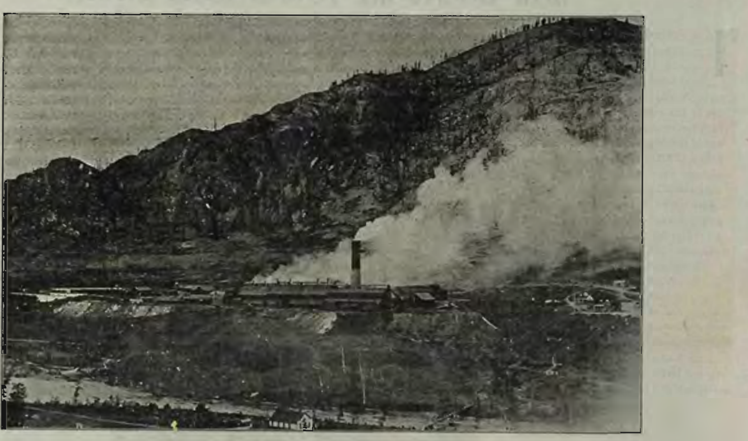
Eventually Mr. White disposed of a half interest to H. P. Palmerston, of Spokane, and he advised Jay P. Graves, of Spokane, to take it up. Mr. Graves looked into the matter, and finally decided to do so, organizing the Old Ironsides Mining Co., A. L. White, also of Spokane, being interested with him in the enterprise from its inception.

This was the winter of 1895-6, and Mr. Graves, although he had confidence in the properties, did not find it a bed of roses in getting others interested. However, in 1897, Mr. Graves decided to prosecute active development, and sent John F. Hemenway here with a small force of men to undertake it. Mr. Hemenway had sole charge for some months until Wm. Yolen Williams arrived in the spring of 1898, to assume the local control. Mr. Williams was the superintendent of the Granby mines up to July 1, 1904, when he resigned, and was succeeded by A. B. W. Hodges, who then assumed charge of both mines and smelter.

Up to 1897 there had not been 150 feet of work done on the Old Ironsides, the No. 1 shaft being down 100 feet, with some drifting. Mr. Williams started work on the Knob Hill No. 1 tunnel, as well as continuing the exploration of the Old Ironsides claim, and before the end of that year it became known that an ore body of almost fabulous width, length, and no one knew how deep, had been explored, and the attention of the mining world began to be attracted.

About, or just before this time, Mr. White and Mr. Graves succeeded in interesting S. H. C. Miner, of Granby, Quebec, in the group, as well as other men of means from the Eastern Townships of that province. Some of the Spokane men had become tired of waiting, and sold out their shares—always at a profit, however, as Old Ironsides dollar shares were quoted at $1.10 at one time, and Knob Hill went as high as 95c.

More claims were acquired when it came to be more and more realized what a tremendous proposition was here, and the first Granby smelting company was organized, as well as the Grey Eagle company. Eventually these four companies were consolidated in the Granby Consolidated Mining, Smelting and Power Co., Ltd., with a capital of $15,000,000.



GRANBY SMELTER—FROM LATEST PHOTOGRAPH.

The smelter had been erected at Grand Forks with an initial capacity of two furnaces, which was later increased to four, and about over a year ago to six, with a total capacity of treating 2,000 tons of ore daily. And now two more furnaces are to be added, giving a total battery of eight.

From the beginning the owners of the Granby mines were favored by having an ore that needed no outside mixture of ores to help it to flux—being almost a perfect self fluxing ore itself. This was greatly in its favor, and the most was made of it, reducing the expense of treating it to the minimum.

The first steam plant was brought to the Old Ironsides mine in September, 1897, and the next spring two drills were operated with it. It was hauled over poor roads from Marcus. In 1898 the first half of a ten-drill compressor was installed, and shortly after the second half was put in. Then in 1900 a ten-drill compressor was placed at Knob Hill mine, and the two connected. Contrast this with the presen

GENERAL VIEW OF GRANBY MINES.

magnificent equipment of machinery, a sixty-drill machine, operated by two 700 horse power electric motors, all of which are the largest of the kind in operation in Canada, and which furnishes ample power for pumps, hoists and a splendid machine shop. One can then get some idea of the changes that have taken place and the importance, in a commercial way, of the undertaking.

In the month of July, 1900, the first ore train was sent down to the company's smelter at Grand Forks, then just finished with two furnaces. At first the ore shipments were at the rate of about 350 tons daily, but were shortly increased to 700 tons per day. The next year two more furnaces being added to the smelter equipment, the shipments were again increased to some 1,400 tons daily. This rate continued for a year or two, and in the meantime the smelter equipment was again being augmented. After many delays, in the fall of 1903 six blast furnaces began the work of reducing nearly 2,000 tons of Phoenix ore per day, which rate has since and is now being maintained steadily. The machinery plant at the mines in Phoenix has a capacity of getting out a least 5,000 tons of ore daily.

Ore shipments from the Granby mines for the last four years have been as follows:

1900	64,533 tons
1901	231,762 tons
1902	309,858 tons
1903	393,718 tons
1904 (estimated)	542,000 tons
Total	1,541,871 tons

It is probably a fact that no mining company in British Columbia is constantly adding to and bettering its equipment more than the Granby Co. The necessity of saving every few cents possible on each ton of ore sent to the smelter, on account of the acknowledged low grade of the ore, has brought economies that have heretofore been unthought of in the history of mining, at least in this province. Going more into detail as to what has been done by this company in the last year or two, the following may be mentioned:

New machinery installed during two years includes two Canadian Rand class D cross-compound duplex air compressors, electrically driven and connected to motors by rope drives, high pressure cylinders 16x36 inches, low-pressure cylinders 28x36 inches, rated capacity together, 8,228 cubic feet of free air per minute, or 60 3¼ inch machine drills; two 700 horse power type C Westinghouse induction motors, to operate compressors; one type No. 1 Thew automatic, single-truck steam shovel, rated capacity 500 to 750 cubic yards in 10 hours, built by the Thew Automatic Shovel Co., of Lorain, Ohio; one type No. 3 automatic, single-truck steam shovel, capacity 1,000 to 1,500 cubic yards in 10 hours, and two 9x14 saddle tank locomotives, built by the Davenport Machine Works, Davenport, Iowa, for hauling the mine ore cars from the workings to the ore bins.

This machinery has cost the company something like $150,000 alone, and is constantly being added to. It is all of the most modern and approved manufacture, and calculated to materially assist in the reduction of costs in the production of ore.

In addition to the above last fall new ore bunkers were constructed for the No. 3 tunnel, and electrical equipment for hauling ore, including the first electric locomotive in the Boundary, has been ordered and is now being installed. All of this electrical machinery was supplied by the Canadian Westinghouse Co., of Hamilton, Ont., and is of the latest and most improved type. A huge style B Blake-Farrell ore crusher is also being installed for the No. 3 ore bins, similar to that in use for some time at the No. 1 ore bins, having jaws opening 42x32 inches, and a capacity for crushing rock to the size of 7 or 8 inches at the rate of 150 tons per hour.

It is well known that the Granby Company is steadily working in the direction of obtaining a large proportion of its ore by quarrying and tramming through the tunnels rather than by hoisting from the lower levels, thus reducing mining costs. At the present time the steam shovels are handling nearly one half of the ore output, and the question of their use in the underground workings is now under consideration, with a view to determining their practical use in the extensive tunnels and stopes.

As to the size of the ore bodies in Granby mines, several statements have been published, and while not always official, it is hardly too much to state that most of them, large as they appeared, were probably not exaggerations. When it is said that there are 50,000,000 tons of ore, the boundaries of which have been explored, the figures seem almost incomprehensible, yet mining men conversant with the conditions have made statements even broader than this. It can readily be seen that at the present rate of nearly 2,000 tons of ore daily for shipping and smelting, this ore body will last for many, many years. Then the company has announced its intention, some time in the future, of driving a long and deep tunnel, to reach the ore bodies at a depth of upwards of 1,500 feet, thereby opening up untold millions of tons more.

GRANBY CO.'S SMELTING WORKS.

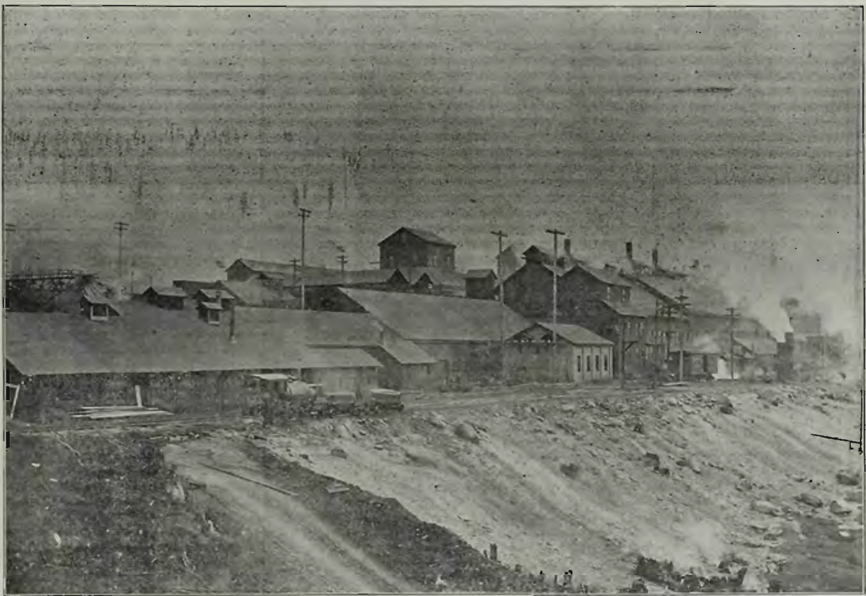
It has been a surprise to the most experienced of metallurgists when they observed the economy which is common practice at all the Boundary reduction works, including those of the Granby Consolidated Mining, Smelting & Power Co., Ltd., which are located on the North Fork of the Kettle river, about a mile above the town of Grand Forks.

The science of smelting has been reduced here to the least possible expense, with the greatest possible results, when cost of labor and coke are considered, of any smelter in this or any other land. At least this is the opinion of experienced smelter experts from abroad, who have come to examine, half disbelieving, but who have gone away thoroughly convinced.

Of course, there are excellent reasons for this most satisfactory state of affairs. In the first place, the management of the Granby Co. secured the best man available to be superintendent of the works. Then they utilized the waterfalls nearby for power, being transmitted by wire. Every known device for working out the economical side of the question was introduced, and old ones were improved upon, including even the automatic furnace chargers, the invention of Mr. A. B. W. Hodges, the superintendent. Last, but not least, they were favored in the nature of the Phoenix ore which they had to treat—this ore being practically of a self-fluxing nature, thereby requiring no roasting or mixing with other ores, and comparitively little fuel to make it run well in the furnaces.

All these things aided in the magnificent results, in which also ample capital and executive ability of a high degree played a most important part.

The reader will do well to remember that at Grand Forks is located the largest copper-gold smelter in Canada, which is turning out approximately 1,500,000 pounds of copper bars monthly, besides the gold and silver values. Not only is it the largest reduction works in the Dominion, but it is operated at the minimum of cost, and with a success that has enabled the company to already begin the payment of profits to the shareholders, with the probability of its being continued for an indefinite period, the



THE GRANBY SMELTER—FROM LATE PHOTOGRAPH.

A. B. W. HODGES,
GENERAL SUPERINTENDENT, GRANBY CO.

company's Phoenix mines, 25 miles distant, having an almost inexhaustible supply of ore.

After working on the construction for perhaps a year, the first furnace of the Granby smelter began the work of reducing the ores from the company's mines August 13th, 1900. Inside of eight weeks the second furnace was in operation. The success of these two furnaces was so satisfactory that it was at once decided to double the capacity of the plant, and in February, 1902, the third furnace was started, the fourth being blown in the following month. Still greater things in the smelting line were projected, however, and two more furnaces were ordered, and, after many delays, were started in the fall of 1903—making the full battery of six furnaces now in operation at this smelter, besides the reverberatory furnace. It has recently been announced that in 1905 two more furnaces will be added to the smelter, giving a total daily capacity of reducing about 2,700 tons of ore.

At first the copper matte, the product of the blast furnaces, about 50 per cent. fine, was shipped east, where it was converted into blister copper and the gold and silver values extracted. But by doing this the company paid freight across the continent on some 50 per cent. of waste, and as soon as possible a two stand copper converter was added to the plant, which meant a large saving in the item of freight alone. This converter has not only handled the matte of the Granby smelter, but that of other smelters in the interior of British Columbia, as well, when occasion required, up to the present.

The following table gives in chronological order some data in regard to the starting of operations at the Granby smelter:

Construction started . . . July	1899
First ore received . . . . July	1900
First sampler started . . . Aug. 13,	1900
First furnace started . . . Aug. 21,	1900
Second " " . . . Oct. 13,	1900
Third " " . . . Feb. 27,	1902
Fourth " " . . . Mar. 17,	1902
Fifth " " . . . Nov. 5,	1903
Sixth " " . . . Nov. 6,	1903
Converter started . . . . . Jan. 14,	1902

In regard to the tonnage of ore treated at the Granby smelter since the first furnace was started, August 21, 1900, the following figures tell the story, the ore all coming from the company's Phoenix mines, with the exception of occasional small shipments from other Boundary, Kootenay and Republic camp mines:

	Tons
1900	62,387
1901	230,828
1902	312,340
1903	401,921
1904 (estimated)	578,000
Grand total	1,585,476

For the fiscal year ending June 30, 1904, the production of gold, silver and copper at the Granby smelter was as follows, the figures given being official:

Copper	16,024,415 lbs.
Silver	275,960 oz.
Gold	54,231 oz.

For the same period of time the following official figures have been made public:

Mine development .	5,698 lineal feet
Granby ore shipped to smelter	514,387 dry tons.
Granby ore smelted	516,059 " "
Foreign ore smelted	36,182 " "
Foreign matte treated	4,290 " "

A brief description of the plant and machinery in use at the Granby smelter may be found of interest. While the initial plant consisted of but two blast furnaces, with blowers, electric fixtures, etc., each year has seen a considerable addition to the machinery, until now it is believed to be as complete as human foresight and energy can make it.

In the plan of increasing the capacity of the reduction works during 1903 by one third, extensive additions were made to the plant. Two new double-decked water jacket blast furnaces, 160x44 inches at the tuyeres, were put in (bringing the treatment capacity of the smelter, now having six furnaces, up to nearly 2,000 tons per day); three standard Connellsville blowers, and three 100 horse power Westinghouse electric motors to operate them; a full complement of receivers and cast steel 5-ton matte ladles; two 12x14 Canadian Rand Rock Drill Company's locomotives, one Davenport saddle-tank locomotive, and fifteen 6 ton Union Iron Works slag cars, for dumping the slag hot instead of granulating it; and some necessary equipment to make the copper converting part of the works equal to converting the copper matte from 12 to 14 furnaces of the type in general use in Boundary smelters—roughly 70 to 100 tons of matte each twenty-four hours.

A milling machine for doing intricate small work was added to the power appliances of the machine shop. The furnace room was extended 108 feet and the blower room about 50 feet, these additions increasing the length of the main buildings to about 150 feet.

Besides the generation of electric current equal to about 1,100 horse power at its own power house, situated just below the smelter on the North Fork of Kettle river, the Granby company uses electric power supplied by the Cascade Water, Power and Light Co., with which it has a contract for up to 1,000 horse power. A brick sub-station was built at the smelter early in the year, and a double-circuit three-phase line was brought in three miles from the main transmission line between Cascade and Phoenix.

The electrical equipment placed in the smelter sub-station includes one set of 1,000 horse power Canadian General Electric air-cooled step-down transformers, with motor and Buffalo blower, one set of 800 horse power Westinghouse oil-cooled transformers, switch board lightning arresters, static interrupters, and the customary other apparatus. The voltage is here reduced from 20,000, which is the pressure carried on the long-distance transmission lines, to 500 volts. Besides making this provision for extra power, more lighting facilities were added about the works. Cascade, where most of the power is generated, is distant about 12 miles from the smelter.

Taking it all in all, it is doubtful if a more complete smelting plant can be found on the American continent than that of the Granby Co. at Grand Forks. This, taken in conjunction with the company's mines at Phoenix, now so splendidly developed and superbly equipped, would make it appear that the Granby Co. will, indeed, be a factor in the world's copper market.

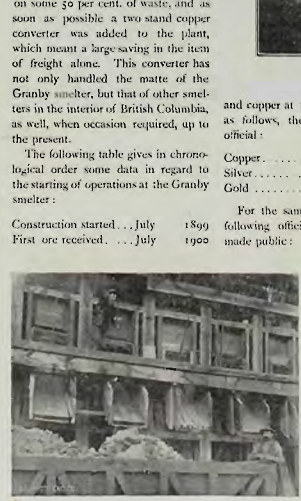
OFFICIALS OF THE GRANBY CO.

The full list of officials of the Granby Co. is as follows:

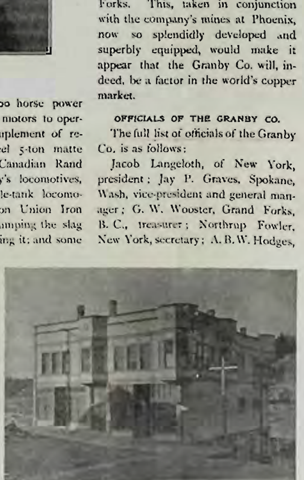
Jacob Langeloth, of New York, president; Jay P. Graves, Spokane, Wash, vice-president and general manager; G. W. Wooster, Grand Forks, B. C., treasurer; Northrup Fowler, New York, secretary; A. B. W. Hodges,

J. P. GRAVES, GENERAL MANAGER, GRANBY CO.

O. B. SMITH, JR.,
GRANBY MINE SUPERINTENDENT.



ORE LOADING AT GRANBY MINES.



GRANBY MINE OFFICE.

Grand Forks, B. C., general superintendent; O. B. Smith, jr., mine superintendent; Directors: John Stanton, Wm. H. Nicholls, Geo. M. Luther and

BUNK HOUSES, GRANBY MINES, 1897.

Jacob Langeloth, all of New York; J. P. Graves and A. L. White, of Spokane; W. H. Robinson, of Granby, Quebec; H. L. Higginson, Arthur C. James, Geo. C. Clark, of Boston, and George M. Baker, of New York.

On the 16th December, 1903, the Granby Co. declared a dividend of one per cent on the issued shares of the company, which was the equivalent of ten per cent on the selling price of the shares, the amount disbursed at that time being $133,630. This was not only the first dividend declared by any company operating on low grade ores, but probably the largest single dividend declared by any mining company in British Columbia.

The group of mineral claims now known as the Granby mines consists of a block of ten claims, as follows: Old Ironsides, Knob Hill, Victoria, Phoenix, Fourth of July, Aetna, Grey Eagle, Banner, Tip Top and Triangle fraction, all adjoining, comprising 338 acres, and lying to one side of as well in the heart of the present city of Phoenix.

JOHN STANTON'S OPINION.

Something over a year ago a party of New York and Boston men visited the Granby mines, to verify for themselves the reports regarding the extent of the ore bodies to be found here. The party included some of the best known and influential men connected with the copper industry—men who had been for years interested in the highly profitable copper producers of Northern Michigan.

Members of the party had previously made heavy investments in Granby shares at the then market price of $4 per share. After the trip of inspection they increased their holdings materially—the best possible evidence of their faith in the productiveness of the Granby mines.

VIEW OF GRANBY MINES, NOVEMBER, 1904.

One of the party, now a director of the company, was John Stanton, of New York, often styled the "father of the copper industry," and acknowledged to be one of the world's leading copper men of the day. After seeing the Granby mines and smelter, Mr. Stanton said:

GRANBY SMELTER—POURING MATTE FROM REVERBERATORY FURNACE.

"There is no question as to the immense quantity of ore in sight at the Granby mines. I am free to admit that I came west prepared to discount a great deal of what I had heard. How deep this deposit extends nobody knows. It is purely conjectural. However, there is every reason to believe that the depth should be commensurate with the length and width of this well defined lode. All the reports I had received respecting the size of the ore body and its self-fluxing character have been confirmed by personal examination.

"I was really surprised to see so intelligent and up-to-date a company in operation in this province. I refer especially to the mining methods as well as the organization, the mining and smelting plants and the system of bookkeeping. I have visited a great many mining camps during the past half century and nowhere have I seen superior methods in vogue. I was not prepared to see such a state of affairs in existence outside of the United States. I have not a single criticism to offer. Both Mr. W. Yolen Williams and Mr. A. B. W. Hodges, the smelter superintendent, have solved the mining and metallurgical problems, respectively, in an eminently satisfactory manner.

"The Granby ore body is the largest sulphide ore deposit I have ever examined, and my mining experience has extended to every variety of copper ore. It is analogous to the famous Rio Tinto of Spain. The Granby ore is lower in copper, but carries larger values in gold and silver. It is larger than the famous Tennessee deposit. Hitherto, sulphide ore bodies from 40 to 80 feet wide have been considered large, but the one at Phoenix eclipses anything I ever inspected. I don't know of its equal on the continent. The millions of tons of ore in sight and the size of the stopes proved a veritable revelation to me.

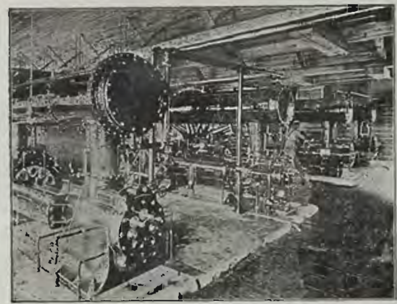
"The cheapness with which the surface quarrying operations are being conducted also appealed to us as business men. Mining has to be adapted to conditions, and in this instance Mr. Williams has certainly gone about it in the right way. Some people may say that the cost of extracting ore is bound to increase after the company shall have quarried out the ore body to a level plane and resorted to deep mining. Well, all I can reply is that this consideration, in view of the enormous tonnage in sight, need not give the management any concern for many decades. The trees over my grave will have attained full size before the Granby company has to undertake to solve any serious or expensive mining problems.

"At Phoenix," he continued, "the Granby extracts more tonnage per man

FIRST GRANBY PLANT, 1897.

per shift than we do in Michigan, because in the former place the ore is more easily mined. For instance, take the Atlantic mine, a Lake Superior proposition. There we have to hoist the ore from a 15 foot vein a distance

"GLORY HOLE," OR ORE QUARRY AT GRANBY MINES—SHOWING STEAM SHOVEL IN BACKGROUND.



INTERIOR VIEW GRANBY COMPRESSOR ROOM.

of at least 2,000 feet. We have long levels, encounter a good deal of water and require plenty of timber. On the other hand, we have an advantage in the way of cheaper wages, cheaper fuel and lower railway rates.

"British Columbia has yet hardly assumed the position in the mining world to which it is entitled. I hope and believe that the Granby company will be the lever that will attract capital for the development of your enormous mineral resources. My only regret is that time will not permit me to see more of the province. Some people are kind enough to credit me with having a large following which invests upon my opinion and advice. On my return I shall not hesitate to say that the copper-gold ore bodies of the Boundary are among the largest in the world, and that mining is already being conducted at a very handsome profit. As soon as the real state of affairs is appreciated in the east, capital will turn this way seeking investment."

SECTION OF GRANBY HOTEL DINING ROOM.

SIMPLE FACTS ABOUT THE GRANBY COMPANY.

The Granby mines are the largest shippers of copper-gold ores in Canada.

The Granby Co. owns and has five locomotives in service at mines and smelter.

The Granby mines employ more men than any other copper producer in Canada.

The equipment of the Granby mines is sufficient to turn out 5,000 tons or more of copper-gold ore daily.

The Granby Co. pays more freight on ores and merchandise than any other copper producer in Canada.

The Granby mines have never ceased operations since development was begun, about seven years ago.

The Granby Co. for the last two or three years has been paying freight bills averaging about $1,000 per day.

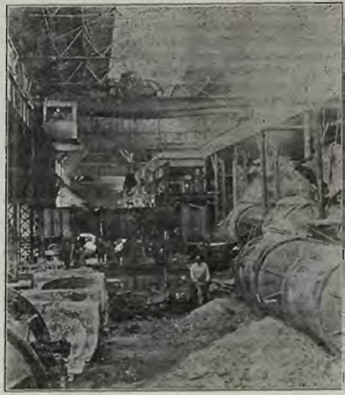
The Granby mines are the only copper properties in Canada where steam shovels are used to handle the ore.

The Granby smelter, with its six blast furnaces and two copper converters, is the largest copper smelter in Canada.

The Granby smelter produces about 1,500,000 pounds of metallic copper monthly, exclusive of the gold and silver values.

The Granby Co. has done more than all other agencies combined to make the Boundary district favorably known in the outside world.

The C.P.R. has spent about $5,000,000 and the Great Northern about $2,000,000, largely to reach the Granby mines and smelter with their rails.



CONVERTER ROOM AT GRANBY SMELTER.

The Granby mines have the largest air compressors—60 drills capacity at 5,000 foot level—in use any copper mines in Canada—driven by electric motors with 1,400 horse power.

The Granby mines are equipped with two of the largest ore crushers in Canada—capable, if operated night and day at full capacity, of crushing 6,000 tons of rock every 24 hours.

The ore body of the Granby mines is said to be the greatest of its kind in Canada, that has actually been developed and measured. The actual figures, in tons, of ore that is payable, would scarcely be credited.

DESCRIPTION OF GRANBY HOTEL.

ANY description of the properties of the Granby Co. would hardly be complete without reference to the Granby hotel—provided by the company for the comfort and accommodation of the mine employees, although not conducted by the company.

As is pretty well known, such houses are usually termed "bunk houses," from the fact that in the early stages of mining camp life, they usually consist of log buildings, with deal bunks arranged in tiers around the walls. But in this case, the Granby hotel, with its excellent apartments, can hardly come under that misleading title.

More than five years ago, the management of the Granby Co. foresaw that a considerable number of men would soon be in the company's employment at the mines, and determined to provide for their accommodation in a first-class manner. Accordingly, the Granby hotel was erected at a total cost of about $30,000. The building itself is three stories in height, with a high basement, and is, of course, heated by steam and lighted by electricity throughout. It is a plastered structure, with large airy rooms, intended to accommodate two or three men. In connection with it are capacious dry and wash rooms, with shower baths. It also has a large reading room.

When completed, the Granby hotel was leased to W. S. Macy & Co.—the company being William M. Law—and Mr. Macy has since been in charge, to the evident satisfaction of the from 200 to 300 men who are constantly his guests. The two half-tones on this page will give an idea of the exterior of the Granby hotel and of the large dining room.

In connection with the Granby hotel, Mr. Macy conducts a farm or ranch, about ten miles from Phoenix, in the Kettle river valley. From this ranch he supplies the table of the Granby with fresh milk daily, fresh eggs, poultry, etc., and a large proportion of the vegetables and other necessaries of the hotel in the edible line. This insures the purest and freshest of everything, and gives Mr. Macy a supply on which he can depend at all times. In fact, it is an advantage that few mine boarding houses in British Columbia can boast of.

All told, Mr. Macy has a corps of help numbering nearly a score of persons, and as he pays the best of wages to all his employees, he secures the very best to be had.

If there is a mine boarding house in any camp in this province that is conducted with more general satisfaction to the men and the management than is the Granby, we have yet to hear of it. Mr. Macy believes in giving a business of such proportions and importance his personal attention, and to this fact no doubt is largely due the excellent results attained.

GRANBY HOTEL.

STEAM SHOVEL AT GRANBY MINES.

INSTITUTIONS OF PHOENIX.

PHOENIX is probably better situated regarding its public institutions than any town of its size in the province—all things considered. It is always a difficult problem, with young communities, to finance important public projects without going deeply into debt—problems that must be considered sooner or later.

PHOENIX PUBLIC SCHOOL.

In Phoenix one of the needs that was most severely felt from the time that the mines began to be operated on a considerable scale, was a general hospital. In mining, notwithstanding the utmost care, accidents will happen, as they do in other walks in life, and then is the time when the best of care, on the shortest notice, is absolutely essential in the saving of life.

Five years ago the Phoenix General Hospital was projected and incorporated under the Benevolent Societies' Act of the province of British Columbia, but after it was incorporated came the question of ways and means for the construction of a suitable building for the purpose intended. A year passed without much progress, and then the need becoming greater with an increased number of men being employed at our mines, the hospital project was taken hold of, public subscriptions invited and interest generally aroused. The result of this was the donation of the ground by the Granby Co. and the construction of the present commodious structure, which was first thrown open to the public some three years ago. In the building of the hospital at a cost of over $8,000, it was found there would be a shortage of about $2,000, which is the amount of the mortgage.

This enabled the hospital to begin business, which it did on July 1st, 1902, and has since been the means of saving many lives, either of men injured in the course of their duties in the mines of the camp, or through illness. More than one man has gone out from Phoenix General Hospital, thankful that there was such an institution in Phoenix for the alleviation of suffering. It is also significant that more than once, some trustee of the hospital has been an inmate of the institution, and thereafter—even more so than before—has never lost a chance to say a good word for the hospital and the way it is conducted. They knew by personal experience.

The board of trustees of the hospital for the year 1904 consisted of W. J. Porter, vice-president; J. L. Martin, secretary-treasurer; H. N. Galer, J. B. Macaulay, W. S. Macy, and James Punch. Miss Howe is the efficient matron, with a competent staff of two or three nurses.

A most valuable aid in the work of the hospital has been the Hospital Ladies' Aid, composed of women of all denominations in the city, who have taken upon themselves the task of assisting in raising the much needed funds for things constantly needed in the hospital. Their work has been of a noble and unselfish character, and best of all, it has been most effective, which the trustees are only too pleased to acknowledge. The officers of the Hospital Ladies' Aid are: Mrs. Isaac Crawford, president; Mrs. J. A. Morrin, vice-president, and Mrs. J. L. Martin, secretary-treasurer. The hospital itself, which is located on a sightly knoll, overlooking the city, is undenominational.

The main support of the hospital comes from physicians who send contract patients to the hospital, and from private patients and public donations. In addition to this, like all general hospitals, the institution receives a small grant from the provincial government, the government nominating one of the trustees. The annual meeting of the hospital is held on the 20th of January.

HOME OF PHOENIX PIONEER AND BOUNDARY MINING JOURNAL.

Financial Standing of Phoenix.

IT cannot be said that the corporation of the City of Phoenix, through its council or otherwise, has squandered the people's money in public buildings. The view on this page shows the modest appearing log building which is used as city headquarters, including council chamber, city clerk and chief of police office, as well as that of city jail.

This log building has quite a history. It was built in the fall of 1899 by public subscription for a public school, and answered this purpose for a year or more, till the present commodious building was erected by the government for school purposes. In the meantime, none of the churches which were coming in to this new and growing camp had places of worship, so the old log schoolhouse was used in turn by Presbyterians, Methodists, Church of England and Catholics, till those denominations were organized and were able to erect houses of worship of their own. It was even used in those times, when buildings were few in Phoenix, as a place in which to give dances and entertainments occasionally.

ORIGINAL LOG SCHOOL HOUSE, PHOENIX.

Phoenix was incorporated in October, 1900, and of the various incorporated municipalities in the Boundary, it is probably in the best financial position of any. All told, the debt of the city amounts to $7,500 to the bank, secured by debentures. This money was borrowed for the purpose of improving the streets, etc., the amount secured being $10,000, which, as will be noted, has been reduced one-quarter. There is no other debt of any kind whatsoever, and the income from taxes, liquor and trades licenses, etc., leaves sufficient in bank to meet all city expenses promptly, besides allowing for some improvements and paying something on the loan above referred to.

For the year 1904 the officials of the city have consisted of G. W. Rumberger, mayor; D. J. Matheson, city clerk, city assessor, city collector, etc.; R. B. Kerr, city solicitor; W. R. Williams, police magistrate; C. H. Flood, chief of police, and W. H. Dockstader, night policeman. The six aldermen composing the city council for 1904, three from each of the two wards, were as follows: L. V. Birnie, J. E. Boyle, William Delahay, James Marshall, James McArdle and William J. Porter. Mayor and aldermen receive no pay.

Phoenix Public School.

ONE of the illustrations on this page shows the present public school building of Phoenix, a well arranged two-story structure, built by the provincial government especially for the purpose.

For nearly two years the young idea in Phoenix was perforce content with the limited accommodations of a one story log building, also shown on this page, which is now used as a city hall. After considerable agitation the present building was erected, the site being as central as could be obtained for the accommodation of scholars from all parts of the scattered town.

The capable teaching staff consists of Charles L. Thornber, the principal, and Miss Helen Moffatt, who has charge of the juniors. The board of school trustees for the year 1904 consisted of George E. Dey, chairman; Isaac Crawford, secretary, and J. E. W. Thompson.

Like all other cities in the same class with Phoenix, the public school receives a per capita grant from the province of British Columbia. Should this grant not be sufficient to meet expenses, the corporation of the city of Phoenix must make up the balance.

For the last year the total enrolment of the Phoenix public school has been over 100, which is an indication that if the city continues to grow, as expected, an addition will soon have to be made to the present structure.

PHOENIX GENERAL HOSPITAL.

THE SNOWSHOE MINE.

IN all the Boundary there is but one group of mines that has been steadily developed for years and brought to the point where it can be made a steady producer, by English capital. This does not mean that no English capital has become interested in this section, but rather that one company in particular has done more than all the rest combined—we mean when operated with English capital—in the shape of development and getting a mining property to a point where it can steadily maintain ore shipments. This property is the Snowshoe group, but one group removed from the Granby mines, and located only ten minutes' walk from the C.P.R. station in Phoenix.

That the Snowshoe is one of the groups of important Boundary mines is generally admitted, and the fact that it has already shipped approximately 100,000 tons of ore speaks for itself. The further fact that it is not now being operated does not lessen its importance one whit. Reasons for this will be explained later in this story.

This group comprises the Snowshoe, Pheasant, Alma fraction and Fairplay fraction mineral claims, crown granted and adjoining. The principal claim of the group, and the one on which most of the development has been done, is the Snowshoe. This claim was originally located in 1891, and later relocated. Then Patrick Clark, the Spokane mining operator, took a bond on the property, but failed to do sufficient work thereon to prove its value. On the recommendation of J. W. Astley, M.E., a bond was finally taken on the Snowshoe by the British Columbia (Rossland and Slocan) Syndicate, Ltd., and that concern, with Anthony J. McMillan as managing director, at once entered upon a long period of development, practically bringing the mine to the condition it is in today—where it has ore bodies of sufficient size to permit of the property shipping 500 or more tons per day for an indefinite period, a number of years at least.

ANTHONY J. MACMILLAN, MANAGING DIRECTOR.

After the British Columbia (Rossland and Slocan) Syndicate, Ltd., had performed about \$130,000 worth of development work from 1899 to 1901, the Snowshoe Gold and Copper Mines, Ltd., was organized in London with a capital of £250,000 to take over the group and operate the same. This company was organized by the promoters of the old syndicate and was floated without trouble in England at a time when it was difficult to float anything. The chairman is the Earl of Chesterfield; vice chairman, George S. Waterlow, Esq.; managing director, Anthony J. McMillan.

GENERAL VIEW OF SNOWSHOE PROPERTY.

Mr. George S. Waterlow, who is a son of Sir Sydney Waterlow, is one of the best friends that this district has in England. Mr. McMillan has been identified with the Snowshoe from the time of the inception of development work, and Mr. Astley likewise. Mr. Astley had had some seventeen years' experience as a mining engineer in the United States and Canada.

The tonnage of ore shipped from the Snowshoe for four years, the product going mostly to the Boundary Falls and Greenwood smelters, was as follows:

	Dry Tons
1900	297
1901	1,731
1902	20,800
1903	71,212
Total shipments of ore	94,040

All the Snowshoe ores carry gold and copper, the copper either sprinkled freely throughout, or more generally disseminated in fine particles. The ores vary in character, the gangue being sometimes silicious, sometimes calcareous, while again it is magnetic or specular hematite. In parts of the property the several varieties occur in quite distinct bodies and in others they are mixed.

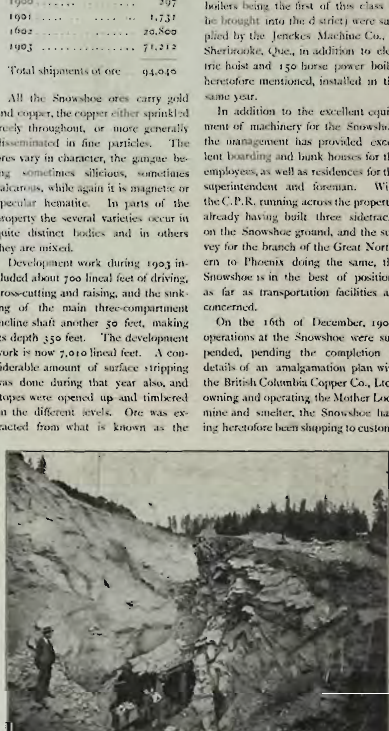
Development work during 1903 included about 700 lineal feet of driving, cross-cutting and raising, and the sinking of the main three-compartment incline shaft another 50 feet, making its depth 350 feet. The development work is now 7,010 lineal feet. A considerable amount of surface stripping was done during that year also, and stopes were opened up and timbered on the different levels. Ore was extracted from what is known as the Tunnel or No. 1 level, the 200-foot and 300-foot levels, and from several ore quarries opened from the surface. The mine is now in excellent condition, with numerous ore faces accessible, workings conveniently arranged, power equipment adequate, and ore bins and trackage provided, so that a daily output of 500 tons can readily be maintained. From 60 to 100 men were regularly employed at the mine.

The improvements and additions to machinery, plant and buildings during 1903 included the completion of ore bins with a capacity of 2,500 tons, building of head frame and skipways, and the installation of a 150 horse power double conical-drum electric hoist with motor to operate it, and another steam boiler, 150 horse power, high pressure—the largest hoist in the Boundary. The hoist was operated by electricity, the current having been supplied by the Cascade Water, Power and Light Co., which also supplies power to the Granby company's mines.

The power plant of the mine, in 1902, included two steam boilers, two air compressors together rated at about 12 drills, machine drills, hoisting engine at the shaft, and an auxiliary hoist in the tunnel, steam pumps, etc. In 1903, the first half of a Rand Corliss 30 drill air compressor, to have a working pressure of 125 lbs., a combined machine to be driven by either steam or electricity, and two 80 horse power horizontal return tubular boilers, with a working pressure of 150 lbs. (these boilers being the first of this class to be brought into the district) were supplied by the Jenckes Machine Co., of Sherbrooke, Que., in addition to electric hoist and 150 horse power boiler heretofore mentioned, installed in the same year.

In addition to the excellent equipment of machinery for the Snowshoe, the management has provided excellent boarding and bunk houses for the employees, as well as residences for the superintendent and foreman. With the C.P.R. running across the property, already having built three sidetracks on the Snowshoe ground, and the survey for the branch of the Great Northern to Phoenix doing the same, the Snowshoe is in the best of positions as far as transportation facilities are concerned.

On the 16th of December, 1903, operations at the Snowshoe were suspended, pending the completion of details of an amalgamation plan with the British Columbia Copper Co., Ltd., owning and operating the Mother Lode mine and smelter, the Snowshoe having heretofore been shipping to customs smelters, which did not prove to be satisfactory to the management.



QUARRY ORE BROKEN THROUGH TO UPPER RAISES.

It was confidently expected that this consolidation would be made effective, but in February, 1904, the announcement was made that the directors of the two companies had not, after all, agreed upon a basis of amalgamation.

Anthony J. McMillan, the managing director of the Snowshoe, is also holding a similar position with the LeRoi Mining Co., Ltd., operating the famous mine of that name in Rossland, which has paid more than a million dollars in dividends, and latterly Mr. McMillan has been looking after the affairs of the LeRoi mine on the ground.

When the Snowshoe mine was closed in December, 1903, the announcement was made that it would resume operations and ore shipments when it owned a smelter of its own or had an interest in some reduction works. Like the great majority of ore bodies in the mines of the Boundary, the values in the Snowshoe mine are low, and not high enough to pay a profit to a smelter not owned by the company itself. For this reason work was suspended pending either the building of a smelter by the Snowshoe company itself or an amalgamation with some smelter already erected. Thus far neither of these events has taken place, but this last fall steps were taken that may result in a few months in the operation of the Snowshoe on a larger scale than ever.

The proposition in hand is nothing less than the consolidation of the Le-Roi, Centre Star and War Eagle, the most prominent mines in Rossland camp, with the Snowshoe. During the last fall, Prof. R. W. Brock, in charge of the Dominion geological survey, and a professor at the Kingston Royal School of Mines, spent a month with a dozen assistants in an exhaustive examination of the Snowshoe mine, on which he will make a report shortly. At present he is occupied in making an examination of the Rossland properties mentioned. What decision will be arrived at by the directors of the different companies owning the mines included in the proposed amalgamation, is, of course, not known. But there seems good reason to believe that the Snowshoe, with its magnificent machinery equipment, complete housing facilities, extensive development, and a million tons of ore that can now be measured, to say nothing of 100,000 tons already broken down in the many large stopes of the mine, will be in operation again at no very distant date.

Rossland mine owners have come to a realization that their low-grade ores must be concentrated, capitalization of the owning companies reduced and costs generally gotten to a lower point, to make a success of their operations. The Snowshoe owners think that their ores will mix to advantage with those from Rossland in the blast furnaces of the smelters, and will largely help to to solve the problem. Just what will be done, however, has not yet been announced.

SNOWSHOE TUNNEL.

At the second annual meeting of the Snowshoe Gold and Copper Mines, Ltd., held in London, the directors presented reports that contain many interesting facts. Mr. Geo. S. Waterlow, Mr. McMillan, and Dr. Jones had visited the Snowshoe several times, and thus are intimately acquainted with the plan of development that has been carried forward. At the meeting referred to, the chairman, the Right Hon. the Earl of Chesterfield, had the following to say:

"It gives me great pleasure to be able to state that, since the formation of the company in June of last year, development work has been vigorously prosecuted, and, as a result, further large bodies of ore have been opened up. At the present time the mine is shipping some 200 to 250 tons of ore per day, and very shortly, when the electric hoist at the main shaft, and the new railway spur to the lower tunnel are finished, it will be in a position to ship 500 to 700 tons of ore per day. I may say that the ore is being mined in the most economical manner.

"I mentioned last year that electric power would be brought up to the mine by the Kettle River Power Company, from Cascade. This is now practically accomplished, and we have made a contract with that company to run the hoist, which is now being installed.

ORE QUARRY, SHOWING MOUTHS OF RAISE.

"I have stated that we are hoping to effect greater economies at the mine by obtaining from the Canadian Pacific Railway further reductions in our freight rate, and we have also been strongly urging upon the ministers of the government the desirability of abolishing the unjust tax of 2 per cent, now levied on the gross output from the mine after freight and treatment rates have been deducted, pointing out that if taxation of this kind is to be levied at all, it should only be upon dividends declared.

"You will remember that it was only in June of last year that the company was formed, and I am satisfied that you will feel that since then excellent progress has been made, and that great thanks are due to the managers and those who have carried out the work.

"It is no wish of mine to make any invidious distinction, but if I single out our deputy chairman, Mr. Waterlow, my co-directors will not, I trust, feel any pangs of jealousy. If I may be allowed to say so, the Snowshoe mine is the infant of Mr. Waterlow. He has watched over it and tended it, and he has at various times spent days and weeks and months, not alone in this country, but on the mine itself and in other parts of Canada, working on behalf of the shareholders, to ensure the success of the undertaking. It is my hope, as well as it is my conviction, that these worthy efforts of his will shortly be crowned with the success they certainly merit.

"In conjunction with Dr. Lewis Jones, one of your directors, Mr. Waterlow spent some two or three weeks at the mine this last autumn, and I feel sure that both these gentlemen will be able to give you today, as eye-witnesses, a most interesting account of the present position and future prospects of the property.

"Of our managing director, Mr. McMillan, it would be impossible for me to speak too highly, and the shareholders are to be most sincerely congratulated on having a gentleman of such energy, of such capability, and, above all, so highly respected in British Columbia, to watch over their interests during the many months of the year in which it is his lot to reside at or near the Snowshoe mine, and also in London.

"We are convinced that before long we shall be able to prove to the investing public of this country that by honest, judicious, economical and sound management there are mining enterprises in the vast regions of British Columbia well worthy of the attention of the investor, and further, that there are in that country capabilities and possibilities hitherto little realized or appreciated, which must in time to come, and on their merits, attract the notice of the English capitalist."

Mr. Waterlow then, in part, said:

"After the lucid remarks that have fallen from the chairman there is but little for me to add; no doubt, however, you will be interested to hear something of my last visit to British Columbia and other parts of Canada, when I spent a considerable time—something over a fortnight—on the Snowshoe mine.

"On approaching the mine, through which the Canadian Pacific Railway runs, I was immediately struck with the great progress that had been made there since our last visit. The surface works were spread out before me, showing the stripped ground with the ore quarries and the new buildings that had been erected.

"Should you visit the mines yourselves, you could not help being impressed with the large bodies of ore which are already shown up both on the surface and underground. Our mine, of course, is comparatively in its infancy, compared to the mines above us known as the Knob Hill and Old Ironsides, and belonging to the Granby company. It is not above 1,000 yards or so from the Snowshoe, but, working for a much longer period, they have exposed bodies of ore that are stated to be a mile in length, and embrace, so it is said, a tonnage of seventy million tons.

"I should like to assure you that I am convinced that in the Snowshoe mine you have a property capable of a great future; good honest men working in its interest: and a very cautious engineer in stating its possibilities. And I cannot conclude these remarks without expressing how much we are indebted to our managing director, Mr. McMillan, for the way in which he has worked for our interests, as both in British Columbia and other parts of Canada and in London he has unceasingly and untiringly devoted himself to the interests of this company. He is well known all over Canada, and is one of the best known men in British Columbia, and we are very much indebted to him for the able way in which the management has been carried out on the Snowshoe mine.

SNOWSHOE ELECTRIC HOIST—LARGEST IN THE BOUNDARY.

"It may interest you to know that we have recently received an offer from certain mining men in America who wish to purchase our property upon a basis of over a million tons of ore in sight. This is not the first offer we have had for the Snowshoe property. I think that you may feel that the tonnage mentioned is not overestimated, and that a great deal more will be found; that the mine will last for many years."

BRITISH COLUMBIA COPPER COMPANY, LTD.

ONE of the three largest corporations operating its own mine and smelter in the Boundary country is the British Columbia Copper Co., Ltd., the smelter adjoining the city of Greenwood, and the mines being located some three miles west of the smelter, in Deadwood camp. The Mother Lode mine was located on May 28, 1891, a couple of months prior to the location of the large mines in Phoenix camp.

In 1896 the claim was bonded to Col. John Weir, F. L. Underwood and S. F. Tichenor, of New York, who that year formed the Boundary Mines Co., to develop the Mother Lode. They began work on the property in September, 1896. In March, 1898, the British Columbia Copper Co., Ltd., was formed in New York, with a capital of $1,000,000 to acquire and operate the Mother Lode and adjoining claims of that group. The company now owns the Mother Lode, Primrose, Offspring, Ten Broeck, Sunflower and Don Julio mineral claims, which are conveniently located for the most advantageous working.

FREDERIC KEFFER, M.E., MANAGER B.C. COPPER CO., LTD.

cashier, George B. Paul, all of Greenwood and Anaconda, the latter town adjoining Greenwood.

In 1896, when Frederic Keffer took charge of the development of the Mother Lode group, there was not even a prospect shaft of 25 feet on the property. Now the footage of development work totals nearly 10,000 feet, not counting the immense amount of work done in the extensive ore quarries being operated so successfully by the company.

The lode found on the Mother Lode is very large, the surface varying from 80 to 150 feet in width. It has been cut in trenches for a distance of over 1,800 feet north from the main shaft to where it disappears under a heavy drift, and a large surface exposure on the Primrose, some 7,000 feet in the opposite direction, also shows its continuity to the south, the whole making a gigantic body of smelting ore. The main shaft is down 325 feet, with long levels running at both 200 and 300 feet depth. At present the smelter's two furnaces are being supplied largely from the surface of the ore

BRITISH COLUMBIA COPPER CO.'S SMELTER—FROM LATEST PHOTOGRAPH.

quarries, it being found a much more economical method of getting out the ore.

The main ore quarry has been opened well up the side of the Mother Lode hill, other openings having been made at other levels, and tunnels run beneath, through which the ore is dropped from the large quarries, and thence taken at small cost to the crushers, which are located at the mine itself.

The Mother Lode has been steadily developed quite as long as any mine in the Boundary, and longer than most of the properties. It was the first mine to have a power plant capable of doing much development. In 1898 a ten-drill straight line air compressor was hauled to the mine from Marcus, Washington, then the nearest railway point, the cost for hauling alone being about $5,000. In 1901 a 40-drill cross compound condensing Ingersoll-Sergeant air compressor, with two 100 horse power boilers, and a first-motion Jenckes hoisting engine, with other plant, were added to the equipment. The company has erected comfortable and commodious mine buildings and residences for the employes, the number employed at the mine now being from 60 to 100.

The smelter equipment of the British Columbia Copper Co., Ltd., is complete in every respect. In addition to the usual complement of ore crushers, cornish rolls, sample grinders, etc., the smelter is supplied with two Allis-Chalmers stack furnaces, 42 inches wide by 150 inches long, inside dimensions of tuyeres, of which there are ten on each side, of 3½ inches in diameter. At first the power for the two No. 7½ Connellsville blowers, as well as for other purposes, was furnished by a Reynolds-Corliss engine, rated at 150 horse power, there being three 100 horse power boilers to make the steam. This was superseded, however, last summer by electric power from Cascade, 25 miles distant, a contract having been made with the Cascade Water, Power and Light Co. to furnish all the power needed.

The best of results have been obtained at this smelter in reducing ore, owing to the ore itself being, like most Boundary ores, of a self-fluxing nature, that is, needing but little outside ores to mix with it to make it run well in the furnaces. The first furnace was blown in February 18, 1901, and the second in June, 1902, there being room left for the addition of more furnaces, which it has been definitely stated will be done in the next few months.

Up to a few months ago the copper matte from the Mother Lode smelter was converted into blister copper at the converter of the Granby Co. at Grand Forks, but last year the company began converting its own matte at the smelter, as a converter building had been erected, and two stands of copper converters installed. The converter plant includes the following machinery: In power house (81x40), a Nordberg blowing engine, arranged for either steam or electricity, capacity 5,000 cubic feet of air per minute, at 12 pounds pressure; a 300 horse power Canadian General electric variable speed induction motor, with switch boards, etc.; two sets of transformers to reduce voltage from 2,000 to 550; a 75 kilowatt motor-generator to produce direct current at 250 volts, for driving electric crane, and trolley locomotives; an hydraulic accumulator and pump for tilting converters, run by 25 horse power motor.

In the converter room there are two converter stands equipped with all necessary appliances; five shells are provided; a 40-ton 4-motor electric travelling crane handles the matte in 5-ton ladles, which are filled by launders connecting with furnace forehearth. The flue dust is caught in specially arranged steel and brick dust chambers, and a briquetting plant is now being put in. The building is entirely of steel. A spur from the main line of line of the C.P.R. serves the converter department of the works, and no expense has been spared to make the plant up-to-date in every particular.

In some respects the Mother Lode is fairly representative of the larger copper-gold ore deposits occurring in the Boundary district. The croppings are in places soft oxides of iron from decomposition of ore-bearing rock and in others unaltered magnetic iron

The capital of the British Columbia Copper Company was increased to $2,000,000 in 1902, in shares of $5 each. Of this stock, 256,800 shares have been issued, leaving 143,200 out of the original 400,000 in the treasury. The president of the company is F. L. Underwood; vice-president, F. L. Sommers; treasurer, C. E. Ludlow, and secretary, R. H. Eggleston, all of New York City. The general manager of the company from the beginning has been Frederic Keffer, M.E.; superintendent of the mine, S. C. Holman;

MOTHER LODE MINE—FACE OF ORE QUARRY.

oxides, very solid and compact, carrying copper pyrites and gold. In still other places they are calcite with copper pyrites, iron pyrites, more or less quartzose material, and carrying some gold. These croppings differ from those on the Granby Co.'s Knob Hill mine, in which specular iron occurs, a fine-grained magnetite being more generally characteristic of the Mother Lode outcrops, the chief of which was a big copper-stained blow-out, standing out prominently and distinctly noticeable from all of the surrounding thinly timbered hills.

The footwall, as disclosed by development work, is for the most part limestone, and the hanging wall a diabase. On the footwall side there is not as a rule a marked transition from ore-bearing or barren rock, but the ore often grades into the country rock outside of what is more or less defined as the ore body, so that it is difficult to tell within a few feet where the pay ore will run out. On the other hand the ore gives place to the barren country rock on the hanging wall side with comparitive abruptness, fading away completely within a foot or two. The chemical composition of the hanging wall and of the ore lying against it —leaving out the pyrites—is substantially the same. According to the best geological authorities who have examined the district the ore bodies are altered limestone. Here, as at the Old Ironsides, Knob Hill and B.C., porphyry dykes intrude, and it is considered quite probable that these intrusions afforded means of ingress for the ore-carrying solutions from beneath, consequently the presence of a porphyry dyke is usually regarded in this district as a favorable indication when prospecting for ore.

Although the croppings on the Mother Lode appear in somewhat of a crescent shape, the general trend of the lead or ore deposit is north and south. The ore bodies pitch to the east at an angle of 55 to 65 degs. The ores themselves may be classed in three general groups: 1. A calcite carrying copper pyrites and iron pyrites, these sulphides sometimes being massive and sometimes scattered in small crystals throughout the rock. Some quartzite is also often present. 2. A silicate of lime, iron magnesia and alumina, carrying both copper and iron pyrites, massive or scattered, and frequently

GENERAL VIEW OF MOTHER LODE MINE, 1904.

also quartz, garnets or serpentine; often all three together. Occasionally, too, a small quantity of zinc blende occurs in this class of ore. 3. An excessively hard magnetic oxide of iron, with silica and copper pyrites: not often much iron pyrites.

NOS. 1 AND 2 QUARRIES, MOTHER LODE. SEEN FROM ABOVE.

All these ores carry gold, and the calcitic and silicious varieties small quantities of silver as well—about one to two ounces to the ton. There has been found near the lime wall on the 200 foot level ore with calcitic gangue, carrying galena and zinc blende, and assaying well in silver, but not in sufficient quantities to regard it as a separate class. The several varieties of ore above described blend into one another, more or less, but this general classification holds good with the Mother Lode.

The ore body on the Mother Lode is similar in many respects to that in the Granby mines, except that it has not yet been proved to be nearly so large. For several years development work was done underground, and much crosscutting and drifting at the 200 and 300-foot levels have proved that here, too, a large body of ore of shipping grade is available.

A main tunnel has been driven nearly a thousand feet into the hill on a level with a bench on which has been erected ore bins and other facilities for ore shipping. From this tunnel several exploratory crosscuts have been run to determine the width of the ore, and big raises have been made to the quarries above. The main quarry was opened at a level about 110 feet above that of the tunnel, and other quarries below and above. From the highest point at which the ore outcrops on the hill down to the level of the main tunnel the depth is about 260 feet, and down to the bottom of the main shaft, which is also in ore, about 350 feet. Half a dozen quarries have been opened at different places, those on the top of the hill giving a larger percentage of sulphur, facilitates matte making in the smelter furnaces. The raises from the tunnels to the quarries are funnel-shaped at the top, so that when blasted down from the faces of the quarries, the ore may fall into them without handling. Rocks too large to pass through the bin gates of the hoppers at the bottom of the chutes are "bull-dozed." The ore is drawn from the chutes into 3-ton cars, which are hauled by horses to the ore crushers having the capacity of 65 to 80 tons of rock per hour each, crushed to a size not exceeding five inches. From the crusher an elevating machine raises the ore to shipping bins above the railway track.

The Mother Lode is opened up sufficiently to enable it to maintain an output up to 1,000 tons per diem, whenever the company shall increase the treatment capacity of its smelter to require that quantity in addition to custom ores it also treats.

From the annual mining review of the Nelson (B.C.) Daily News, January 1, 1905, we quote the following regarding the developments and progress at the Mother Lode mine during 1904:

At the British Columbia Copper Co.'s Mother Lode mine, substantial progress was made last year. The open workings were considerably enlarged—in fact, they are now one big quarry, the dividing masses of ore having been broken down and sent to the smelter. There is here a long double-tracked adit, known as the mule tunnel, from which half a dozen raises have been made into the quarries above. Near the end of this tunnel, a big stope was opened a few months

BRITISH COLUMBIA COPPER CO.'S SMELTER TWO YEARS AGO.

ago in a large body of ore of a good grade. This ore may prove to be the same body as that in No. 5 quarry, but this cannot be determined until the raise, now being made, shall break through. When the mine was visited about the middle of November, this raise was up about 150 feet, in ore most of the way, but there remained about 50 feet more to be passed through before the connection would be made.

The consolidation of the crushing plants having been decided upon, a new tunnel was driven to intersect the main shaft from which the 200-foot and 300-foot levels were opened, on the same level as the quarry tunnel. At the shaft a large pocket has been excavated, and this will discharge the 4 to 5-ton skips, obtained to replace the cages previously used. The skips will empty into a bin at the head of the shaft, the ore passing thence to either one of a pair of Jenckes Farrell crushers, each having a jaw-opening of 24x36 inches. These crushers will be worked by two engines, driven by compressed air, so arranged that either engine can drive either crusher, thus reducing chances of stoppages by breakdowns in either engines or crushers. A belt conveyor will take the crushed ore to the main ore bins for shipment by rail thence to the company's smelter at Greenwood.

All the plant for this improved arrangement for crushing the ore has been purchased and some of it has already been installed. Where the excavation was made for the crushers a body of good ore was opened up and from this 6,000 to 7,000 tons were taken out. This body of ore has since been proved to be of considerable size, recent reports placing its dimensions, so far as yet explored, at 200 feet by 130 feet. The diamond drill has been used underground during recent months with satisfactory results, one hole proving the occurrence of very good magnetic oxide ore down to 345 feet below the collar of the shaft, at which depth the drill was withdrawn.

The ore receipts at the British Columbia Copper Co.'s smelting works, during the year 1904 (those for December having been estimated), totalled 211,864 tons. The sources of this ore were as follows: Ymir, 148 tons; Rossland, 22,360 tons; Boundary, 188,249 tons; foreign ores (chiefly from Republic and neighboring camps), 1,107 tons. Of these ores, 1,197 tons were gold-quartz; 148 tons of silver-bearing lime, and 210,519 tons gold-copper. Included in the foregoing were 70 tons of concentrates. The production of matte was 2,489 tons, and of blister copper, 1,526 tons. The matte was bessemerized at Tacoma until June 27, and thereafter at the company's own works. The total production of metals (including estimate for December) was as follows: Gold, 35,911 ozs.; silver, 116,685 ozs.; copper, 5,201,073 lbs.

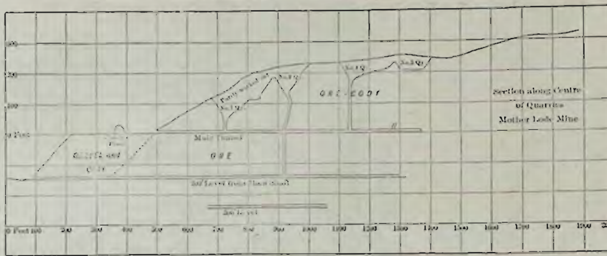


CHART OF ORE BODY, MOTHER LODE MINE.

The completion and successful operation of the bessemerizing works that a year ago were in course of construction constitutes the leading feature of progress at this company's smelter, where the matte made, as well as custom matte, is converted into blister copper.

The tonnage of ore treated at this smelter for the several years, including the foreign ore received for reduction, was as follows:

1901	117,611
1902	148,600
1903	162,913
1904 (estimated)	209,864
Total	638,988

EMMA MINE ORE QUARRIES.

The Emma Mine.

IN point of shipments and men employed the Emma mine, in what is known as Summit camp, about five miles from Phoenix, is the most important mine in that camp. This property originally belonged to W. T. Smith, a well known Boundary pioneer, and Mackenzie, Mann & Co., the latter of Toronto. Some three years ago Mr. Smith sold his interest, one-quarter, to the Hall Mining and Smelting Co., of Nelson, that company finding the iron ores of the Emma, with some copper values, just the thing for fluxing purposes—for which previously barren iron ore had been purchased. The Nelson smelter people operated the property and took out many thousands of tons of ore, some of which they used themselves, the balance going to the different smelters of Kootenay and Yale. It was found by experience that the ore was admirable for the special purpose intended, having besides some values therein.

Last June, J. J. Campbell, commercial agent of the Hall Mining & Smelting Co., secured the interest of Mackenzie, Mann & Co. in the Emma, and later disposed of this three fourths interest to the B. C. Copper Co., of Greenwood. An arrangement was then entered into between the two owners by which the mine was to be, and is being, operated by the B. C. Copper Co., of which Frederic Keffer is manager.

The Emma is a quarrying proposition, and like all propositions of that kind the ore can be delivered on cars economically. Thus far all the ore has been shipped over the C.P.R., which has a spur on the Emma ground. The new Great Northern branch from Grand Forks to Phoenix, also passes over the ground of the Emma, which gives the mine an outlet over two independent lines of railway.

During the year 1904 important development work was carried on at the Emma, the shipments being steady meanwhile to the several smelters. Demonstration was made of the existence of additional large reserves of the same high character of fluxing ore as had been taken out of the property, with even better values in gold and copper. A second incline was sunk, starting from the bottom of the lower railway spur, and from the face of this considerable diamond drilling was carried on, with what are reported to be excellent results.

In the last four years the Emma mine has produced approximately 70,000 tons of ore, as follows:

1901	650 tons
1902	8,530 tons
1903	22,937 tons
1904 (estimated)	38,000 tons
Total	70,117 tons

Taken altogether, there seems, in conservative minds, no doubt that the British Columbia Copper Co. has secured a group of mines, which, well equipped with machinery and ores admirably adapted for blending, together with the company owning a smelter of its own, will, at no distant date, place this company in the profit sharing column.

BRITISH COLUMBIA COPPER CO.'S CONVERTER ROOM.

PRESBYTERIAN CHURCH.

METHODIST CHURCH.

ROMAN CATHOLIC CHURCH.

CHURCHES IN PHOENIX.

A HISTORY of the church work of Phoenix brings out some interesting facts, and shows that, while progress has been made all along the line of secular effort in the last six years, the religious teachings of homes far away, perhaps across the water in many cases, had not been forgotten by those who settled in these mountains to build up the town of Phoenix. As a rule religious work is not a plant of quick growth in mining camps, yet it can be said truthfully that in Phoenix it has steadily progressed, in some degree, from year to year, due to the faithful work of those interested in the cause.

Presbyterian Church.

TO David A. Stewart is due the credit for holding the first church services in Phoenix, which occurred on July 6th, 1899, in the then new dining room of the Phoenix hotel, the first frame hotel built in the town. Mr. Stewart

REV. E. C. W. MACCOLL, B.A.

was a young Presbyterian missionary, who for months held services in Greenwood Sunday mornings, in Eholt the same afternoons and in Phoenix the evenings of the same days, and made the entire distance on foot. Mr Stewart's vim, energy, tact and general manliness endeared him to nearly everyone, and he is remembered most pleasantly by all with whom he came in contact. After that first meeting services for a few weeks were held in the log building now used as the Brooklyn bunk house, and then for a hotel.

In September the log school house was occupied, and the service was the first meeting of any kind held in that building—and as Mr. Stewart remarked, it got in ahead of the inevitable dance.

Tuesday, October 24, 1899, a business meeting was called for organization purposes, when the first board of managers of what was later called St. Andrew's Presbyterian church, was chosen. The Sunday school was organized December 10, 1899. About this time the first trustees of the church were chosen, consisting of A. P. McKenzie, J. E. Mills and W. B. Willcox.

From that time on was a period of growth with the church. In the spring of 1900 Mr. Stewart departed to resume his theological studies in the East and there was a succession of ministers for longer or shorter periods, including Rev. Jos. McCoy, Rev. James Sutherland, Rev. John Millar, Rev. V. M. Purdy and the present pastor, Rev. E. C. W. MacColl, who came here just a year ago this month.

In the fall of 1900 it was decided that the time had come to build a church home, and a site being secured from the Old Ironsides Mining Co., as a donation, in the present central location, with the help of liberal donations and a loan of $700 from the church society in the east, the building now in use was erected. It was and is the largest church edifice in Phoenix, being 33x54 feet in size, heated with hot air and lighted by electricity. It is valued at about $4000 as it stands. Being so centrally located and the first organization of the nature in Phoenix, it has had a good support generally. The church is also the owner of a neat manse. The present officers of the church are as follows:

Board of Managers—G. E. Dey, chairman; Isaac Crawford, secretary-treasurer; Duncan Murray, J. S. Boyce, J. W. Hannam, Thos. Brown and A. S. Williamson.

Ladies' Aid—Mrs. Wm. G. Frazer, president; Mrs. I. Crawford, secretary and Mr. John A. Morrin, treasurer.

Sunday School—Rev. MacColl, superintendent; Mrs. I. Crawford, Miss McKenzie and Mrs. MacColl, teachers.

The Methodist Church.

UNLESS the true progress of a city can be measured entirely in terms of wealth or population, the influence of religion must be reckoned among the factors contributing to the development of Phoenix. Not the least potent in this development has been the Methodist church which was founded in this camp by Mr. G. R. B. Kinney, B.A., in June, 1901. Mr. Kinney was confronted by difficulties enough, but stimulated rather than discouraged by obstacles, he gathered about him a small but earnest band of workers who by their cooperation with Mr. Kinney and his successors have done much toward making this denomination what it is today in Phoenix.

Services were first held in what is now the city hall, and later in the Miners' Union hall, as the struggling cause had to accept what circumstances thrust upon it.

When Mr. Kinney left in June, 1902, he was succeeded by Mr. Thos. Green, B. A., of Toronto, as missionary. A bright future for Phoenix Methodism was anticipated when Mr. Green's appointment was known, as he had lately carried off one of the highest academic honors of Toronto university. Nor were these hopes disappointed, as Mr. Green has been chiefly instrumental in making the Methodist church in this city what it is today. His genial nature, his scholarly attainments and his unaffected piety, at once won him a place in the hearts of all classes, even among those not favorable to the cause for which he worked. Under his energetic leadership the growth of the church was steady, and at last it became evident that in a city with the assured successful future of Phoenix, a hall hired for the purpose was wholly inadequate. Hardy hall and the Graves-Williams hall had been used in turn, but it was not until the beginning of Mr. Green's second year that definite preparations were made for the erection of the neat structure that now stands as the monument to his indefatigable energy. The heartiness of the invitation which he received to remain for the second year testified to his popularity and assured him of the support of his fellow-workers. So in spite of much opposition to the project, sufficient funds were raised to

REV. D. M. PERLEY, B.A.

guarantee the building of a church. Without the self-sacrificing gift of $550 from Mr. Green's friends in Toronto, however, the church could never have been built.

After many delays the new church was dedicated on September 11, 1904, by Dr. J. H. White, the Superintendent of missions for British Columbia.

In the meantime Mr. Green had been succeeded at the end of his year in June by D. M. Perley, B. A., and it was a cause of deep regret that Mr. Green was unable to see the completion of the work for which he had labored so faithfully. The work of such devoted pioneers will not be in vain and a bright future is in store for Phoenix Methodism.

The quarterly official board for 1904 consisted of C. W. Greer and Hugh Reed.

The trustee board for 1904 was C. W. Greer, Hugh Reed, E. R. Dawson, George Murphy and Rev. J. D. P. Knox.

The Ladies' Aid officers are: President, Mrs. Hilda Smith; secretary-treasurer, Mrs. Silas Smith.

Sunday school officers are: Superintendent, C. W. Greer; secretary, Stuart Hudson; treasurer, Mrs. Dan Martin.

Roman Catholic Church.

REV. Father J. A. Bedard, O.M.I., pastor of this church, was born at St Eugene, Ont., in 1858. Made his classics at Bourget college, Rigaud, P.Q., and his philosophy and theology at the Catholic university of Ottawa. He was ordained in Ottawa in 1887 and the same year came to British Columbia where he remained ever since. He was successively in charge of the Catholic church in Kamloops, Nelson, Cariboo, and Mission City. In December, 1900, he was placed in charge of the Catholic missions throughout the Boundary district, making Greenwood his headquarters and gave Phoenix divine service once a month.

Early in the spring of 1901, four lots in block 26, city of Phoenix, were purchased. On the 15th of November, 1903, the church of Our Lady of the Good Counsel was opened for divine service. It is a neat structure, in a sightly location, 23x42 feet in size, with a steeple and a bell. The Catholic congregation of Phoenix is steadily increasing and possesses property as follows:

Land valued at..........	$2000
Buildings valued at.......	2657
Furniture valued at........	450
Total............	$5107

All money was collected in Phoenix—none came from the outside. On this property there is a debt of $1200.

At the church of Our Lady of the Good Counsel divine service is held twice a month, viz: the second and fourth Sunday of each month. Holy Mass at 10 o'clock a.m. Vespers and Benediction at 7:30 p.m. Sunday School at 2:30 p. m.

Ladies Aid and Altar Society meets every 4th Sunday of each month. President, Mrs. T. Finnigan; vice-president, Mrs. C. Campbell; secretary and treasurer, Mrs. P. H. Cosgrove. The League of the Sacred Heart meets every 2nd Sunday of each month. President, Mrs. W. Barnett; vice president, Mrs. W. S. Doyle; secretary and treasurer, Mrs. T. Finnigan; promoters, Mrs. C. Campbell, Mrs. W. S. Doyle, Mrs. W. Barnett, Mrs. T. Finnigan and Mrs. P. H. Cosgrove. The Catholic Society Club meets every Thursday at 8 o'clock p. m. President, C. J. McAstocker; vice-president, W. H. McDonald; secretary, M. H. Mullen; treasurer, P. H. Cosgrove.

REV. FATHER J. A. BEDARD, O.M.I.

Other Churches.

IN addition to the three churches above referred to, there are two other church buildings in Phoenix. The Church of England has an organization, and has erected a neat chapel, called St. John's mission, at a cost of about $2000. Services are held in this church once a month.

Some two years ago the Congregationalists erected a church building at a cost of more than $2,500 on Gospel hill—so called because the buildings of the Roman Catholics, the Church of England and the Congregationalists, as well as that of the Presbyterian manse, are in close proximity. No services are now held in the Congregational church.

BOUNDARY MINES PRODUCED $4,000,000.00 IN 1904

A short review of the mining progress of the Boundary for the year 1904 shows that the last twelve months have been a period of decided progress and encouragement to every one in this section. In the last three years the business of mining has been brought to a more solid basis than ever before, with results well calculated to encourage those directly interested in the industry. The real business of mining, in short, was never in as good a condition in the Boundary as it is today, with every prospect of there being a steady and substantial increase in the year to come. More men are working in the mines, more furnaces are being operated at the three district smelters, and better results, both from high and low grade mines, are being obtained.

PHOENIX CAMP.

The last year has certainly been one of no little progress in Phoenix camp. At the beginning of the year the Snowshoe mine was closed, and is still inactive, but those in a position to know assert that this large and well developed property, with its million tons of ore blocked out and 100,000 tons already broken down in the stopes, will not long remain idle. Should the English capital interested in the Snowshoe not include the mine in the large Rossland mine merger, now proposed, the property will doubtless be worked just the same.

The Brooklyn, Stemwinder and Rawhide mines were started up last summer, having been acquired by the Montreal & Boston Consolidated, and have shipped approximately 25,000 tons of ore since operations were begun. The Rawhide only started shipping last week, but is confidently expected to grow into one of the largest of Boundary's shipping mines. At present its output is about 300 tons daily. The Brooklyn has installed the first half of a 30 drill Ingersoll-Sargent air compressor to furnish power for that mine and for the Stemwinder, almost adjoining. The statements given out are to the effect that the best results are being obtained from the ores from these three mines at the company's Boundary Falls smelter.

Of course, the old reliable of the Boundary, the Granby mines, have been doing business steadily at the old stand all through the past year, shipping steadily a little less than 2,000 tons of ore daily. The total shipments for the year will approximate 550,000 tons from the Granby mines, all of which has been reduced at the company's smelter at Grand Forks.

During the year the Granby mines have had in employment from 350 to 450 men steadily, and when the two new large furnaces at the smelter are installed, the force of men at the mines and the output will be proportionately increased. This will undoubtedly happen during the next few months.

Improvements at the Granby mines have been steadily going on during 1904, especially during the last half of the year, in preparing for making shipments over the Great Northern railway. These improvements will run in cost from $150,000 to $200,000, all of which is being paid from earnings of the company. They include the new ore bunkers at the No. 3 tunnel, where a large crusher is now being installed, with a total capacity of about 3,000 tons in 24 hours—a duplicate of that in use at the Knob Hill mine for the last two years. The trains of ore from the mine at this level will also be operated with an electric locomotive, now on the ground, and other electrical machinery, of the latest type, is also being installed for this outlet of the mine.

On the 1st of July, William Yolen Williams, who had charge of the properties since the inception of work on on them several years ago, resigned from the superintendency of the Granby mines, and A. B. W. Hodges, superintendent of the smelter, was made general superintendent for the company, and O. B. Smith, Jr., who had been engineer for several years, was made mine superintendent.

It is anticipated that in the new year other properties in or near this camp will be starting operations on a more or less extensive scale.

DEADWOOD CAMP.

Deadwood camp's most important mine is now and always has been the Mother Lode, owned and operated by the British Columbia Copper Co. Work has steadily progressed at this property under the superintendency of S. C. Holman, the force of men running from 65 to 100. In the twelve months the property has shipped to the company's smelter at Greenwood close to 175,000 tons of ore, being nearly 50 per cent. more than for the previous year.

Improvements have also been the order of the year at the Mother Lode mine. A new ore crusher has been installed, and while the policy of taking out the ore from the surface quarries, whence it could be most cheaply mined, has been followed steadily, development has also been going on to some extent in the deep workings. An important find of ore was made in the property quite recently that enhances its value to a considerable degree, and while it has been explored hundreds of feet, its boundaries have not yet been definitely determined. Mr. Holman has made an excellent record in taking out on an average of seven tons of ore per man per day, including every man employed in every capacity at the mine.

The Sunset mine, also in Deadwood camp, is owned by the Montreal & Boston Consolidated, and has only been operated since that company resumed operations in the Boundary. The mine is well equipped with machinery, and this year has shipped approximately 3,000 tons.

SUMMIT CAMP.

In Summit camp several properties have been worked during the last year, including the Emma, Oro Denoro, Senator, Reliance, Lancashire Lass, Brey Fogle, No. 37, and Mountain Rose.

The Emma, an iron proposition with copper values, has been worked almost steadily, and has shipped approximately 38,000 tons of ore, mostly to Nelson and Greenwood smelters, some of it also going to Grand Forks and Trail, as well as Boundary Falls. From 15 to 30 men have been employed here, the mine being owned jointly by the B. C. Copper Co. and the Nelson smelter.

From the Oro Denoro about 16,000 tons of ore have been shipped during the year past. In the early part of the year the mine was operated on quite an extensive scale, but latterly the force of men has been reduced and shipments have been in accordance. The ore was sent to the Granby smelter at Grand Forks. Those interested in this property feel that they have a big proposition, and they seem to be justified in the belief.

The Senator, under bond to the Granby Co., has been shipping to the Granby smelter, while the shipments from the other mines referred to have been small, if any. It is reported that the B. C. mine, in Summit camp, which has in the past shipped about 100,000 tons of some of the best ore from any Boundary mine, is likely to be reopened at no distant date.

WELLINGTON CAMP.

In Wellington camp there has been little progress this last year. The well known Golden Crown and Winnipeg mines, having gotten into financial troubles, have remained closed, but the Athelstan, which was sold to the Montreal & Boston Consolidated last summer, was operated for a time, sending out during the year some 4,500 tons of ore, mostly to the Boundary Falls smelter. As the ore must be hauled on wagons a mile or more to the Winnipeg spur, the cost of which is equivalent to a fair profit alone, it is likely that during the coming year a tramway will be built to the Great Northern railway, which runs not far from it in the valley below.

OTHER PROPERTIES.

In addition to the properties just mentioned, there are a few others that are preparing to do extensive development. Notable among these are the Betts and Hesperus mines, located on Hardy mountain, several miles from Grand Forks. At this property an air compressing plant is now being installed and the Chicago men operating the property propose to do extensive development on the large ore bodies they have so far uncovered.

In Franklin camp, some fifty miles up the North Fork of the Kettle river, considerable activity has also been shown this year in the way of preliminary development on a number of claims, notably the McKinley, Banner, Gloster, etc., and those who have been there assert that this camp will come to the front very largely in due time; at least one corporation has been formed to operate here, and when railway transportation is afforded, it will be more rapidly developed.

Up the West Fork, development and some shipping is being done, and when a railway is built there this year, it will be favorably heard from. Important claims are the Sally, Bounty, Carmi, Butcher Boy, Lottie F., etc., the Carmi having had a two stamp mill in operation. High average values are secured in this district, and it cannot well fail to grow into an important section.

HIGH GRADE MINES.

Particularly satisfactory has been the showing made by the high grade mines of the Boundary in 1904. Those that have made previous records in values have improved upon them, while several have been added to the list, with a good prospect of remaining thereon. To ship carloads of $75, $100, $150 or $200 ore is no uncommon thing with such mines as the Elkhorn, Providence, Skylark, E.P.U., Last Chance, etc. As it has been expressed, there has scarcely been a blank among the high grade mines during the past year, nearly every one of them turning out most satisfactorily.

The Providence, which has held an enviable record among the high grade producers, has been worked steadily during the year, shipping regularly, doing development, and paying over $20,000 in dividends to the shareholders. Adjoining the Providence, the Elkhorn has made fully as good a record, and like the Providence, seems to improve with development.

The E.P.U. has been operated continuously, shipping ore and making money for the owners. Nearby the Bay claim has been worked and some of the richest ore in the district found. The Silver Cloud and the Silver King, also near the E.P.U., have been worked and given good results.

A most significant fact, however, is the comparatively recent resumption of operations on the Skylark and Last Chance—two mines that were operated with profit years ago, and have lain dormant since. The Skylark, since it was taken under bond by a syndicate of Phoenix men, has fully held up its reputation of ten or twelve years ago, and has already shipped three cars of fine ore. The Last Chance is also shipping right along.

Other properties in the high grade belt that have been taken up and developed with good results are the Helen, Barbara, Strathmore, Combination and the Gold Bug, and others will soon be in the same category. High grade mining has certainly been made a success in the Boundary, and is an important part of our industry, the estimated value of the high grade mines output for 1904 being not far from $250,000.

WORK OF THE SMELTERS.

Ten furnaces are now in full blast in the three Boundary smelters, namely, six at the Granby, two at the Mother Lode, and two at the Montreal & Boston. They are handling approximately 3,000 tons of ore daily, or about 90,000 tons per month, or at the rate of over 1,000,000 tons annually. This ore, figured at an average value of $5 per ton, is worth $5,000,000.

The Granby smelter has been running its battery of six furnaces almost steadily during the year, handling a considerable amount of custom ore beside the the company's ore from Phoenix. Roughly, this smelter is turning out a million and a half pounds of copper bars per month. The announcement has been definitely made that in the next few months two more furnaces will be added, at a cost of some $125,000, giving a capacity of about 2,700 tons of ore daily when they are installed and in running order.

At Greenwood, the B. C. Copper Co.'s Mother Lode smelter has been operated steadily most of the year with its two furnaces, putting through about 208,000 tons of ore. An important addition was made to this smelter when the two stands of copper converters were installed last summer, doing away with the necessity of sending away the copper matte for bessemerizing. This has proved a great saving to the company, they also treating the copper matte for the Montreal & Boston and Trail smelters. The announcement is made that this company will also increase its furnace capacity the coming year.

The Montreal & Boston's Boundary Falls smelter had its first furnace blown in early in October, and its second late in December, so that the run for 1904 has been short, approximately 30,000 tons of ore having been treated there in that time. Here, also, as at other smelters, it is said that the results have been most gratifying to the management.

Before another six months rolls around there is every prospect that fifteen blast furnaces will be treating at least 4,000 tons or more of ore daily from Boundary's mines—as it is the intention of all the smelters to increase their respective capacities as soon as possible. The first two named smelters use electric power from Cascade to operate all machinery, while the last named uses steam for the present. Between 400 and 500 men are given steady employment at these three smelters.

For the year 1904 the mines of the Boundary are estimated to have produced ore valued at over $4,000,000, or about 40 per cent of an increase over the previous year, the total output for 1904 considerably exceeding 800,000 tons of ore.

FRATERNAL ORGANIZATIONS IN PHOENIX.

MAN is a gregarious animal, according to the poet. Apparently he loves to gather together, at any rate, for social intercourse and mutual improvement. Of course, it is not to be expected that a growing and energetic place like Phoenix would long be without its branches of various fraternal organizations. They seem to take root readily here and thrive mightily at this lofty elevation. Every one of the societies referred to below has been instrumental in doing an inestimable amount of good, since organization, to those who are connected with the several local lodges. The unions, also, as will be noted, have been instruments for good here, and members have received thousands of dollars in the shape of sick and death benefits, in the last few years.

Free Masons.

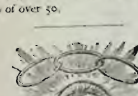
FREE Masonry has flourished in Phoenix for several years. Members of the fraternity resident here were for a time in the habit of attending lodge in other places, but in July, 1901, a dispensation was granted from the Grand Lodge of British Columbia, and King Edward Lodge No. 36, A. F. & A. M., was organized with about 20 members. The first Master Mason of this lodge Fred L. Cock, who served for two years, and was succeeded by G. L. Ferguson, who also served two terms.

For several years the lodge room was in the Morrison-Anderson building, but a few weeks ago it was moved to the McHale building, where it occupies the entire second story, which has been specially fitted up for its use.

King Edward Lodge is now out of debt and has a comfortable balance in the treasury. The following officers were recently installed for the year 1905:

Worshipful Master, George E. Dey.
Senior Warden, Dr. R. B. Boucher.
Junior Warden, Joseph J. Strutzel.
Secretary, Abner Hillist.
Treasurer, George L. McNicol.
Senior Deacon, William S. Macy.
Junior Deacon, Thomas Oxley.
Senior Steward, Samuel Stevens.
Junior Steward, E. E. Wells.
Tyler, Walter Ross.

For two years there was not much of an increase in membership, but for more than a year the lodge has had a steady growth, now having a membership of over 50.



Odd Fellows.

SNOWSHOE Lodge No. 46, Independent Order of Odd Fellows, was organized June 20, 1901, with a membership of about 20. The charter members were Thomas Hardy, David Whiteside, G. R. Mead, R. A. Scott, C. A. McClung and Alex McDonald. This is one of the strong fraternal organizations of the country and of Phoenix, the local branch now having upwards of 65 members in good standing.

In addition to the social advantages of membership, the lodge has a $7 per week sick benefit, while the Grand Lodge of the province gives a $50 funeral benefit.

Snowshoe Lodge No. 46 meets Monday evenings at the lodge room in Hardy hall, and visiting brethren are welcome. A feature in installing officers of late has been to have a joint installation ceremony for the Grand Forks, Greenwood and Phoenix branches of the order, thereby promoting and cementing good fellowship. At an installation of this kind held a few weeks ago the following officers were inducted to serve Snowshoe Lodge for the ensuing term:

N.G., A. S. Williamson.
V.G., Thos. Johnstone.
Rec. Sec., Geo. R. Mead.
Treasurer, F. McDougall.
Warden, J. Campbell.
Conductor, Chas. McCague.
R.S.N.G., W. S. Cook.
L.S.V.G., John McIver.
R.P.P., John McInnis.

Fraternal Order of Eagles.

PHOENIX Aerie No. 158, of the Fraternal Order of Eagles, has perhaps the largest membership of any fraternal organization in the city of Phoenix. It was the first one of its kind to be established in the Boundary, and has prospered ever since it was organized. Phoenix Aerie No. 158 was organized in June, 1901, with a membership of about 50. Now it has a net live membership of 80, and is growing all the time.

While the objects of the Eagles are mutual improvement and social intercourse, the Eagles have done a large amount of good in the way of assisting brothers in distress. Membership carries with it sick benefits of $7 per week and physician's fees, and also $100 funeral benefit. The Phoenix branch is in good financial condition, and holds meetings every Friday evening at Miners' Union hall. The following is the present roster of the officers:

Worthy President, D. Docksteader.
Vice-President, Ed. Brown.
Chaplain, Lester Walter.
Secretary, M. H. Roy.
Treasurer, G. W. McAuliffe.
Trustees, James Marshal, T. Collins and William Docksteader.

Knights of Pythias.

PHOENIX Lodge No. 28, Knights of Pythias, is one of the substantial fraternal organizations of the Boundary. The lodge was organized in April, 1900, with a membership of 20. Since then the lodge has had a steady growth, now having about 60 members, and has done much good among those fortunate enough to be admitted to membership. Meetings are held every Tuesday evening in Hardy hall.

The officers, who were recently installed for the ensuing term, are as follows:

C. C. James Murray
V. C., John Campbell.
Prelate, E. E. Jackson.
K. of R. and S., J.E.W. Thompson.
M. at A., Archie McLean.
M. of F., George Elkins.
M. of E., James Marshall.
M. of W., N. Palorcia.

Labor Unions in Phoenix

EVER since Phoenix came to be a mining camp of importance it has been a strong union camp, like most British Columbia camps, and it may be said in all candor and fairness that the relations between labor and employers have been amicable, there never having been a strike. Once or twice adjustments have been found necessary, and both sides met in the spirit of fairness and equity, and soon agreed.

That the camp producing the largest tonnage of any in the province should have been thus handled may seem remarkable, but it should be remembered that reasonable and fair-minded men among employees and employers were working together to build up the common good and the greatest copper camp in the province. That they have succeeded is now well known everywhere.

August 18, 1899, is the date of the organization of the first union in Phoenix—Phoenix Miners' Union No. 8, W.F.M. From its inception John Riordan has been its financial secretary, being every year elected to succeed himself. To Mr. Riordan, probably more than to any other one man, is due the success of the unions in Phoenix, and also to him is equally due the credit for having the hard-headed common sense, while standing up for the laboring man generally, to clearly show that at the same time the employer also has rights that should be respected.

First and last Phoenix Miners' Union has done an immense deal of good for its own members, and as this is a phase of unionism that is not much heard of, we have secured some figures through the courtesy of Mr. Riordan. For the year 1904 this union paid out for sick benefits $1,747.30, and raised in entertainments for disabled members $1,217.56, making a total of $2,964.86 that members received by virtue of their membership. In addition to this three members died during the year, which made $270, there being a death benefit of $90 each. The sum of $3,343.50 was raised for the Colorado strikers and $670.95 was raised for various charities and for Socialistic campaign work.

The union several years ago built a good two-story hall, at a cost of between $4,000 and $5,000, being the largest hall in the city, 30x74 feet in size, and the union now has a membership of from 450 to 500.

As might be expected, the Socialists are strong among the union men of Phoenix, casting about 60 per cent of the vote in this city in the provincial campaign in 1903, and about 55 per cent in the Dominion campaign of 1904. Mr. Riordan has been honored in the past by being chosen as one of the aldermen of the corporation. The present officers of the Phoenix Miners' Union are as follows:

President, Archie F. Berry.
Vice-President, John McIver.
Financial Secretary, John Riordan.
Recording Secretary, G. L. Elkins.
Treasurer, William Tatham.

In addition to the Miners' Union, there are several other unions in Phoenix, including the Carpenters, Federal Labor and the White Cooks' and Waiters' Unions. There is also a federation of the several unions, known as the Phoenix Trades and Labor Council.

Phoenix Curling Club.

DEVOTEES of the roarin' game are not lacking in Phoenix and they probably take as much interest in the game as in any town of its size. Three years ago a serviceable rink was built especially for this purpose, and games are frequently arranged with the clubs from Grand Forks and Greenwood.

In addition to this, the club is a member of the Kootenay Curling Association, two years ago being successful in capturing the Grand Challenge and Oliver cups. Last year the Walkerville trophy was brought home. The membership this year numbers 34, a great deal of enthusiasm being displayed, the chief drawback being that there is but one sheet of ice. The curlers are looking forward to sending two rinks to the Kootenay bonspiel held at Nelson in January.

President, R. B. Boucher.
Vice-President, G. L. McNicol.
Secretary-Treasurer, A. B. Hood.
Executive Committee, A. Strachan, I. Crawford, J. A. Morrin.

Shamrock Hockey Club.

THE Shamrock Hockey Club, of Phoenix, is one in which a great deal of interest is taken locally. With the long winters prevailing here, there is ample time for the hockeyists to enjoy themselves, and they take advantage of it. The officers of the Shamrocks for the season of 1904-5 as elected, are:

President, G. W. Rumberger.
Vice-President, W. R. Williams.
Secretary, F. R. Munshaw.
Treasurer, James Marshall.
Manager, J. E. W. Thompson.
Captain, T. Collins.
Chairman Executive Committee, Alex McRae.

Phoenix Base Ball Club.

DURING the summer season there is no small amount of interest in athletics in Phoenix, and base ball is one of the sports that has a good many adherents. Games are arranged with clubs from the nearby towns, as occasion offers.

The following is the list of officers of the local club for the last season:

President, William S. Macy.
Vice-President, E. P. Shea.
Manager, David Oxley.
Secretary-Treasurer, James Church.
Captain, J. Haverty.

MONTREAL & BOSTON CONSOLIDATED.

NO MINING concern, probably, has been more in the public eye in the last six months in the Boundary country than the Montreal and Boston Consolidated Mining and Smelting Co., Ltd,, owning and operating mines in three or four camps of the Boundary, as well as its own smelter at Boundary Falls. This interest was attracted for two reasons, namely, the fact that it had acquired a group of the best known mines in Phoenix camp—the Brooklyn-Stemwinder group—and its operations thus far are reported to have been attended with the best of metallurgical results. There seems to be no doubt whatever about the latter statement, and any old-timer in the Boundary knows that the group of mines spoken of above has always been regarded as one of the best in the district. And, of course, it is a source of gratification to all, whether directly interested in the Montreal & Boston Consolidated or not, that the efforts of the company's management have thus far been attended with such a degree of success.

H. T. PEMBERTON, MANAGER, MONTREAL & BOSTON CONSOLIDATED.

As this company now stands, it entered the field in a somewhat different manner from any other of the large corporations operating in the Boundary. Instead of starting in at the grass roots, as it were, and taking the chances of developing a problematical prospect into a paying mine, they secured several properties after they had been developed to the shipping stage—including the two-furnace smelter spoken of—and were thus ready, almost at the outset, to begin getting back some of the large outlay of capital involved in the undertaking. Their mines were profitable producers beyond the peradventure of a doubt, and had millions of tons of ore blocked out in them before the present company took hold of them. Therefore, the element of chance was reduced to the minimum. It only remained for those interested to provide the finances and business ability to operate the mines and smelter successfully. Another advantage, enjoyed just now by all copper producers, is the higher price of metallic copper in the markets of the world.

In 1890 there was registered with the provincial government at Victoria the Montreal-Boundary Creek Mining Co., Ltd., with an authorized capital of $2,000,000, having its head office at St. John, N.B., and being composed of Montreal and New Brunswick capitalists. They acquired the Sunset group of four claims in Deadwood camp, adjoining the Mother Lode group, and did considerable development work. Finally, the Montreal & Boston Copper Co., Ltd., was organized to take over the holdings of the old company, the new company having a capital of $3,000,000.

This company entered upon a campaign of extensive development of the claims, equipping them with one of the best machinery plants in the Boundary, and opening up large bodies of ore. It also acquired the smelter built at Boundary Falls, four miles below Greenwood on Boundary creek, by the Standard Pyritic Smelting Co., which concern had gotten into financial difficulties. This smelter was remodelled to suit present requirements, and as time went on a second furnace was installed, and a third furnace purchased.

The Montreal & Boston Copper Co. entered actively upon the business of smelting in the year 1903, and for several months kept the plant at Boundary Falls busy, largely with custom ores from several mines in the Boundary that were not equipped with smelters. Ore was also supplied from the Sunset, owned by the company itself, but it was found that better results could be obtained by using this ore in conjunction with the high grade silicious ores of the Boundary. The smelter continued in commission till the middle of December, 1903, when the Snowshoe mine, from which a large proportion of its ore supply was received, closed, pending a proposed amalgamation with another company, and the smelter was forced to do likewise.

This brings the history of the concern down to the time preceding the organization of the present Montreal & Boston Consolidated. G. H. Munroe and A. Munroe, of Montreal and New York, were among those largely interested in the old company, and with their confreres they immediately recognized the fact that a smelter, without a large mine to back it with ample supplies of ore was of about as little use as a mine without a smelter—especially in dealing with low grade ores, where the smelting must be done close to the mines, as the value of the ores will not stand the expense of long railway hauls.

Thus negotiations were at once started for the formation of a still larger company, which should acquire the smelting plant and mines of the old company and a number of other mines, already developed to the shipping stage, and which would afford a steady supply of suitable ores. Several months were required to get the details completed and the additional capital interested, the latter almost entirely coming from the money centre of the American continent, New York city. But eventually success crowned their efforts, and the present company was formed and took over the famous Brooklyn-Stemwinder group in Phoenix camp, the Athelstan group in Wellington camp, the Sunset in Deadwood camp, and a three-quarters interest in the Mountain Rose in Summit camp, as well as the smelter at Boundary Falls.

The Montreal & Boston Consolidated Mining and Smelting Co., Ltd., was formed last year under the laws of the province of Ontario, with a capital stock $7,500,000, in $5 shares. Of the capital stock, $6,500,000 was issued to acquire the properties mentioned and to provide $150,000 cash for the treasury of the company. The officers elected were: President, Col George Pope, of New York; secretary-treasurer, A. H. Loomis, of New York; directors: Col. George Pope, C. A. Fish, A. Davidson, John F. Plummer, A. H. Loomis and E. J. Morrison.

In addition to these the following gentlemen are in immediate charge of the company's extensive mining and smelting operations in the Boundary: General manager, H. T. Pemberton; mine superintendent, George H. Collins; smelter superintendent, J. Cuthbert Welch.

VALUE OF ORES.

The following information regarding the mines of the company was issued at the time of the formation of the new company, referring particularly to the values obtained:

The entire six claims in the Brooklyn group are included in the consolidation, including the Brooklyn, Stemwinder, Idaho, Standard, Rawhide and Montezuma, located in the heart of Phoenix camp. Of these claims the circular said:

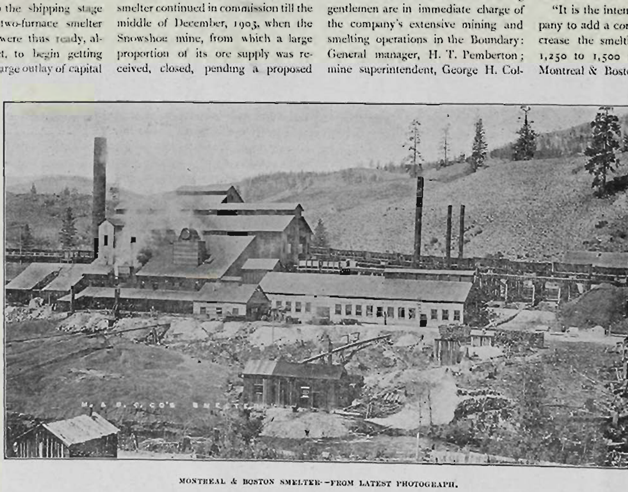
"This is very valuable property, and has been prospected and developed, having in sight at the present time over 350,000 tons of ore, which have an average assay value of 2 per cent. copper, .1 ounce of gold and .3 ounce silver. It has sufficient equipment to take care of 500 tons per day, and in addition to this a claim owned by this company, known as the Rawhide, which is a quarrying proposition, would be within thirty days in a position to produce 300 tons a day. This property is without doubt one of the most valuable mining propositions in British Columbia, and has some excellent showings on its properties which have not been prospected or developed."

Speaking of the Athelstan group, the circular stated:

"The properties of this company consist of two claims, the Athelstan and Jackpot fraction, situated in Wellington camp, British Columbia, about three miles from Phoenix. The report made on this property estimates the ore in sight at 100,000 tons, having an assay value of .2 to .8 ounce gold and .5 to .7 ounce silver. This is a quarrying proposition, and has sufficient equipment to mine 150 tons per day. This ore, as will be noted, runs comparatively high in values, and is a very desirable property.

"At the present time the smelting plant of the Montreal & Boston Copper Co. Ltd., is capable of treating about 650 tons of ore per day, but has sufficient equipment on hand, which could be installed within 30 days, to take care of 1000 tons a day.

"It is the intention of the new company to add a converting plant and increase the smelting capacity to from 1,250 to 1,500 tons per day. The Montreal & Boston company is thor-



MONTREAL & BOSTON SMELTER—FROM LATEST PHOTOGRAPH.

oughly familiar with the above properties, the value and character of their ore, and the amount of tonnage in sight, having had smelter contracts with most of them.

"In forming the above combination the different characters of the ores treated have been taken into consideration, and it is undoubtedly one of the best smelting propositions possible to acquire in British Columbia.

"The consolidated company will be in an independent position, having complete control of all the ore necessary to keep its plant in full operation, and will thus distribute its fixed charges over a large tonnage."

BROOKLYN-STEMWINDER MINES.

One of the earliest mineral locations of Phoenix camp was the Brooklyn mine, one of the deep levels of which runs directly under the city of Phoenix. It was located in July, 1891, by G. W. Rumberger and Joseph Taylor. In 1898 it was acquired by Messrs. Mackenzie, Mann, Cox and others, of Toronto, and put into what was and is known as the Brooklyn and Stemwinder group. These gentlemen formed the Dominion Copper Co., Ltd., with a capital of $5,000,000, to take in the group, consisting of the Brooklyn, Stemwinder, Idaho, Standard, Rawhide and Montezuma, and it did quite extensive development work on the properties—in all something like 5,000 lineal feet.

For nearly three years, however, the properties have been idle up to last summer, when they were taken over by the Montreal & Boston Consolidated. Since that time they have been most vigorously operated, and in the short time that shipping operations were conducted, to January, 1905, the group had sent to the company's Boundary Falls smelter between 25,000 and 30,000 tons of ore. In addition to this, the Dominion Copper Co., which did not sell the dumps of the Brooklyn and Stemwinder mines, have shipped approximately 5,000 tons of ore.

Development on the Brooklyn has attained a depth of 350 feet in the incline shaft. On the 250 foot level there is a drift about 1,800 feet in length, all of which is said to be in ore of a good grade. At the 150 foot level, a considerable amount of drifting has also been done on the ore body.

When the Montreal & Boston Consolidated took hold of the Brooklyn, in July, 1904, they found it necessary to straighten out and retimber the shaft, in order to admit the skips. This was done, ore pockets and runways put in, and since then the mine has maintained and is still maintaining a steady output of about 300 tons of ore daily. Some of the stopes in the Brooklyn are 50 feet across. George H. Collins, the superintendent of the company's mines, says that the mine continues to improve in general appearance, and that its ore reserves will last for many years, even when the output is increased, as it will be.

Within the last month or two a new air compressor has been installed at the Brooklyn, being one half of a 20 drill machine, of the latest type. This, however, has not proved sufficient to furnish power for pumping, hoisting and operating drills for the Brooklyn and Stemwinder together, and the other half of the compressor, it is said, will soon be ordered. An 80 horsepower hoisting engine is in use at the shaft of the Brooklyn.

RAWHIDE MINE, SHOWING TRAMWAY AND ORE BINS.

The Stemwinder mine, almost adjoining the Brooklyn, has an incline shaft down nearly 400 feet. The only drifting that has been done in this mine is at the 114 foot level, but the ore taken out is some of the best from any mine in the Boundary. In fact, in the early days of the Boundary, before the Granby mines, the Mother Lode and the Brooklyn had had as much development and shipping as they have now, the Stemwinder was commonly reputed to be the best mine in this district.

Since taking hold, Supt. Collins has retimbered the Stemwinder shaft, put in runways, fitted the skip, and is only waiting until he has power enough to spare to operate the 50 horsepower hoist to put the Stemwinder in complete operating order.

STEMWINDER MINE.

Across the valley from the Brooklyn is the Idaho claim, which has a tremendous surface showing, and has had some development done. The Brooklyn workings extend into the Idaho, and in the course of time the Idaho will doubtless be one of the big shippers of the group.

RAWHIDE QUARRY.

The Rawhide mine is located away from the other Montreal & Boston properties, distant about half a mile, and adjoining the well known Snowshoe. The Rawhide has proved a wonder to many a man in this section. Up to a few weeks ago it had never shipped a ton of ore, but is now regularly sending out about 300 tons per day to the company's Boundary Falls smelter. On the surface the Rawhide has always had a marvellous showing. The tunnel has been driven into the hill about 500 feet, and a raise made to the surface, about 180 feet. The last hundred feet of this raise is all in ore of a good grade.

When Mr. Collins took charge, he had a tramway built 800 feet in length, to the ore bunkers located on the C.P.R. tracks, which are also connected with the mouth of the tunnel. Most of the work was done on the top of the hill, however, where the ore is literally quarried out in a most economical manner. At the Rawhide black powder is being used for blasting operations, a good deal like the system employed by railway graders. Thus far it has been found to be a great success. The ore quarry of the Rawhide has about five acres of ore on the surface, which it is known extends down about 100 feet, and no one knows how much deeper. It is, therefore, safe to say that the Rawhide could ship 300 or 600 tons of ore daily for many years, and the ore itself is said to be of a most satisfactory grade.

The Mountain Rose, in Summit camp, in which the Montreal & Boston Consolidated have a three-quarters interest, is being worked by a small force of men, some of the ore going to the company's smelter at Boundary Falls, and the balance to the B. C. Copper Co.'s Greenwood smelter. The ore is of the fluxing character prevalent in that locality, and is cheaply mined, or rather quarried, and shipped.

The Lancashire Lass, in Summit camp, is another property controlled by the Montreal & Boston, and which is being steadily developed. Its surface showing is a large one, and gives promise of growing into a mine of much importance when sufficient work is done on it. At present a shaft is being sunk by contract on the large body of ore.

COMPANY'S SMELTER.

A progressive policy was also followed during 1903 by the Montreal & Boston, operating the smelter at Boundary Falls. At the commencement of the year only one furnace was in blast at these works. In the spring a second was blown in and later a third was obtained, but this last was not then erected. The furnaces here are 40x176 inches inside tuyere line, and each has a nominal capacity of 300 tons every 24 hours, being somewhat larger than those in use at the other two district smelters.

Three Connellsville blowers have been installed at this smelter, two of them in 1903. One No. 7 and one No. 7½ have their own direct-connected 75 horse power Erie steam engines, while the third, a No. 8, is direct-connected to a 125 horse power Erie engine, this last mentioned being large enough to provide blast for two furnaces. A Canadian Rand Drill company's 7x12 locomotive and seven

BROOKLYN MINE AND PART OF CITY OF PHOENIX.

LOADING ORE AT RAWHIDE QUARRY.

5-ton Union Iron Works slag cars were also purchased, and rails were laid to provide for dumping the slag hot instead of granulating, this change having been found necessary here as well as at other district smelters. Additions to plant and machinery and to buildings, etc., involved a total outlay of about $70,000.

The tonnage of ore treated at this smelter during 1903 was 132,570 tons, of which only 317 tons were dry ores. The 132,253 tons of wet ores produced 3,041,104 lbs. of copper, 52,278.74 oz. silver and 7,850.005 oz. gold. The dry ores yielded 20,474.57 oz. silver and 150.906 oz. gold. There were 1,061 tons of United States (Republic camp) ores treated, these producing 4,592.69 oz. silver and 615.122 oz. gold.

The district mines that sent ore to these works in 1903 were the Sunset, Snowshoe, B. C., Winnipeg, Athelstan, Providence and Elkhorn, the two last named sending gold-silver quartz ores. The management of this smelter gave the smaller low grade mines a smelting rate that enabled them to work to some advantage to themselves, which they could not well have done had the freight and treatment charges been high.

The smelter site is on Boundary creek, about four miles below Greenwood, and as many miles above Midway. The smelter buildings are so arranged that there is ample room for such enlargements as are likely to be undertaken by the company's management in the near future. The smelter is distant by rail from the company's Sunset mine in Deadwood camp between seven and eight miles, and from the Phoenix camp mines about 20 miles. Side tracks from the C.P.R. have been built to the smelter, and the survey of the Victoria, Vancouver and Eastern extension of the Great Northern railway, which this winter completed building its line to Phoenix camp, runs close to the smelter also. So that in a short time, comparitively, the smelter will have the benefit of two railways for transportation purposes.

During the year 1904—that is, from the time the smelter resumed operations early in October, to December 31st—the mines that sent ores to the Montreal & Boston smelter were the Brooklyn-Stemwinder group, the Sunset, the Athelstan-Jackpot, the Rawhide, the Mountain Rose and the Emma, all Boundary district mines. Very little custom ore was sent to the smelter, or in fact is now being sent there, the company finding that the ores from its own several properties make an excellent combination without the necessity of buying outside ores.

The production of matte was approximately 1,125 tons; this was bessemerized at the B. C. Copper Company's smelting works, Greenwood. The approximate production of metals was as follows: Gold 3,435 ozs.; silver, 13,494 ozs.; copper, 920,000 lbs.

Only one furnace was blown in when these smelting works were started up, as it was necessary to put the company's various properties in shape to maintain a steady output of ore and this furnace has been operated without interruption. A few days before the new year a second furnace was started. A third is being erected, an ample amount of ore for all three now being practically assured.

The company will very shortly be in a position to mine and ship from its own properties all the ore, in both quantity and variety, required to keep its works going at full capacity, which will be about 1,000 tons daily for the three furnaces, so the maintenance of a comparatively large production of copper, with the precious metals associated with it in district ores, is looked forward to with every confidence. The installation of a converting plant is proposed, and this will no doubt be provided as soon as shall be practicable—probably next spring or summer.

FUTURE OF THE COMPANY.

The task of getting the properties of the Montreal & Boston Consolidated into one combination was anything but easy, and while it was in progress, mining men most familiar with the various properties of the Boundary were free to predict that, if it was accomplished, it would afford one of the best combinations yet made in this section—provided, of course, that it was properly financed and worked in the best possible and most economical manner.

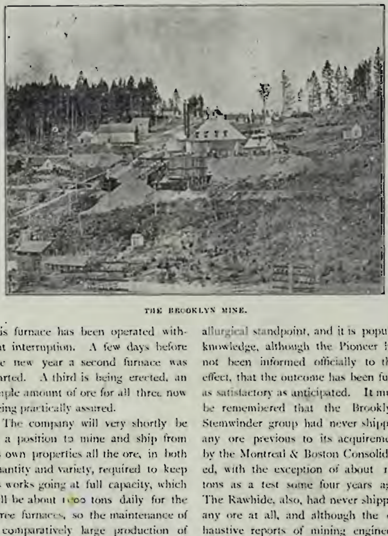
After one furnace had been operated three months on the ores coming solely from the mines acquired by the corporation, from October to January, those in charge were in a position to judge what the result was from a metallurgical standpoint, and it is popular knowledge, although the Pioneer has not been informed officially to that effect, that the outcome has been fully as satisfactory as anticipated. It must be remembered that the Brooklyn-Stemwinder group had never shipped any ore previous to its acquirement by the Montreal & Boston Consolidated, with the exception of about 150 tons as a test some four years ago. The Rawhide, also, had never shipped any ore at all, and although the exhaustive reports of mining engineers had all been most favorable, and the properties had been acquired on what was then known of them, it remained for a considerable smelter run to prove their actual worth. It also remained for the officials of the company to prove the reported extent of the ore bodies. This phase, too, has been looked after carefully, with the result that the management of the company is more than satisfied with the ore reserves.

Much has been written in the last six months about the Montreal & Boston Consolidated, on account of the importance of the undertaking and the prominence of the mines that were being taken over by the new company. The old Montreal & Boston concern was badly handicapped in not having its own mines to supply an ample supply of the kind of ore needed, and the company, consequently, passed through many vicissitudes. From all appearances, that period is now over and past, and the company is entering upon a period of steady production and prosperity, to be followed in due time by one of dividends—like other companies that have the requisite capital, management and mines.

In addition to providing funds for the acquirement of the mines acquired, those financing the new corporation had to do no small amount of bettering at the mines themselves, to get them into that position where they could maintain a steady output of ore, not only for one furnace at the smelter, but for three and more, in all probability, as time goes on. While the mines themselves were well developed and equipped with machinery, they required many things, like large ore bunkers, etc. As a sample of requirements, it is said that since starting, the company has placed orders for considerably over 500,000 feet of lumber for various purposes.

It must be a source of satisfaction, however, for those interested, as well as for those directly in charge of the operations of the company in the Boundary, to know that their efforts have been rewarded with a large measure of success. In Mr. Pemberton the company evidently has a man who has had a good business training, and will take good care of that part of the business. In Mr. Collins, as superintendent, they have a man who not only has had no little experience in mining, but is familiar with the mines of the Boundary and their systems of working to the best advantage. In Mr. Welch the company has a smelter superintendent whose work speaks for itself, and it is, after all, the actual results in dollars and cents that count.

It has been the policy of the management to cut expenses to the lowest notch, consistent with getting the results aimed at, and this policy is being steadily adhered to. That the company has every reason to feel satisfied with the results thus far attained, goes almost without saying. There is, therefore, every reason to believe that it will become what was predicted of it at the outset last summer, if the same policy is continued—namely, one of the most important of the copper producers in the Boundary district.



THE BROOKLYN MINE.

MONTREAL AND BOSTON SMELTER—TWO YEARS AGO.

PROMINENT HOTELS OF PHOENIX.

Hotel Balmoral.

ONE of the prominent hotels of Phoenix is the Hotel Balmoral, located in the center of the upper part of the city, at the corner of Knob Hill avenue and First street, opposite the Bank block. The building is one of the best constructed in the city, and was originally intended for office purposes. Last October J. A. McMaster leased the building, and since then the interior has been completely transformed, it being one of the best and most comfortable hotels in the Boundary. It is arranged for the convenience of traveling men and the public generally, and special attention is paid to the cuisine.

John A. McMaster was born at Orangeville, county of Dufferin, Ontario, in 1866. He came west in 1897, locating first for a time in Vancouver. In 1898, hearing of the growing activity of the Boundary, due to the construction of the C.P.R. into this section from the Columbia river, Mr. McMaster settled at Cascade, then one of the most prosperous towns of the Boundary, where he successfully built and conducted a hotel for a year. The next year he built the Columbia hotel at Eholt, and the year following the Union hotel in the same place, where fortune smiled upon him until he concluded that he needed a wider field and a larger place for his efforts in the hostlery line.

He knew that Phoenix was practically the backbone of the Boundary, and was consequently a good place to tie to, so he finally secured the lease of the building referred to and started to make a good hotel of his present location.

The Hotel Balmoral has about 20 rooms, with the additions which Mr. McMaster has recently made, but he finds that, even so, it is not possible, most of the time, for him to accommodate all the guests that desire accommodation at his house. Consequently, it has been practically decided to add a third story to the hotel some time in the coming spring.

Brooklyn Hotel.

ONE of the most conspicuous hotels in Phoenix is the Brooklyn, located on the corner of Dominion avenue and Phoenix street, directly opposite the postoffice, and within a stone's throw of the new Great Northern passenger station. The hotel was built five years ago, at the time that Phoenix began to grow, and is 35x65 feet in size, three stories high, containing about 30 rooms. The Brooklyn is owned and conducted by Eugene P. Shea, who has been in the hotel business here for several years.

Mr. Shea, while a British citizen, was born at Saranac Lake, New York, in the heart of the famous Adirondack mountains, but came west years ago. For nearly twelve years he was a resident of Butte, Montana, where he was engaged in mining and other pursuits. At one time he was on the police force of Montana's well known mining camp.

About ten years ago Mr. Shea first came into the Boundary on a prospecting trip—at a time when there were practically no roads and few trails. He was one of the original locators of the Blue Jay claim and of the Red Rock, near Phoenix, which are well known here. There was little encouragement for business men or prospectors in those days, however, and Mr. Shea concluded to wait awhile before settling in this locality.

In the spring of 1899 Mr. Shea arrived in the Boundary to stay, living first for a time at Greenwood, and then coming up the hill to Phoenix. About three years ago he entered into partnership with James Marshall and together they conducted for a time the Bellevue hotel and later the Summit hotel. Two years ago next May Mr. Shea purchased the Brooklyn hotel, so named because the well known Brooklyn mine shafthouse is within 500 yards of the building, though situated on the hill above it, and he is today one of the best known hotel men in the Boundary Country.

Black's Hotel.

PERHAPS the one hotel on Dominion avenue, below the postoffice, that has been as well known as almost any other in the Boundary is Black's hotel, of which W. S. Doyle & Co. are the proprietors.

Black's hotel was constructed in 1899-1900 by Ira W. Black, who had conducted hotels in various parts of the Kootenays and Boundary for years, and at last settled in Phoenix, after satisfying himself thoroughly that right here was the making of one of the most permanent of mining camps in the entire west. He put up the building amid many difficulties, and conducted it for some time, when it was sold to J. B. Macaulay, the present owner, who leased it to Mr. Doyle.

Black's hotel is one of those that was solidly built throughout and well finished and furnished. With its three stories—at the time it was constructed being the only building of that height on Dominion avenue—and its nearly 20 rooms, it is in good shape to care for the many guests that have come within its doors, there being also a commodious dining department in connection.

Mr. Doyle, who has been a resident of the Kootenays and Boundary for years, came here from the Slocan, and took hold of this hotel about two years ago. By his strict attention to business he has secured his share of the patronage of the public, the last year especially being a satisfactory one with him and his hotel. The hotel itself is located on a busy street, and, like several hotels on Dominion avenue, is not far from the new Great Northern passenger and freight station.

Central Hotel.

IN PHOENIX there is but one hotel, not identified with any mining concern, that is close to the Granby mines. This is the Central Hotel, owned and conducted successfully for some years past by Frank Anderson.

The Central Hotel is located on the corner of Old Ironsides avenue and Second street, within a few hundred yards of the Granby No. 2 shaft. The building, which is two and a half stories in height and has 16 rooms, was erected in the year 1901 especially for the present purpose, and has been conducted by Mr. Anderson since that time. With its ample accommodations for guests, and its well conducted dining room, in charge of Mrs. Elmgreen, it has always enjoyed a fair measure of prosperity.

Mr. Anderson, who is a native of Sweden, came to this side of the water in 1888, and located for a couple of years at Manchester, New Hampshire. But young men have always been disposed to take Horace Greeley's advice to "go west," and in 1890 Mr. Anderson found himself in the capital of Montana—Helena—then a mining camp of no little importance. After spending four or five years in Helena, and hearing of the rush that had been taking place to the Slocan mining district, Mr. Anderson came to British Columbia, spending several years in and around the Slocan and Rossland camps, in the days when everyone was making money in those sections.

In 1899 Mr. Anderson concluded that the Boundary country looked good to him, and accordingly he made his way thither, and of course came to Phoenix, the place where the greatest payroll was then, and has been ever since. Mr. Anderson soon afterwards embarked in the hotel business, and has continued in it ever since, being satisfied that, from small beginnings, the camp would grow to the importance which it has since attained, and which bids fair to grow much greater in the future.

Bellevue Hotel.

IN THE early days of Phoenix the construction of hotels, or in fact of any other kind of buildings, was no inexpensive matter. When the Old Ironsides townsite was first placed on the market, in November, 1899—it being what is generally now known as the upper part of the city—intending purchasers came here from hundreds of miles, and the first day every desirable lot was disposed of. In fact, many went away disappointed that there were not more lots on Knob Hill avenue. Among those purchasers who were successful was W. H. Bell, an old Rosslander, who secured the lot where the Bellevue now stands. Mr. Bell knew the value of having practically the first hotel in the upper town, and he lost no time in putting up his building, even though it was the dead of winter before it was completed and occupied. Rough lumber in those days cost the consumer about $26 per thousand on the ground, and had to be hauled by teams up the steep hill from Greenwood, a difference in elevation of some 2,300 feet.

When the Bellevue was completed it was at once leased, and has always been occupied and enjoyed a fair share of the public patronage ever since that time, and under the present proprietors, Messrs. Greig & McDonald, its reputation is fully sustained.

Alexander Greig is a native of Kincardinshire, Scotland, and came to Canada, when he was but ten years of age, making his home at Ottawa. Later he removed to Wisconsin and then to the state of Washington, locating for a time on the shores of Bellingham bay. In 1893 he came to British Columbia, and participated in the rush to the Slocan mines, settling for a time at Kaslo and Whitewater. But the drop in the price of silver and the barring out of lead from the markets of the United States by the lead trust was fatal to the rich Slocan district for years, and in a business way there was little encouragement.

Just about this time the mammoth copper ledges of the Boundary began to come into prominence, especially with the construction of the C. P. R. to this section at a cost of four or five millions of dollars. Previous to this Mr. Greig had made a trip to the Boundary, and was in Greenwood in 1895, when the town was first surveyed and platted. But he came to Phoenix to stay in the year 1900. Not seeing a business opening just then, he went to work in the Granby mines, where he was employed until he formed a partnership with Hugh D. McDonald, and embarked in the hotel business.

Hugh D. McDonald comes from Glengarry county, Ontario, but with the restless spirit of so many in the east, he came west and settled at Fairhaven, Washington, in 1891. He saw the boom start there and fall down again, and saw his own savings wiped out with thousands of others. Since he left there he has also noted that Fairhaven, or Bellingham, as the combined towns are now called, is one of the most prosperous sections of Washington. Mr. McDonald reached Phoenix in 1901, and after being here for a short time, decided to start in business with Mr. Greig.

For a time Greig & McDonald conducted a quiet business in the Maple Leaf hotel on Old Ironsides avenue. But general business gradually moved away from them to Knob Hill avenue, and they quickly noted that a change to the lower street would be advisable. Accordingly Greig & McDonald purchased the Bellevue hotel outright from Mr. Bell over two years ago, and have conducted the business at that location since then, being regarded as one of the substantial firms of the city in their line of business.

Summit Hotel.

THE Summit Hotel, like the Bellevue, was one of the first hotels built on the Old Ironsides townsite, in the winter of 1889-90, in the days before the city was incorporated, and immediately following the placing of that townsite on the market. It is located diagonally across First street and Knob Hill avenue from the Eastern Townships Bank, and is therefore in a most desirable situation. It was rented by the owner to different persons up to last summer, when David Oxley leased the property, and later took in John Hartman as partner, forming the firm of Oxley & Hartman.

David Oxley is an Englishman by birth, his native place being Sheffield, but he has lived on this side of the big pond for upwards of 25 years. For the last six years he has been a resident of the Boundary, most of the time in and around Phoenix. For an extended time he followed mining exclusively, having had charge of the Winnipeg and Athelstan mines for several years up to the time he went into the hotel business here.

John Hartman, the partner of Mr. Oxley, is a native of south Germany. He came to British Columbia in 1891, and in 1895 he walked over the well known Dewdney trail from Spence's Bridge to Rossland, in looking over the country, and then had his eye on the Boundary section, through which that old artery of prospectors and trail blazers passed. Later he returned to the Boundary, and has been interested in various hotel enterprises in this section ever since.

Both Mr. Oxley and Mr. Hartman have a wide acquaintance in this section, and are favorably known to the traveling public, which serves them in good stead in their chosen business. An excellent dining department is connected with the Summit Hotel, known as the Metropolitan Cafe, of which Danny Dean, who has long been a resident of the camp, is in charge.

DAVID OXLEY.

JOHN HARTMAN.

The Mint Hotel.

JOSEPH H. GRAHAM, proprietor of the Mint Hotel, was born and brought up at Smith's Falls, Renfrew county, Ontario, and before he started out for the west was in the hotel business in his native town. Mr. Graham arrived in British Columbia in 1897, and spent some time in East Kootenay before coming to the Boundary the following year. In 1899 he decided that Phoenix, which then did not have a graded street, nor even railway communication of any kind, was a pretty good place to tie to, so in the fall of that year he built the Union Hotel, on lower Dominion avenue. This hotel he conducted till the V. V. & E. extension of the Great Northern reached Phoenix, when, the survey running directly through his hotel property, he disposed of the same to the railway company.

A little later Mr. Graham purchased the Mint Hotel property, and in June, 1904, opened the same to the public. The building itself is 30x50 feet in size, two stories high, and well located nearly opposite the postoffice.

A restaurant is conducted in connection with the hotel, the building itself being close to the new Great Northern passenger station.

Mr. Graham's faith in Phoenix is of the kind where he invests, and like many others, he still believes that this camp will in time become one of the greatest, if not the greatest, in the west. He has served two terms as city councilman since the city was incorporated.

Knob Hill Hotel.

ONE of the hotels of Phoenix that has been largely patronized in the past, and which still enjoys a good steady trade, is the Knob Hill hotel, located on First street, between Knob Hill and Old Ironsides avenues. While not the largest hotel in Phoenix, it is compactly built, and with its 14 rooms does a business that is very satisfactory to the present proprietor, James E. Bell. This house, which was built in 1891 by Morrison & Anderson, is quite centrally located in the upper part of the city, and makes a special bid for the trade of the travelling men.

The culinary department is under the personal supervision of Mrs. Bell, which is a guarantee that everything in this department is well looked after, and judging by the usual crowded state of the dining room, it is appreciated.

Mr. Bell was born in Bradford, county of Simcoe, Ontario, and first came west in the year 1882, locating for a time at Winnipeg. But the inducements of the Manitoba capital and its severe winter climate were not then sufficient to persuade him to stay for any length of time, and he came farther west. Attracted by the boom in the Slocan district, when silver was worth $1.25 or thereabouts per ounce, Mr. Bell located in Kaslo in 1891 with his family, and made his home in and around that entrepot to the growing silver.lead district for about nine years. Like so many others, however, when silver went down to 50 or 55 cents per ounce, the effect on that district was to largely depopulate it, and he turned his eyes on the Boundary country as a good location in which to cast in his lot.

Arriving in Phoenix in 1902, Mr. Bell finally secured a lease on the Knob Hill hotel in July, 1904, since which time he has given his entire time to that hostelry, and states that he has done a good business almost from the first day that he took hold.

The Knob Hill hotel was so-called after the famous mine in this camp of the same name, located on the hill just above the townsite of Phoenix. In addition to the general travelling trade that comes to this hotel, not a few of those employed at the mines find it a home-like place to put up at.

HIGH GRADE MINES OF THE BOUNDARY.

AN IMPORTANT factor in the mining history of the Boundary is the high grade mines of this section. Boundary's greatest fame arises from its low grade copper deposits, but within the last two years the high grade gold and silver producers have made enviable names for themselves and no inconsiderable profits for the owners. When investors have in a couple of years or less received back every cent they put in, and still have their interests left intact in producing properties, such facts tell a story that is well worth paying attention to. Dozens of high grade properties have been taken over and worked with success, and few there are that have failed to make good when exploited in a business like manner.

An advantage of the high grade mine over the low grade property is that the high grade mine can be worked with few men, comparatively small investment for machinery, and returns from shipments can be had quickly; while the low grade mines require large capital expenditures, extensive machinery equipments, heavy payrolls, years of development, and smelters of their own to be worked most profitably. In other words, the high grade mine gives the small investor a chance to get quicker returns.

It will be impossible to treat here of all the high grade mines of the Boundary, but mention will be made of most of them, and a description of a few, as space will permit. The banner property in this class is the Providence, the history of which is well known, having been a profitable undertaking for three years, and now looking as well as ever. Some $22,000 in dividends have been paid to the shareholders in this property, with the almost certainty of their getting many more dividends.

The Elkhorn, adjoining the Providence, owned by Phil McDonald and James Sutherland, has paid from the grass roots, and is paying handsomely now. In the same locality are the Gold Bug, Strathmore, Combination and others, that so far are coming up to expectations. These claims are all located north of Greenwood within a mile or two.

Coming nearer to Phoenix, we find a group of properties in what is known as Skylark and Providence camps, that are proving most gratifying to those who have them under development. These include the Last Chance, which shipped years ago and is now doing so once more, the Crescent, Lake and others near by. Then the Skylark also is once more making an enviable name for itself from its development by a Phoenix syndicate and its shipping of good ore.

Near the Skylark are the Silver King, Silver Cloud, Bay, E. P. U. and others, not excepting the Helen and Barbara. Nearly all of these have done some shipping, with returns running as high as $150 or more per ton, and some of them are particularly attractive to high grade mining men.

Skylark and Denver Claims.

THE SKYLARK group, consisting of the Skylark and Denver mineral claims, is situated about half way between Phoenix and Greenwood, B. C. These claims were discovered in 1892 and were worked for some time with very good results. Later, however, owing to the drop in the price of silver and to the excessive cost of transportation it was found necessary to discontinue work on this group as well as on all other high grade properties in this part of the Boundary.

It is hard to say when the high grade properties would have been worked again had not the very low grade properties in this vicinity turned out so well and made a name for themselves all over the world. It is due to this fact alone that the Boundary country has been opened up by the railroads and that three large smelters have been built and put into operation.

Even after the railroads and smelters were built it was some time before mining men turned their attention to the high grade claims in the Boundary. People seemed to have forgotten that the Boundary had any high grade ore, and it was not until 1902 that eyes were opened by the wonderful showing made by the small group of men who bonded the Providence claim near Greenwood. From this time on everybody realized that the future of this country did not depend wholly on the immense bodies of low grade ore, but that the small veins of high grade ore were to do their share in bringing the country to the front.

The following, being a small portion of an article written in October 1893, by Major Megraw, now of Hedley, will be of interest to those following the work now being done on the Skylark.

Mr. Megraw wrote: "Leaving Greenwood camp (Phoenix) the trail leads northerly through thickly timbered mountains. This is a very difficult country to prospect owing to the thick brush and the depth of the soil which covers up the formation. Turning westerly again, the trail occasionally emerges from the timber to beautiful spots of range land, the long grass of which keeps the miners' horses sleek and fat, and at length

THE SKYLARK CAMP

is reached. This camp was only discovered late in July of the previous year (July, 1892) by Mr. Atwood, the first claim, the Skylark, being located by S. Boyer, and afterwards gathered in by Howard Walters, the president of the Spokane & Great Northern Mining Co., which has become so largely interested in the Boundary creek section.

"The ore of the Skylark is very high grade and at the time of our visit only three claims had been located on the ledge, but others had been located in different directions. The camp is watered by a small stream known as Twin creek, which empties into Boundary creek. Taking the camp as a whole it may be most briefly described as a high grade silver proposition. The principal value is in silver but there is also a fair showing in gold. The Skylark claim not only gave a name to the camp but also made a name for itself and money for its owners. It was leased for eight months to Messrs. McCarron, Wallace and Currie. They were required to work on the vein and were to receive one-third of the ore that was fit to ship and $10 a ton for mining, sorting and packing. About seven tons of ore were being sent out weekly by pack train to Grand Prairie (Grand Forks), from which point it was teamed to Marcus and thence shipped to Tacoma. All second class ore that will not pay to ship that way is left on the ground, and in sorting out the ore nothing less than that going 150 ozs. in silver is selected. In speaking of a mine, nothing talks so eloquently as results, and the following figures we obtained from a report on a shipment of 344 sacks which were sampled and sent forward gold, 1.13 ozs. per ton; silver, 261 ozs. per ton."

Major Megraw's article says no more about the Skylark claim, but goes on to mention other claims further down the gulch toward Greenwood.

The Skylark and Denver mineral claims were bonded from Giovanni Lavagnino, of Salt Lake, on October 1st, 1904. W. J. Wood secured the bond and associated with himself Messrs. A. B. W. Hodges, R. B. Boucher, H. A. Wright, W. S. Macy and O. B. Smith, Jr., all of Phoenix, B.C. Since that time Mr. Wood has had to leave Phoenix for England and before going sold his interest to C. D. Hunter.

It took nearly a month to get the mine unwatered and cleaned out so that work could be carried forward. While this was being done two men were put to work on the surface and uncovered some beautiful ore, and before snow came the ledge had been exposed for a distance of between 300 and 400 feet.

The underground work consists of the following: A shaft, dipping to the east at about 55 degrees from the horizontal, follows the vein to a depth of 80 feet. At this point the vein faults to the east about 30 feet. It was easily picked up again by a crosscut, and a winze has been sunk on it for another 20 feet. This winze will be sunk 50 feet more as soon as possible. On the 80 foot level a drift has been run on the ledge for a distance of over 250 feet. This drift will be carried north and south as fast as possible.

SKYLARK SHAFTHOUSE AND DUMP.

The ledge itself runs north and south and dips to the east. It is very regular and varies in width from a few inches to over a foot. It carries a great deal of antimonial silver and native silver. The ore is easily mined as the walls are exceptionally good and the ore is not frozen to them in the least.

During October, 1901, the number of men working on the Skylark, under Foreman Rowe, was six. On November 1st the force was increased to eleven, which force is still working. As stated before, it took over a month to get ready to mine, so that no ore was shipped until November 25th, 1904. From that time to the present (January 1st, 1905) three cars have gone out, one of first-class ore, one of second-class ore, and one of third-class ore, making a total of 52 tons shipped. These three cars brought in $4,970. The total expenses during the three months for wages, machinery, buildings, etc., was $3,900. At the present time there is ready to ship a car of second-class ore and about ten tons of first-class ore. This will easily net $2,000.

From the above it will be seen that, although no ore was shipped for a month and a half, the people owning the bond on the Skylark have been able to meet their first payment on the bond and pay all expenses of the first three months out of ore actually mined.

With a somewhat larger crew it is expected to carry on development work and also ship from 40 to 50 tons of first-class ore each month and from 40

STOPE AT SKYLARK 80 FOOT LEVEL.

to 50 tons of second-class ore every other month.

At the present time a development company is being formed, to be known as the Skylark Development Co., Ltd. This company will probably take over the bond on the Skylark and Denver mineral claims, paying for the same with shares in the Development Co. This company will be stocked for 250,000 one dollar shares, at least one half of which will be put into the treasury. About 10,000 shares of this treasury stock have already been subscribed for at 50 cents a share. It is not the intention of the company to let out much more at the present time.

The Barbara.

THE BARBARA, separated from the Helen by one claim, was acquired last summer by Chicago parties and is now being developed. It lies directly east of Greenwood, Copper street abutting on its west line. A vein from seventeen to twenty-six inches in width constituting one of the biggest quartz leads in the camp, crosses this property in a northerly and southerly direction and traverses other adjacent claims. Its trend is north and south. The lode has thus the same characteristic strike and dip of all the parallel veins so far discovered and opened up in the south belt. The mineralization closely resembles that of the Helen, from which it is separated by one claim; and also that of the E. P. U.

An incline shaft on the lead extends 40 feet to the first level, where the vein was found to have broken over for a distance of 40 feet. At the point where the ore was again encountered the shaft was sunk on the lead for a distance of 84 feet, giving a vertical depth from the surface of the slope of the hill of 140 feet. From the 40 foot level of the lower incline shaft drifts were run north and south on the ore for 54 and 24 feet respectively. It is the intention of the management to continue the work of sinking to the 200 foot level, whence drifts will be driven north and south, thus providing additional stoping ground, and greatly increasing the present ore reserves.

The lead in the lower level looks exceedingly well, being well defined throughout. It averages 14 inches in width and is composed of fine grained galena, iron pyrites and copper sulphides, varying in value from $60 to $82 per ton. W. H. Jeffery, M.E., has been the recipient of many compliments for the efficient and economical manner in which he has conducted the development work. There are twenty-five tons of ore in the dump, and it is being sacked preparatory to shipment to the Trail smelter early next month. The ore in sight exceeds 200 tons.

The vein has been exposed and stripped clean for a distance of 200 feet on each side of the shaft. Ore taken from the galena outcrop gave an average assay of $78.60 per ton in gold, silver and lead. The Barbara vein is a parallel lead to the veins on the E. P. U. and Goldfinch mines. The Barbara claim adjoins the Goldfinch mine on the west.

J. C. McPherson, of Chicago, is president of the company owning the Barbara.

The Helen.

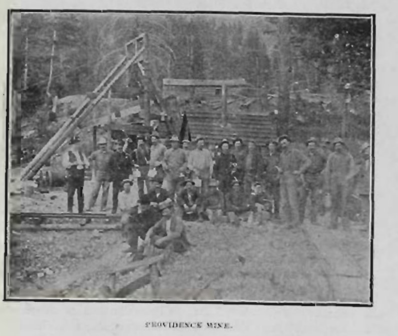
IF UNIFORMLY high assays form any criterion, the Helen promises to prove a veritable bonanza. The surprisingly high values in gold, corresponding to, but surpassing the returns from adjacent properties, have about established the fact that the mines in the south belt will be mainly gold producers, in contradistinction to the Providence and Elkhorn, and other properties in the north belt where silver values predominate.

The Helen is situated on the east side of Boundary creek, adjoining Greenwood on the south and Anaconda on the east. In an air line the Greenwood smelter is 1500 feet distant from the mine workings.

The property was bonded last March by local parties and the work has proceeded under the direction of W. H. Jeffery, M. E.

At various periods in the past different individuals had thrown up bonds on the Helen, owing to their failure to obtain uniform values and the discouraging difficulties presented at the bottom of a 40 foot shaft where the lead virtually pinched out. The best assays which have been obtained from the pay streaks varied from $2 to $20 and $30 per ton in gold and silver. The parties now holding the bond, however, have had exceptional success. By cross cutting and following a horizontal seam an inch wide from the fault at the bottom of the shaft to a point forty feet east, the lead was again recovered at its natural size on its original dip at an angle of fifty degrees to the east, the strike being northerly and southerly. Concurrently a drift was run south 29 feet on the vein above the fault on the same level.

At a point 19 feet south of the shaft a series of samples gave average values of $115 per ton in gold and silver, the former predominating. Ten feet farther south on the same lead just above the fault another series of samples gave average values of $225 per ton in gold and silver in the same order. One sample ran $525 per ton. The drift has been extended farther south and raises have been made in the same direction at the same time in order to extract this high grade ore.



PROVIDENCE MINE.

From the point in the 40 foot cross cut where the ledge was rediscovered this incline shaft was sunk 50 feet on the ore. This working will be extended to a depth of 200 feet with drifts north and south on the vein at intervals of 50 feet. Now that the difficulties presented by the fault have been overcome the ledge has been found in place stronger than ever. Its width in the incline shaft varies from six to twenty-four inches. The ore between the walls is singularly free from waste, and the recent development work has been skillfully planned and executed.

The ore is so high grade in character that it is being sacked preparatory to shipment to the smelter.

The outlook for the Helen is exceedingly bright as three other quartz leads to No. 1 vein can be traced on the surface north and south across the Helen and several adjacent properties. Prospect holes and stripping at frequent intervals on all these lodes have proven their continuity. They average from ten inches to two feet in width. As they are parallel to and have the same mineralization as the lead now being developed, the same values as the No. 1 vein, from which they are separated by distances averaging 80 to 800 feet, will be encountered. As the Helen ground rises abruptly to the east, Mr. Jeffery proposes to extend the cross cuts from No. 1 incline shaft and tap these parallel leads at depth.

From the above short description of the Helen and Barbara properties, the owners of the mines have, apparently, every reason to be justified in the belief that they are possessed of valuable claims, which will, with a continuation of development, as in the past, prove up to their entire satisfaction, as so many high grade mines near Greenwood have done in the last year or two, and be a source of profit to those interested. Both the mines have been operated thus far in a businesslike manner, and a continuance of this policy with such encouraging properties should bring its own reward to those who have had the courage to invest their money in them.

Republic Group.

The development work carried on at the Republic group in Smith's camp since last September in order to secure a series of shipping tests has resulted very satisfactorily. The quantity of ore exposed on three of the properties, the permanence and continuity of the leads, coupled with the smelter returns all combine to demonstrate that the Boundary is about to add another producer to its growing list of high grade propositions.

The Republic group comprises the Last Chance, Republic, None Such and Hidden Treasure mineral claims situate in Smith's camp, one mile west of the Montreal & Boston Copper Co.'s smelter at Boundary Falls. It is owned by the Republic Gold Mines, Ltd., of which W. T. Smith, a pioneer of the district, is the general manager. Mr. Smith has just received the smelter returns of a recent carload shipment of 20 tons of ore from the Last Chance claim. The ore was treated at the Hall Mines smelter, Nelson, B.C. The carload according to the official certificate, averaged 18⅔ per cent. lead, $3 gold and 22 ozs. silver, equivalent to $23.40 per ton including the lead bounty. Returns from the second car-

ELKHORN MINE.

load shipment from the same claim have not yet been received but are expected daily; however, the average check samples ran about the same as the prior shipment, indicating uniformity in values. The Last Chance lead varies from eight to ten feet in width and runs northeast and southwest, being traceable on the surface for hundreds of feet. The gangue is quartz; the richest ore being from one foot to eighteen inches wide on the hanging wall side; and the ore on the foot wall varies from two to two and one-half feet in thickness, but is of lower grade. The contents of the entire vein will concentrate at the ratio of five to one. The formation is ideal, the vein occurring in the slate with greenstone or diorite on the hanging wall, and slate on the foot wall.

The None Such claim also made a similar carload shipment, which averaged $10 gold and 2 oz. silver per ton. The vein occurs in the same formation and averages from three to five feet in width. It is the same lead as the one on the Last Chance, the adjoining claim.

The carload shipment from the Republic claim proved even higher, the ore averaging $17 gold and 7½ ozs. silver per ton. The vein runs at right angles to the other lead and is from 12 to 18 inches in width. It occurs in identical formation.

A good wagon road extends from Boundary Falls to this group of mines, affording an inexpensive down hill haul. The C.P.R. traverses the Hidden Treasure, one of the properties of the Republic group. With three shipping propositions the outlook for the company is indeed exceedingly bright.

The Hunter-Kendrick Co., Ltd.

BY ALL odds the largest dealer in general merchandise in the Boundary is the Hunter-Kendrick Co., Ltd., with stores at Grand Forks, Greenwood and Phoenix, the latter being perhaps the most important of all. The company has a capitalization of $100,000, with the following officers: President, W. T. Hunter; vice-president, James Hunter; secretary-treasurer, Chas. D. Hunter. The last named is the manager of the extensive business done in Phoenix.

This company began business in Phoenix in the fall of 1899, securing property and erecting a building on Old Ironsides avenue, where a good trade was enjoyed. In the course of a year or two, however, the business had grown, with the growth of Phoenix, to such dimensions that larger quarters were imperatively demanded. About this time the Bank block, on the corner of Knob Hill avenue and First street, was being erected by Jay P. Graves and Wm. Yolen Williams, and the Hunter-Kendrick Co. leased the lower floor of the large structure for a term of years—with the exception of the corner used by the Eastern Townships Bank. Mr. Hunter realizing that his store must have ample room for still further expansion.

At this location the company today has the largest storeroom in the Boundary that is without partitions, and it is filled to overflowing with a complete stock of groceries, dry goods, men's goods of every description and hardware. In addition to this, the company has a large warehouse on the C.P.R. track.

Goods are purchased almost entirely in car lots, and the eight people employed by this establishment are a busy lot. The last year has been one of the busiest in the history of the company, with every probability of its being still larger this year.

One advantage enjoyed by the Hunter-Kendrick Co. is that the extensive requirements of the three large stores are so vast that the purchases are necessarily made in such large quantities that the best prices of the greatest markets of the country are obtainable. This puts the company in a position to transact business, both buying and selling, to the greatest advantage.

Morrin, Thompson & Co.

ONE OF the most enterprising firms in the Boundary is admitted to be that of Morrin, Thompson & Co., whose extensive premises are located in and adjoining the postoffice block in Phoenix. The members of the firm are John A. Morrin, J. E. W. Thompson and Amos H. Rumberger. Mr. Morrin is a native of St. Augustine, Quebec, and came west in 1894, and to the Boundary country in 1899. Mr. Thompson was born in Pembroke, Ontario, and he started for the west in 1897, reaching the Boundary in 1898, while Mr. Rumberger, although now a resident of Homedale, Penn., was a resident of Phoenix for about a year. After spending a year in Phoenix, Mr. Rumberger returned to his Pennsylvania home, but still retains his interest here.

Mr. Morrin and Mr. Thompson formed a partnership in 1899, and bought the lot where the hardware department now stands, and erected a building thereon that fall. From the first their business has been an excellent one, and has been steadily growing in volume, until the turn over for 1904 was nearly double that for 1903. They deal in groceries and hardware exclusively, but during their first year of business they also handled men's furnishings, etc. In 1901 the firm purchased the stock of the Wynkoop-Stevens Trading Co., and shortly thereafter moved their old store building to the back part of their lot on Dominion avenue, and erected a new and commodious two story building, using the old building as a much needed warehouse.

Morrin, Thompson & Co. have been enterprising and aggressive since they first started in business in Phoenix, and with a thorough understanding of their business, and giving the same their individual attention, they have been successful in building up a trade that is constantly growing in volume. Their location, adjoining the postoffice—in fact, surrounding it—in the lower town, gives them a position that is everything that is to be desired.

McIntyre & McDonald.

THE PALACE Livery Stable, of Phoenix, is known throughout the Boundary country, as well as the proprietors themselves, McIntyre & McDonald, who have been engaged in this business here for several years. The location of the stable on Knob Hill avenue is an excellent one, and this coming spring the firm expects to build another stable adjoining the present location.

Both Mr. McIntyre and Mr. McDonald take an active interest in their business, and with their 30 head of horses and complete outfit of rigs of all kinds, do an extensive and lucrative livery and drayage business to all parts of the Boundary. In addition to this they also handle wood, ice and Galt coal, which is delivered as desired to customers.

Murdock McIntyre is a native of the Atlantic coast, having been born at Sydney, Cape Breton, where he was brought up. In 1896 he struck out for the west, and for a few years was in business in various parts of Idaho and Montana, till he reached the Boundary in 1899, shortly after which the present partnership was formed.

Alexander McDonald was born at New Glasgow, Pictou county, Nova Scotia, and started out west somewhat earlier than his partner. In 1885 he was in California, and for four years remained a resident of the Golden state. Then he gradually worked his way north, spending a couple of years at Portland, Ore., and reached British Columbia in 1892, being engaged in business in Nelson and Slocan for a number of years. In 1898 he was in the hotel business in Cascade, coming to Phoenix the following year, since which time he has been a resident of this place, being elected in 1904 to serve the city as an alderman.

It is a pretty safe statement that there are no harder working men in Phoenix than Messrs. McIntyre & McDonald, which doubtless accounts in large measure for their success.

McRae Bros. & Smith.

THE FIRM of McRae Bros. & Smith has been established for about five years and a half, Messrs. Smith and one of the McRaes having also a store in Greenwood. The firm is made up of John, James and Duncan McRae and Mr. Smith, and since they have been in business in the Boundary, they have built up an ever increasing trade in their several lines. They carry a complete stock of stationery, tobaccos, cigars, confectionery, periodicals, books, sporting goods and fancy goods of all kinds, as well as cameras and photographic supplies.

Originally this firm was located in a building of their own on Dominion avenue, but in the year 1901 they put up a new structure on Knob Hill avenue, especially adapted to their needs, which they have occupied ever since. Last year they found it necessary to add to this building, to give them more room for their extensive stock, which is constantly increasing, and an addition of twenty feet was built.

All of the members of this firm are natives of Ontario, near Sarnia. John and James McRae, who are active in the business in Phoenix, were formerly engaged in trade in Idaho and Montana, and came to the Boundary and to Phoenix in the fall of 1899. Since that time they have given their entire time to the business here, and have consequently built up an excellent trade. John McRae served the city as an alderman for one term with satisfaction to his constituents. James McRae has immediate charge of the photographic part of the business, and has become an expert himself in that line. He has made what are admittedly the best photographs of views and mining and smelting scenes ever taken in the Boundary, and many of the half tones in this number of the Pioneer are from his fine cameras.

With another large stock in the Greenwood store, McRae Bros. & Smith are placed in a position where purchasing can be done in increased volume, which is of no small advantage to them.

Eastern Townships Bank.

THE Eastern Townships Bank was established in 1858 in the Eastern Townships of the Province of Quebec, and is now well know to be one of the most substantial financial institutions of the Dominion. The headquarters of the bank are at Sherbrooke, Quebec, and altogether the bank has 42 offices. The only western offices are at Winnipeg, Manitoba, and Grand Forks and Phoenix, British Columbia. During 1904 ten new branches were established, mostly in the eastern part of Canada, as reported at the forty-sixth annual meeting held at the Head Office on December 7th last. Earnings of ten per cent were made for the preceding year, the bank paying its shareholders dividends of eight per cent during the year.

The assets of the bank are given at $16,198,219.77, and it has an authorized capital of $3,000,000 and a reserve fund of $1,500,000. The officers of the Eastern Townships Bank are as follows:

President, William Farwell; vice-president, Israel Wood. The directors are, N. W. Thomas, Gardner Stevens, S. H. C. Miner, A. C. Flumerfelt, C. H. Kathan, H. B. Brown, K.C., James S. Mitchell and Frank Grundy; general manager, J. Mackinnon; inspector, S. F. Morey. William Spier is the manager of the Grand Forks branch and A. B. Hood the acting manager of the Phoenix branch.

In addition to transacting a regular banking business, buying and selling exchange on any part of the world, the bank has a savings department, where interest is paid at the rate of three per cent per annum—the same as by all chartered banks in Canada. The bank is in the best possible condition to handle financial transactions of the greatest magnitude. This bank recently completed arrangements to issue money orders payable at any banking town in Canada at very low rates.

For the last year business has been most satisfactory at all offices of the bank, and the directors report that the outlook for the future is excellent. During the year deposits have increased by $1,232,077, and now stand at $9,821,026, and the loans stand at nearly eleven million dollars.

The Eastern Townships Bank has branches in the following places:

Bedford, Quebec.
Beloil, Quebec.
Coaticook, Quebec.
Cookshire, Quebec.
Cowansville, Quebec.
Clarenceville, Quebec.
Danville, Quebec.
Farnham, Quebec.
Grand Forks, B. C.
Granby, Quebec.
Huntingdon, Quebec.
Iberville, Quebec.
Lacolle, Quebec.
Lake Megantic, Quebec.
Lawrenceville, Quebec.
Montreal, St. James St.
Montreal, St. Catherine St.
Montreal, St. Lawrence. Main St.
Magog, Quebec.
Masonville, Quebec.
Ormstown, Quebec.
Phoenix, B. C.
Richmond, Quebec.
Rock Island Quebec.
Roxton Falls, Quebec.
Stanstead, Quebec.
St. Gabriel de Brandon, Quebec.
St. Hyacinthe, Quebec.
St. John's, Quebec.
St. Joseph, Beauce, Quebec.
Sutton, Quebec.
Valcourt, Quebec.
Waterloo, Quebec.
West Shefford, Quebec.
Windsor Mills, Quebec.
Winnipeg, Manitoba.

P. Burns & Co.

IT IS probably a safe assertion that no firm is better or more widely known in western Canada than that of P. Burns & Co., wholesale and retail dealers in cattle and general meat merchants. The firm has markets in all the principal cities and towns of British Columbia, Alberta and the Yukon, besides several in Montana, U.S.A., with cold storage plants at Calgary, Revelstoke, Nelson and Vancouver. The head office of the concern is located at Calgary, Alberta, and the head office and stockyards for the entire Boundary are situated at Greenwood.

The business of the firm in Phoenix for the past year has been far in excess of that for any previous year, and has kept four employees busy most of the time. While this increase of business was partly due to the large number of men employed in the Boundary during the last fall and summer on the construction of the Great Northern railway extension to Phoenix, the general business of the firm here has also shown a healthy increase as well. Not only is meat of all kinds handled, but everything that should be found in an up-to-date market can be had.

In the something like forty different establishments, scattered all over the territory referred to, P. Burns & Co. give employment to a small army of men, and it goes without saying that they do the bulk of the business in the meat line in British Columbia and other sections where they are established. The Yukon business, of itself, is a large item in their trade, which is constantly being extended and new shops opened wherever there seems to be a demand for them.

As showing the wide scope of the business of P. Burns & Co., the following partial list of the concern will indicate the territory where the name of the firm is almost a household word:

BRITISH COLUMBIA—

Ainsworth	Nelson
Cascade	New Denver
Cranbrook	Phoenix
Eholt	Revelstoke
Elko	Rossland
Fernie	Sandon
Field	Silverton
Golden	Slocan
Grand Forks	Three Forks
Greenwood	Trail
Kaslo	Trout Lake
Midway	Vancouver
Moyie	Ymir
Nakusp	Etc.

ALBERTA—

Anthracite	Coleman
Banff	McLean
Calgary	Wetaskiwin
Canmore	Etc.

YUKON—

Dawson	Whitehorse

And many others.

As soon as Phoenix became a town of some importance, in the fall of 1899, P. Burns & Co. recognized that it should not be overlooked by their concern, and although there was already another shop being conducted here in the upper town, P. Burns & Co. opened one in the lower town. Both shops thrived as Phoenix thrived, but eventually P. Burns & Co. bought out the opposition shop and afterwards consolidated the two. With their cattle on a thousand hills, more or less, their extensive facilities for slaughtering, curing and marketing throughout the extensive territory above referred to, P. Burns & Co. are in a position to serve their hundreds of thousands of customers to the best possible advantage.

The Wm. Hunter Co., Ltd.

NO MAN, probably, is better known in the Kootenays than William Hunter, who makes his home at Silverton, on Slocan lake. Mr. Hunter was literally one of the earliest pioneers of the Kootenays, establishing a store at New Denver in 1891, which business he gradually extended until he had stores at Nelson, Sandon, Silverton, Alamo, Three Forks and last but not least, Phoenix. Mr. Hunter finally disposed of all of his extensive merchandising interests with the exception of the Phoenix store, and is now devoting a large part of his time to silver-lead mining in the Slocan district, where he lives. The Wm. Hunter Co., Ltd., has a capital of $100,000.

C. H. Reeves is the capable manager of the Phoenix store of the William Hunter Co., and has been for more than a year. He is thoroughly conversant with the dry goods trade—the only line handled in the store, together with men's goods of all kinds—and has made many friends here since making his home in Phoenix.

When Mr. Hunter decided to start his business in Phoenix, he purchased one of the most desirable lots on Dominion avenue, a few doors from the postoffice and built a two story structure for the business. In the winter of 1901 this was wiped out by fire, which also took the Imperial hotel, then adjoining. But Mr. Hunter at once erected a better building than before, and having the only exclusive dry goods establishment in Phoenix, the store has always had its share of the trade of the camp. The aim of the firm has evidently been to anticipate and to keep in advance of, while at the same time fully meeting the requirements of a growing community like Phoenix. The past year has been one of the most prosperous in the history of the company.

The Phoenix Pioneer.

SOME persons are kind enough to think that the Phoenix Pioneer is one of the institutions of Phoenix. Whether this be so or not, the editor can only say that, within the scope of his abilities, it has been his endeavor to publish just as good a weekly paper as was possible here—and from the reception that the paper has met with since its inception more than five years ago, there is reason to think that his efforts have been appreciated, with a few exceptions, by the community.

The first copy of the Pioneer appeared on November 18, 1899, from a building in which there were neither windows nor doors. At that time it was a six column folio sheet. In a few weeks the size was increased to seven columns to the page, and notwithstanding the dull times often prevailing all through British Columbia, since then, this paper has never hung out the flag of distress by reducing its size.

At the present time and for the last two or three years, the Pioneer has been published from a building erected especially for it, located as near the centre of the city as it was possible to get.

Originally the paper was established by W. B. Wilcox and Elmer D. Hall, who had had experience in newspaper publishing and in the business of job printing in other places for years before casting in their lot in the Boundary. A couple of years after starting Mr. Hall disposed off his interest to Mr. Wilcox, and is now living in Seattle. It was the aim, from the first number, to publish all the news of the Boundary, paying special attention to news of a mining or smelting nature, in which every resident of the Boundary, and many non-residents, are interested directly or indirectly. This policy has been pursued steadily, and we believe that it has won many friends for the paper, who are kind enough to say many pleasant things about the Pioneer as occasion offers. In so far as it has been possible to do so, the Pioneer has always endeavored to verify figures that have appeared in its columns, so that the element of uncertainty or inaccuracy might be eliminated to the greatest possible extent.

It was not to be expected that the Pioneer would please everyone, and the man who has any idea that he can do this has yet to learn a great deal. But we have spent such time, energy and money as was at our command to issue a paper that would be not only reliable and a credit to the town and district where it was published, but one that might be recognized as such abroad. In accordance with this policy, we have used good stock for the paper itself—as we believed that nothing was too good for the readers of the Pioneer—and have exercised every effort to make the contents of the paper equally acceptable.

The Pioneer has also a well equipped job department in which the highest grade of modern commercial printing for mining companies and general business is turned out, none but experienced and thoroughly qualified printers being employed.

George W. Rumberger.

GEORGE Wallace Rumberger may well be called the father of Phoenix, as he is the oldest continuous resident here, and was among the first to settle in this section. For many a month in the early days of the Boundary Mr. Rumberger enjoyed the privilege, also, of being the only person making his home where Phoenix now stands.

Mr. Rumberger was born in Huntington county, Pennsylvania, in the heart of the coal mining regions of that great commonwealth, and is of sturdy Pennsylvania Dutch stock. In the year 1883 he first started west, and for a time lived in Kansas. Then he went

MAYOR G. W. RUMBERGER.

to Colorado, where he also followed mining, and thence to Idaho and Washington, when he became interested in quartz mining.

In July, 1891, Mr. Rumberger came up into the then comparatively unknown Boundary country, leaving the railway at Marcus, Washington, and walking into this section, then without roads or even trails. Wandering over Boundary mountain, he made locations in this camp, and staked or became interested in the Brooklyn, Rawhide, Monarch, Idaho, Cimeron and other well known properties. The mere performance of assessment work on claims in the Boundary at that time, to a person without means, was a matter of no small magnitude, and many a man went out to civilization in the winter time to earn enough elsewhere to enable him to stay long enough in the Boundary to do his assessment work on his mineral claims the following summer—and Mr Rumberger was one of those.

Gradually, however, interest increased in the Boundary, capitalists came in, and properties which had hitherto been considered of little value began to be worth something. Then the townsite of Phoenix sprung up suddenly, Mr. Rumberger placed the surface of his Cimeron claim on the market, and sold nearly all of it before the surveyor's stakes had been driven, almost. The Old Ironsides townsite was also placed on the market immediately afterwards, and the lots there were also snapped up by investors.

When the Dominion Copper Co. was formed by Mackenzie, Mann, Cox and others, our present mayor began to reap a part of his well earned reward for his long wait here.

When Phoenix was incorporated as a city in 1900, Mr. Rumberger was honored by being chosen as the first mayor, and every election since that date he has been selected to succeed himself, the present being his sixth term as chief magistrate of Phoenix.

No one in the Boundary is better informed in regard to mines and mining properties than is G. W. Rumberger. Living here for fourteen years, knowing all the old time prospectors, and, indeed, having handled the pick and drill himself for many a month, he has made a study of the business, and today has extensive and valuable interests. In real estate in Phoenix, also, Mr. Rumberger is an authority, from the nature of the case, and has bought and sold a great deal of property for home people and non-residents.

More than one man who has had hard luck in the past has had occasion to be thankful to George Rumberger for timely aid extended, and done so that his left hand did not know what his right hand was doing.

Ed. H. Mortimer.

INVESTMENTS in Phoenix real estate and its surrounding mines are giving excellent returns, and Mr. Mortimer has on his list several buildings giving a return of at least twelve per cent. on an outlay of from $500 to $5,000. Those wishing an investment of this sort or who are looking for good farming land should drop him a line. He has a four-roomed house for sale at $600, bringing in $10 per month.

If there is a preference for mining, he advises the purchase of shares in the Last Chance, Gold Bug, Providence, Granby, Montreal & Boston or International Coal, and will be pleased to furnish quotations. An option can be had on a group of high grade claims adjoining one of the best properties in this camp, and options and working bonds will be secured for eastern capitalists.

In addition to his real estate and mining business, Mr. Mortimer also does a large insurance business, and is agent for the following companies: Fire—Liverpool, London and Globe, Phoenix Insurance Co. of London, British America, and Canadian of Winnipeg, all of which are Board companies. He also represents the Mutual Life of Canada, the Canadian Railway Accident Insurance Co., Lloyd's Plate Glass Insurance Co., the Canadian Birkbeck Investment and Savings Co., and the Mason & Risch Piano Co. In fact, Mr. Mortimer does a general agency business, and is a notary public.

Mr. Mortimer is an Englishman by birth, being a native of Southampton. In 1895 he arrived at Montreal, where he spent a year or two, coming to Rossland in the fall of 1896, and to the Boundary in 1898, where he has since made his home. He will deem it a pleasure to answer correspondence regarding investments in the Boundary.

GEO. C. FRASER,
MEMBER LEGISLATIVE ASSEMBLY
FOR GRAND FORKS RIDING.

John B. Boyle.

JOHN B. BOYLE, the druggist, has been in business in Phoenix since the fall of 1899, when he established himself on Dominion avenue, and has gradually built up the growing business which he now has. A year or two after starting here Mr. Boyle built the commodious two story block where he is now located on Knob Hill avenue, and last fall he added twenty feet to the building, to give him more room for his expanding business.

Mr. Boyle carries in stock everything that should be found in an up-to-date drug store, and he is particular that his stock is the purest and best to be had. If it so happens that anything is called for that he is out of, he is pleased to procure it. Special attention is paid to the careful and accurate compounding of prescriptions, Mr. Boyle giving his individual attention to the business.

Mr. Boyle was born at Elora, Ontario, in 1870, and spent several years with the great drug house of Evans & Sons, Toronto. Later he went to Detroit, where he was in the drug trade for about six years. In 1896 he came to British Columbia, and was in the same line of business at Victoria for about three years, prior to casting in his lot with the Boundary's chief mining camp, where he has built up a most satisfactory business. He is registered with the Pharmaceutical Association of British Columbia, and for the year 1904 was elected in the east ward of Phoenix to a seat in the council board of the corporation.

George E. Dey.

GEORGE E. DEY came to Phoenix about four years ago, and established himself in business here as a watchmaker and jeweler. Mr. Dey is a native of Ontario, and after a good education and spending the required time to thoroughly acquire a knowledge of his chosen business, he decided to launch out for himself. His brother, O. W. Dey, then being the agent of the C.P.R. in Phoenix, and believing that there was a good future for this city, persuaded Mr. Dey to locate in the chief mining town of the Boundary.

At first Mr. Dey started business in a modest way, but his close attention to work, and his proved ability to handle anything in his line, soon became known throughout the Boundary and he was forced to largely increase his stock, which he did, carrying almost everything that should be found in a well stocked jewelry establishment. But it was not only as a salesman that Mr. Dey obtained a good reputation in Phoenix. It was not long until he was recognized as one of the best, if not the best, watchmakers and jewelers in the Boundary, and his business increased accordingly. People owning fine chronometers are particular to whom they entrust them when needing repairs, and they soon began coming to Mr. Dey regularly when in need of his services.

One of the best evidences of Mr. Dey's ability is the fact that he was selected some years ago as the time inspector of the C.P.R. for the Boundary country, and has discharged his duties so well that he still holds that position. Officially it is his duty to examine and inspect periodically all timepieces used by the employes of the C.P.R. in this section.

Mr. Dey is a Free Mason of several years' standing, and a few weeks ago was honored by his fellow members of King Edward Lodge No. 36 of Phoenix, by being chosen as worshipful master of that lodge. He is also chairman of the board of public school trustees and on the board of managers for St. Andrew's Presbyterian church.

D. J. Matheson.

DONALD JOHN MATHESON was born in Victoria county, Nova Scotia, and came west when a young man, having received a good high school education in Halifax, on the shores of the Atlantic ocean. In 1897 Mr. Matheson first came to the Boundary, living in Cascade, where he taught the public school for about two years, then settling in Phoenix, which was just beginning to attract the attention of the outside world.

Mr. Matheson followed Thos. Roderick as postmaster of Phoenix in January, 1900, which position he still holds, and performs the important duties thereof to the universal satisfaction of the public.

In 1901 Mr. Matheson was chosen as city clerk, assessor and collector, and has occupied that responsible position continuously up to the present, which is the best evidence that he gives satisfaction to the city council and to the people of Phoenix.

In connection with his other business Mr. Matheson conducts a successful fire insurance agency, in which he does a large and increasing business each year, being agent for some of the strongest companies in the world. He represents the Royal Insurance Co., the Norwich Union, the National of Ireland, the London and Lancashire, the Western Assurance Co., the Union Assurance Co., the Queen Insurance Co., and the Phoenix of Hartford, among others. He is also agent for casualty and plate glass insurance companies, and his universal courtesy and businesslike qualities show that he enjoys the confidence of the business men of Phoenix to a large degree.

ALDERMAN JAMES MARSHALL.

Clark & Binns.

IN THE spring of 1895 the firm of Clark & Binns was established in the furniture and undertaking business in the town of Trail, at that time the entrepot to Rossland by way of the Columbia river from Northport and Nelson—and the business is still carried on there.

In September of the year 1899 the firm established itself in Phoenix, putting up a 30x60 foot two-story building on Old Ironsides avenue, which is still occupied by them. One story is used for warerooms and the other for manufacturing purposes. They carry a large stock of furniture, carpets, linoleums, house furnishings, pictures, mouldings and undertaking supplies, and import direct in carload lots. James A. Clark has been in charge of the Phoenix store since its establishment over five years ago, while Mr. Binns remains at Trail.

Mr. Clark is a native of Ontario, born at Ingersoll. After leaving school he went into the furniture business and has never worked at anything else. At the first council election, November, 1900, Mr. Clark was elected alderman with a good majority, and he was also elected as a member of the school board several times.

Noble Binns was born in the land of the Shamrock. He sailed for Canada about twenty years ago, where he was also in the furniture business. There he met Mr. Clark, and they came to British Columbia together, forming the partnership that has been most successful every way.

VIEW OF PHOENIX FROM SUMMIT OF KNOB HILL.

The Granby Laundry.

MRS. T. GRIFFIN, who is the proprietor of the Granby Laundry, has been established about three years, and in that time has had a large part of the trade of the men employed at the Granby and other mines, as well as a general miscellaneous business throughout the city of Phoenix.

Mrs. Griffin looks after the details of the business herself, which is a guarantee that everything is as it should be—and this is saying not a little when it comes to the business of laundrying. Her place of business is in the back part of the Wynkoop-Stevens Trading Co. building, which is situated on Old Ironsides avenue, where everything is conveniently arranged for the extensive business which has always been handled by this laundry. There being no Chinese in Phoenix—the elevation being pretty high for them—it makes all the more business for those engaged in laundrying, and Mrs. Griffin undoubtedly succeeds in getting her share of the general patronage.

If careful attention to the wants of her customers, and never letting work go out that is not believed to be all right in every particular, are business getters, the secret of Mrs. Griffin's success since she started the Granby laundry, is easily explained. The last year with Mrs. Griffin, as with most business concerns in Phoenix, has been a very satisfactory one, and she looks forward to another year of comparative prosperity during 1905.

Phoenix Dairy.

W. D. PARKER is the proprietor of the oldest established dairy in this neighborhood—the Phoenix Dairy. In the summer of 1898 Mr. Parker came up through the Boundary from the state of Washington, at the time that the C.P.R. was building its Boundary branch from the Columbia river, and after looking over the field decided that there was an opening here for a good dairy. On the 22nd of June of that year, he settled on what is now his milk ranch, about a mile below Phoenix, on the Phoenix-Greenwood wagon road, and established his dairy. At that time and for more than a year afterward, till the new railway had trains running into Phoenix, all of the travel into this camp came over that road, and the Parker ranch was a familiar sight to all travelers coming into or going from the chief mining camp of the Boundary.

Mr. Parker at once obtained a good trade in this camp, for the need of a dairy had long been felt here. Between supplying the mines and the general trade, including the hotels and families in the camp, he soon had all the business that he could handle. At the present time there are about 30 cows at the Phoenix dairy, besides which Mr. Parker does a large business in poultry.

W. D. Parker is a native of Indiana, but in 1877 he started out for what was then the west, and lived in the state of Iowa for several years. However, the west seemed to be moving towards the setting sun, with the settlement of the Pacific slope and the Rocky mountain regions, and Mr. Parker came farther west, reaching the state of Washington in 1880. Here he settled in the beautiful and fertile Colville valley, near Chewelah, where he still has considerable property.

Any place where snow remains on the ground for at least five months of the year on an average, as it does in and around Phoenix, makes it anything but easy to secure feed on the nearby ranges. But the cattle in the Phoenix Dairy are kept up with the best of feed during the long winter months, and in this way Mr. Parker is able to supply his customers during the hibernal season. By taking an active part in the conduct of his dairy, Mr. Parker has been successful in bringing it up to its present successful standing.

Phoenix Brewery.

A WESTERN town of any size or pretentions in this day and generation that has not a brewing establishment is the exception rather than the rule, and Phoenix is not the exception to this rule, having what is said to be one of the best appointed and most successful breweries in this section of the country.

Julius Mueller, the proprietor of the Phoenix Brewery, began the work of building his present commodious structure in the fall of 1899, and completed it that winter, fitting it with the latest appliances for his business. It is 60 x 36 feet in size, three stories high. Since that time he has added to and perfected the arrangements of the concern until none are better able to turn out the purest and most satisfactory beer to be brewed. Mr. Mueller has piped the clearest water from a mountain spring to the brewery, and so is sure of a never failing supply that has no danger of being contaminated.

Mr. Mueller was born at Baden, Germany, and learned the business of brewing in that country so famous for its unexcelled beer. In the year 1880 he came to America, and settled in Chicago for a time, but the west had its attractions, and successively he was located at Missoula in Montana, Spokane in Washington, and then went into business for himself at Rossland. But for the time being, at least, Rossland had seen its best days and competition was exceedingly keen there, with several in the same line of business, so Mr. Mueller decided to cast his fortunes in with the Boundary, which he did, as mentioned above, in 1899. As with almost every business man in Phoenix, the last year has been a good one with the Phoenix Brewery, and his present winter trade is one of the best Mr. Mueller has ever had.

With an abiding faith in the permanence of Phoenix as a mining camp of the largest importance, Mr. Mueller has made a heavy investment here in his brewery, the capacity of the concern being much greater than that at which it is operated now. However, believing that his judgment would be justified in the course of time, he has prepared accordingly, and in the meantime is transacting a satisfactory business.

Phoenix Electric Lighting Co. Ltd.

CAPITALIZED at the moderate sum of $50,000, the Phoenix Electric Lighting Co., Ltd., has been in business here for the last three years. In the year 1902 a franchise was granted by the city to the gentlemen who formed the company and the water power company to supply light and water to the city. Two corporations were organized for the purpose, but later the water company was practically merged with the lighting company.

The officers of the Phoenix Electric Lighting Co., Ltd., for 1904 were: President, H. N. Galer; vice president, Wm. Yolen Williams; treasurer, G. W. Wooster; secretary, J. L. Martin. For 1905 the directors that have recently been chosen at the annual meeting of the company were G. W. Rumberger, Wm. Spier, G. W. Wooster, Wm. Hower and James L. Martin—the officers to be chosen later.

From the early days of Phoenix it has been well known that the water question would come up when the city attained any size, because there were no extensive sources of supply near at hand. This has been the case during the last six months, and although Secretary Martin has done everything that he could to keep up the supply, Marshall lake, north of the city, where the electric pump is located, has not been sufficient to furnish all that was needed. It is likely, however, that steps will be taken to augment the supply in future, even if there is an extra dry season to contend with, as has been the case lately.

The lighting company furnishes all the lights for the city and residence and business houses, and has been a profitable part of the business, but the water end of the business has been anything but a profit maker. As a matter of fact, when the franchise was granted, no one could be secured to take it for supplying water, unless it was coupled with the lighting privilege. For domestic and fire purposes the company has laid water mains through all the principal streets of the city, with a number of hydrants at suitable points. The current for the electric lighting system is taken from the high tension electric lines that come from the falls of the Kettle river at Cascade, 22 miles distant.

Ed. Black

ONE OF the progressive young concerns of the Boundary is the watchmaking and jewelry establishment of Ed. Black, located adjoining the Knob Hill hotel on First street.

Mr Black has been a resident of Phoenix for nearly two years, and in that time he has built up a trade in his business that has proved most satisfactory. He lived in Phoenix several months before deciding to embark in business for himself, but from his own statement, the venture has been a most satisfactory and profitable one in every way. Mr. Black was born in Nebraska, and has lived in the far west for a number of years. When he reached Phoenix in 1903, he sought employment in the Granby mines until he was prepared to launch out for himself on the sea of business.

In his chosen business Mr. Black makes a specialty of high grade watches of all kinds, in the supplying of which he has done a good business. He also carries in stock a select line of seasonable jewelry in variety, including rings, brooches, chains, etc. In addition to this he does an extensive business in watch and jewelry repairing of every description, and guarantees all of his work or will refund the money.

From his wide acquaintance among the miners and business men, Mr. Black is given a generous patronage generally, and he states that his holiday trade this year was far beyond his anticipations, and he expects trade this year to be fully as good as last year.

VIEW OF UPPER TOWN, PHOENIX.

BOUNDARY DATA AND STATISTICS.

For the convenience of interested readers, we have prepared data and statistics regarding the ore and metal production of the Boundary, not only for the year 1904, but for previous years. The figures which will be found on this page have been prepared with all possible care under the circumstances, application being made to the proper authorities to secure them. It is, therefore, believed that they may be taken as practically correct, except in the cases of some of the smaller mines, where they are approximate, the request for definite figures not having been complied with.

Granby Company's Output.

During the year 1904 the Granby mines shipped more than 40 per cent more ore than in the previous year, the total being 393,718 tons for 1903 and 549,703 in 1904—both in dry tons. The following is the record of shipping by months for 1904:

MONTH.	TONS.
January	50,940
February	49,110
March	51,300
April	42,870
May	46,950
June	49,199
July	34,580
August	42,030
September	48,000
October	40,605
November	45,089
December	49,230
Total 1904	549,703

In the year 1904 there were 5,783 feet of crosscutting, drifting, raising and sinking done at the Granby mines—or over a mile—making a grand total of 26,844 feet of development work done in these mines, or over five miles. This does not include any of the work done in the immense ore quarries.

In 1904 there were 3,148 feet of diamond drilling done at the Granby mines, or a total of 4,641 feet to date.

GRANBY SMELTER.

Detailed and corrected figures have been obtained showing the exact amount of ore that was reduced at the smelting works of the Granby Co. at Grand Forks for the past calendar year. The total is a little short of 600,000 tons of ore—the exact amount being 596,252 tons. In the year 1903 the same smelter treated 401,921 tons, the increase being, therefore, about 45 per cent. for 1904 over the previous year. The following table shows the tonnage treated by the smelter for each month of 1904:

MONTH.	TONS.
January	57,255
February	56,986
March	55,760
April	47,512
May	48,467
June	48,641
July	37,042
August	47,308
September	49,795
October	45,714
November	49,411
December	52,361
Total for 1904	596,252

Of this total there was shipped from the company's Phoenix mines a total of 549,703 tons of ore. This leaves 46,548 tons of custom ore that was received during the year, this custom ore coming from Republic, Rossland, Ymir, Orient and other mines.

The total production of metals from this ore for the year 1904, the figures for December being estimated, as they are not yet available for that month, was:

Gold	50,694 oz.
Silver	217,472 oz.
Copper	17,843,399 lbs.

Figuring on the 1904 average prices for metals, the value of the Granby Co.'s output for 1904 was as follows:

Gold, 50,694 oz., at $20	$1,013,880
Silver, 217,472 oz., at 57c	123,959
Copper, 17,843,399lbs. at 12.8c	2,283,955
Total 1904 output	$3,421,794

Altogether, since the inauguration of smelting operations by the Granby Co., there has been reduced at the smelter tons of ore as follows:

	TONS.
1900	62,387
1901	230,828
1902	312,340
1903	401,921
1904	596,252
Total, five years	1,603,728

B. C. Copper Co.

According to official figures furnished by the British Columbia Copper Co., the company's Mother Lode mine had an output during 1904 as follows:

MONTH	TONS
January	14,842
February	14,854
March	16,480
April	12,925
May	15,776
June	14,928
July	14,091
August	15,512
September	14,331
October	14,593
November	13,020
December	12,946
Total 1904	174,298

In the year 1903 the Mother Lode mine had an output of 138,079 tons of ore, so that during 1904 there was an increase of 26,219 tons or a trifle under 20 per cent.

SMELTING DATA.

The exact amount of ore treated at the British Columbia Copper Co's two-furnace smelter in 1904 was as follows, including the custom ore received from 30 different outside mines:

MONTH	TONS
January	18,159
February	17,263
March	19,412
April	14,475
May	18,480
June	17,107
July	16,303
August	17,901
September	18,254
October	19,851
November	16,624
December	16,655
Total, 1904	210,484

In the year 1903 this smelter reduced 162,913 tons of ore, so that during 1904 there was an increase of 47,571 tons treated, or almost 30 per cent. Of the 210,484 tons smelted, 172,753 tons were from the company's Mother Lode mine, while the balance of 37,731 tons came from the following properties in the Boundary, Rossland, Republic, Ymir, West Fork and other camps: Gold Finch, Emma, LeRoi No. 2, Athelstan, Non Such, Providence, Senator, Elkhorn, Butcher Boy, Hunter V., Bay View, Gem, Preston, Silver Cloud, Columbia and Kootenay, E.P.U., Eureka, Cliff, Chewelah Copper King, Mountain Rose, Rathmullen, Lead King, Carmi, Rhoderick Dhu, Mountain Lion, First Thought, Ben Hur and Keystone.

MATTE AND BLISTER COPPER.

Total matte produced in 1904	4,978,750lbs
Total blister copper	2,933,115lbs

Above matte and blister copper contained:

Copper	5,081,743 lbs
Gold	35,403.842 oz
Silver	118,418.93 oz

Figured on a basis of an average price for 1904 of 57 cents per ounce for silver, 12.8 cents per pound for copper and $20 per ounce for gold, the value of the output of the B. C. Copper Co. for 1904 was:

Copper, 5,051,743 lbs @ 12.8c	$646,623.36
Gold, 36,403.842 oz. @ $20.00	72,807.68
Silver, 116,418.93 oz. @ 57c	67,498.79
Total value 1904	$796,929.83

By years the tonnage treated at the B. C. Copper Co.'s smelter was as follows:

YEAR	TONS
1901	117,611
1902	148,600
1903	162,913
1904	210,484
Total	736,608

Montreal & Boston.

The Montreal & Boston Consolidated only operated its first furnace about three months of 1904, putting through about 30,000 tons of ore, nearly all of which was produced by the company's mines.

The production of copper matte was about 1,225 tons, and the approximate production of metals was as follows:

Gold, 3,435 ozs., at $20	$68,700
Silver, 13,404 ozs., at 57c	7,724
Copper, 920,000 lbs., at 12c	117,760
Value 1904 output	$194,184

While the above estimate of values is not official, it is believed to be fairly conservative, as the average prices for the year 1904 have been used and the market prices for the last three months of 1904 were higher than earlier in the year, especially as regards copper.

Total Boundary Values, 1904.

Putting together the figures for the three district smelters, given above, we have the following output from Boundary mines for 1904:

Granby Company	$3,421,794
British Columbia Copper Co.	796,936
Montreal & Boston Consolidated	194,184
Total	$4,412,914
Output of high grade Boundary mines, treated at Nelson and Trail smelters, about	250,000
Total 1904 output	$4,662,914

2,507,727 Tons of Ore.

Following are the totals of the shipments of ore from each of the Boundary mines of importance, for five years, from 1900 to 1904 inclusive, as reported to the Phoenix Pioneer and Boundary Mining Journal.

MINES	TONS
Granby mines	1,549,594
Mother Lode	558,077
Snowshoe	94,040
Brooklyn-Stemwinder	25,200
Rawhide	3,070
Sunset	27,238
Athelstan-Jackpot	11,982
Mountain Rose	1,759
Morrison	3,486
B. C. mines	101,075
R. Bell	560
Emma	70,077
Oro Denoro	31,937
Senator	3,813
Brey Fogle	222
No. 37	[illegible]
Reliance	[illegible]
Winnipeg	5,336
Golden Crown	2,875
King Solomon	875
No. 7 mine	1,147
City of Paris	2,000
Jewel	510
Carmi	890
Providence	1,928
Elkhorn	725
Skylark	52
Last Chance	50
E. P. U. mine	467
Miscellaneous	8,345
Total five years	2,506,727
Estimated value at $5 per ton	$12,533,605

BOUNDARY ORE TONNAGE.

The following table gives the ore shipments of Boundary mines for 1900, for 1901, for 1902, for 1903, for 1904, and 1905, as reported to the Phoenix Pioneer—

MINE.	CAMP.	1900	1901	1902	1903	1904	1905	Week Jan. [illegible]
Granby Mines	Phoenix	64,533	231,762	[illegible]	393,718	549,703	[illegible]	[illegible]
Snowshoe	Phoenix	297	1,731	20,800	71,212	......	—	—
B. C. Copper Co.								
Mother Lode	Deadwood	5,340	99,034	141,326	138,079	174,298	10,164	[illegible]
Montreal & Boston Con.								
Brooklyn-Stemwinder	Phoenix	—	—	—	—	[illegible]	[illegible]	[illegible]
Rawhide	Phoenix	—	—	—	—	[illegible]	1,753	[illegible]
Sunset	Deadwood	—	802	7,455	15,731	[illegible]	726	[illegible]
Mountain Rose	Summit	—	—	—	—	1,759	617	[illegible]
Athelstan-Jackpot	Wellington	1,200	550	—	5,646	4,586	—	—
Dominion Copper Co.								
Brooklyn-Stemwinder d'mp	Phoenix	—	150	—	—	[illegible]	60	—
Morrison	Deadwood	—	—	[illegible]	[illegible]	—	—	—
B. C. Mine	Summit	19,494	47,405	14,811	19,365	—	—	—
R. Bell	Summit	—	—	560	—	—	—	—
Emma	Summit	—	650	8,530	22,937	37,960	[illegible]	[illegible]
Oro Denoro	Summit	—	—	—	15,537	16,400	[illegible]	[illegible]
Senator	Summit	—	—	—	[illegible]	3,450	[illegible]	[illegible]
Brey Fogle	Summit	—	—	—	—	222	—	—
No. 37	Summit	—	—	—	—	[illegible]	—	—
Reliance	Summit	—	—	—	—	33	—	—
Winnipeg	Wellington	1,076	[illegible]	785	2,435	—	—	—
Golden Crown	Wellington	2,250	—	625	—	—	—	—
King Solomon	W. Copper	—	875	—	—	—	—	—
No. 7 Mine	Central	—	665	482	—	—	—	—
City of Paris	White's	—	2,000	—	—	—	—	—
Jewel	Long Lake	160	350	—	—	—	—	—
Carmi	West Fork	—	—	[illegible]	—	—	[illegible]	—
Providence	Providence	—	—	219	993	[illegible]	[illegible]	—
Elkhorn	Providence	—	—	—	400	325	45	—
Skylark	Skylark	—	—	—	—	52	19	—
Last Chance	Skylark	—	—	—	—	[illegible]	[illegible]	—
E. P. U. Mine	Skylark	—	—	—	167	300	[illegible]	—
Ruby	Boundary Falls	—	[illegible]	—	—	—	—	—
Republic	Boundary Falls	—	—	—	—	[illegible]	[illegible]	—
Miscellaneous		[illegible]	3,456	325	[illegible]	750	—	—
Total, tons		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Smelter treatment—								
Granby Co		62,387	230,828	312,340	401,921	596,252	[illegible]	[illegible]
B. C. Copper Co.		—	117,611	148,600	162,913	210,484	[illegible]	[illegible]
Montreal & Boston Con.		—	—	—	[illegible]	[illegible]	[illegible]	[illegible]

The Phoenix Pioneer

And Boundary Mining Journal.

ISSUED ON SATURDAYS BY THE

PIONEER PUBLISHING CO.

AT PHOENIX, B. C.

W. B. WILLCOX, MANAGER.

Telephones { Business office No. 14. / Manager's residence, No. 15.

SUBSCRIPTIONS IN ADVANCE.

Per Year	$2.00
Six Months	1.25

Midwinter Number

One year ago the Pioneer sent out an illustrated extra number of this paper, for the purpose of calling attention to the magnificent possibilities in a mining way that are to be found in the Boundary district of southeastern British Columbia. It consisted of sixty pages of text and illustrations and cover, and was received far and wide with expressions of approval and commendation. In the publication of that number it was the intention of the publisher to present the advantages of the Boundary to those interested, or who might become so, that they might have a clear idea of the conditions pre[illegible]ng here. There is every reason [illegible]ieve that the object of the publication, to a large degree, was accomplished, and such being the case, the publisher feels well repaid for his efforts.

With the advance made in all lines of mining in the Boundary during the past year, it was believed that the time was even more opportune for the issuance of a similar publication, bringing it, as far as possible, down to date. This year the size of each page has been more than doubled over last year, to give a better setting to the many large halftone engravings in the publication. The result is that the publication now before the reader is the equivalent of being five or six pages larger than last year.

In the articles regarding the different mines and smelters of the Boundary which are now in operation, it has been the intention to confine the stories entirely to facts, it being our idea that the facts themselves—in cold type—are sufficiently strong to attract attention, if properly presented.

Last year, besides the regular list of readers of the Pioneer, copies were sent all over the world, from the Shetland Islands to Dawson, Manila and even China. The distribution this year will doubtless be as wide as last year, copies even now being destined for India's coral strands and other far away climes.

It has been impossible to treat of every mining property in the Boundary within these 52 pages, but reference has at least been made to the more important of them. It has been no small task in a small country newspaper office to perform the mechanical work on an edition of this kind, but it has all been done in Phoenix, nearly 5,000 feet above the sea level. Such as it is, we submit it to a critical public, with the hope that it may be of as much use in making known the Boundary as was the issue of a year since.

Opportunities in the Boundary.

It is a time worn saying that gold is where you find it—and the same may be said with truth of the other metals, copper, silver and lead, that occur in the rock formations of the Boundary district. To some extent the idea has gained currency that large capital is required to enter the mining fields of the Boundary, due to the low grade character of our ore bodies. Up to a certain point this is true, and more than one concern has started in with a few thousands of dollars as a capital to exploit a low grade proposition, only to discover that low grade mines require large expenditures by the owners, years of development and the erection of smelting plants by the mining companies, to wrest profits from mother earth here.

But this has been done—make no error on that score. When ample capital was mixed with brains and mining experience on a large low grade proposition here, it has succeeded eventually, and we fully believe that there will be many more such in the future, as the possibilities of the Boundary become better known to those possessing the requisite capital and brains. For such, opportunities exist on all sides of us—opportunities as promising as any that have been taken advantage of.

And yet, we would not have it understood that only low grade mines can be found here, for the contrary is the case. Almost side by side with the low grade copper-gold mines are found high grade gold and silver mines—mines that have yielded and are today yielding ore that gives smelter returns of $150 and even $200 per ton.

These are what are known as poor men's propositions, for the reason that a man with limited capital can often take out enough ore in the course of development to pay all expenses and leave a handsome profit beside. In fact, this has been done in many cases. During the last year more attention than ever has been attracted to the mines in the high grade belt, which is largely around the city of Greenwood. Goodly profits have been paid, more claims have been bonded and taken hold of than ever before in the same time, and that part of the industry of mining has received a well deserved impetus as a result. Probably 15 or 20 of these high grade properties are now being worked, and most of them with most satisfactory results. Therefore, to the man of limited means also, the Boundary offers a most inviting field.

Permanence of the Boundary.

Notwithstanding the great strides that have been made in mining in the Boundary in the last five years, the future bids fair to show an even greater ratio of increase in the actual value of the output in dollars and cents. In the year 1900 not quite 100,000 tons of ore were taken out and shipped from our mines. In 1904 this figure had been increased more than eight fold—over 800,000 tons being mined in the year just closed, as will be noted from the figures published on page 29 of this issue. And this is the result of but five years of work. What will it be when ten or fifteen years have gone by? We leave it to our readers to answer.

We think we hear someone saying that by that time the mines of the Boundary will most likely have been worked out and perhaps deserted, as has happened in mining camps before this. Well, just take your pencil, gentle sceptic, and figure a little, and see what you find. We will take the Granby mines for an example. At present they are known to have the largest explored copper-gold ore bodies in Canada, and some think in the world, but there are others that are only just being opened up, as it were, that will doubtless be almost as important when an equal amount of development work is done. Now, then, is your pencil sharp?

In the Granby mines, the ore body has been defined roughly from 300 to 500 feet. It has been explored for a length of about 3,000 feet, and has been cut with shafts for a depth of from 325 to 400 feet from the apex of the Knob Hill mine. Remember, also, that this ground has all been developed with crosscuts and drifts, many of the stopes in the Old Ironsides and Knob Hill mines being large enough to hold the largest building in the Boundary, with plenty of room to spare. If you multiply these figures together, taking the minimum in each case, you will have something like a total of 243,750,000 cubic feet of ore. Divide this by 12, to be on the conservative side, and you get 20,000,000 tons of ore.

If not another ton was discovered, how long would it last at a shipping rate of 2,000 tons daily? Longer than those reading these lines may live. Then it must be remembered that, while we have taken the minimum figures, the diamond drill has proven the ore body to extend hundreds of feet deeper, adding untold millions of tons to the total. Now, then, do you think there is anything of an ephemeral nature about the Boundary mines?

Two great transcontinental railways, the C. P. R. and the Great Northern, have spent millions in money to lay their rails to the Boundary, to secure the tonnage from these great mining propositions. This fact itself is a most significant one, as railways are not spending millions unless they know a permanent tonnage will come to them as a result.

We leave the reader who has followed these lines to his own reflections, and if he cannot see here the beginning of one of the greatest copper manufacturing industries in the world—in the face of these stubborn facts—he must indeed be blind.

Employed in the Boundary.

From the nature of the case, the forces of men employed in the mines and smelters of the Boundary, and by the railways that haul ores and fuel to, and the metallic products from, the Boundary smelters, varies from time to time. From various sources, however, the Pioneer has obtained data regarding the men employed, and the following figures are believed to be fairly accurate:

MINES	MEN
Granby Mines	350
Mother Lode	100
Brooklyn	90
Rawhide	60
Providence	40
Elkhorn	17
E. P. U.	17
Sunset	16
Last Chance	10
Skylark	12
Emma	25
Oro Denoro	10
Senator	12
Bay	8
Silver Cloud	5
Betts and Hesperus	12
Lancashire Lass	5
Mountain Rose	6
Up North Fork Kettle river, about	20
Up West Fork and main Kettle river, about	50
Hope No. 2, Coronation, Combination, Strathmore, Barbara, Coro-Canadian, etc., about	40
Miscellaneous	25
Total	930
SMELTER EMPLOYES.	
Granby smelter	275
B. C. Copper Co. smelter	110
Montreal & Boston smelter	100
	1415
C. P. RAILWAY EMPLOYES.	
Track maintenance	150
Station help	30
Bridgemen	15
Train crews, 7 of 3 each	21
Engine crews, 8 of 2 each	16
Yard crew	3
Eholt, shops, round house and fueling depot	35
Other train crews running into Boundary points	45
	1730
Great Northern, estimated	100
	1830

C. P. R. payroll, $10,000 to $20,000 per month.

Mine and smelter payroll, about $135,000 per month.

Eholt is C. P. railway headquarters for the Boundary.

B. C. Output, 1904, was $19,770,000.

From Victoria comes the report that the total value of the minerals produced within the confines of British Columbia during the year ended December 31st, 1904, was $19,770,000. This was an increase of $2,274,046 over the amount for 1903.

The total amount of mineral produced other than coal in the year amounted to $15,300,000. The amount of gold produced, both from quartz and placer, during the year that has gone into the care of the historian, was in excess of that of the year before. In 1904 the amount of gold taken from the earth amounted to $6,400,000; that secured in 1903 was $5,873,036, slightly over $500,000 less than that of the year just passed. The silver product of the province in 1904 was also in excess of that of the year previous. The silver output of 1904 was $2,200,000, which was $678,528 in excess of the year 1903, when the amount of silver taken from the British Columbia mines totalled $1,521,472. The copper produced last year was slightly in excess of that mined in 1903. During 1904 the total output was $4,600,000. The lead mined in 1904 was valued at $689,744, a total much less than that of 1903. The coal and coke produced in the province were valued at $4,332,267, the amount being the same as that mined in the year that preceded.

The approximate statement of the mineral output for the year 1904 is as follows:

Gold	$ 6,400,000
Silver	2,200,000
Copper	4,000,000
Lead	1,500,000
Miscellaneous	600,000
Total mineral production other than coal	$15,300,000
	Tons.
Coal, Crow's Nest Pass	370,000
Coal, Vancouver Island	720,000
Total coal tonnage	1,090,000
Value	$3,270,000
Coke, C. N. P.	220,000
Coke, V. I.	20,000
Total coke tonnage	240,000
Value	$ 1,200,000
Total 1904 mineral output	$19,770,000
Total mineral output for 1903	$17,465,954

BETTS AND HESPERUS GROUP.

A FIVE drill Rand straight line air compressor was recently installed on the Betts and Hesperus group, situate about three-quarters of a mile from the Athelstan mine, and a long tunnel to tap the lode at depth is now being driven. It is proposed to ship 200 tons of ore per day, beginning early in the coming spring, the tracks of the branch of the Great Northern railway to Phoenix being only 1,500 feet distant, and a new wagon road extends from the main workings to the railway.

The development of this now well known group was undertaken nearly two years ago by a Chicago company organized by T. H. Rea, an experienced mining man, formerly of Rossland. There are 150 tons of ore on the dump and an experimental shipment to the Granby smelter gave most satisfactory returns. Just how wide the ore body is has not yet been determined. The capping consists of decomposed lime and quartzite impregnated with copper stain, and it appears to be from seventy-five to one hundred feet wide. The mineral zone lies between a contact of diorite and porphyry and can be traced across both claims; in fact, half a dozen open cuts, in addition to the main workings, have disclosed the ore in place.

The first work was to run an open cut 100 feet long through "wash" to strike the ore body. When this had been accomplished the miners then ran in on the diorite foot wall, which trends north and south with a dip to the east. Ten feet further in the workings, 18 feet wide, are all in ore with no hanging wall in sight. This part of the workings was also extended 50 feet further in ore, and at the face a winze, also in ore, was sunk 40 feet, giving a depth of over 75 feet from the surface on the slope of the hill.

If surface showings count for anything, the Betts and Hesperus will soon rank as one of the big propositions in the Boundary, not only in regard to values but equally so in respect of width. The ore is a typical sulphide with a matrix of lime, iron and silica in the proper proportions to make it self fluxing. The lowest assay obtained was $5 per ton. Several yielded $60 per ton. Careful sampling places the average value of the face of the workings at $12 per ton in copper, gold and silver in the order named. The present main working is on the Betts, about the centre of the claim. In either direction for a distance of of about 1,500 feet a series of open cuts along the ore zone have disclosed ore of the same variety.

The continuity of the ore zone having been determined, the next step was to start a new working tunnel farther down the hill, with the object of cross-cutting the ore body at a depth of 275 feet. This big undertaking is now well under way, and the tunnel will have a length of about 600 feet. It is now in 45 feet, and, contrary to expectations, ore was encountered before the tunnel had been extended 30 feet. The strike has greatly encouraged the management, as the belief prevailed that ore would not be encountered until a distance of 250 feet had been traversed. There is likelihood *that the ore now in the face of* tunnel will be continuous as far as the winze in the old workings, and with an upraise from the long tunnel, is destined to connect. Should the ore zone prove to be from 300 to 400 feet wide, as is anticipated, the group has every prospect of growing into one of the most important mining propositions in the Boundary.

Two shifts are now at work. The plant recently installed comprises the Rand compressor referred to, and a 60-h.p. boiler. The company has also recently erected a compressor building, boarding and bunk houses, store house and office, blacksmith shop, water tank, and laid 600 feet of pipe line. The recently installed power plant is being utilized in driving the tunnel. The original group has been increased by the purchase of the Lancaster and Chicago fraction, embracing 50 acres and giving right of way down the mountain to the Great Northern track along Fourth of July creek.

The officials of the Hesperus Gold-Copper Mines Co. are: President, Chas. J. Magee; treasurer, P. B. Fridkyn; secretary, John Clancy, all prominent Chicago business men, and T. H. Rea, of Grand Forks, superintendent. Theodore Herchmer, the foreman, is a competent mining man, enjoying a wide experience in Canadian and American mining camps.

The Betts and Hesperus claims were purchased by the present owning company from John A. Finch, the wealthy mining operator, of Spokane, who had previously done a large amount of development work on the properties. The equipment at the mines has thus far cost the company about $10,000, and it is the intention of the management to continue development until the mines reach the steady shipping stage.

Coro-Canadian.

THE CORO-CANADIAN group recently acquired on a working bond by a Grand Forks syndicate is likely to prove one of the best high grade propositions in Skylark camp. The quartz lead at the bottom of a 30 foot shaft varies from four to ten inches in width, recent assays of the ore giving returns of $21, $52, $85, $90 and $104 respectively per ton in silver and gold. Silver constitutes 85 per cent of the values. Development work is in charge of W. H. Jeffery, M.E., who proposes to drift on the vein after reaching the 50 foot level.

The group lies between and adjoining the Last Chance mine on the west, the Crescent mine on the northeast, the Lake mine on the northwest, the Preston on the east, the Hope No. 2 and Silver King on the south. The main lode or vein commonly known as the Crescent lead had been traced by open cuts across the Canadian, the shaft being located about the center of the claim.

No work has been done on the Coro, lying to the south, as the surface is covered with wash, but the veins on the Silver King and Silver Cloud head in that direction. The formation consists of granite rocks covered in places by metamorphosed rock, which has been much altered in eruption. The Canadian is also traversed east and west by a vein which has been opened up on the Preston and disclosed high grade ore. There is an abundant supply of excellent mining timber on the Coro.

The members of the syndicate that bonded the group are Lord Arthur Rainey, Dr. Kingston, J. W. McCallum, W. J. Cook, Dr. Northrop, Chas. Brogden, Dan McDonald, Geo. Rutherford, of Grand Forks, and W. A. Harkin, Greenwood.

SOME OTHER BOUNDARY MINES.

BRIEF reference will be here made to several Boundary mines that are promising, but most of which are not at present being developed.

PHOENIX CAMP.

In addition to the properties of which extended notice is given on other pages of this issue, Phoenix camp has several properties that are destined to be of considerable importance in the future. Among these, the Monarch and Tamarack, adjoining the Rawhide, are said to have a tremendous showing of low grade ore, and are likely to be worked the coming season.

The War Eagle, adjoining the Granby mines on the south, has had considerable development done, and is equipped with a compressor plant. It has not been operated for several years, although there is considerable ore exposed. It is owned by a company of Sherbrooke, Quebec, men and is well thought of by those best acquainted with it.

The Nellie Cotton group, also south of the Granby mines, has been taken over this last year by Chicago men, who have formed a company to operate it, and work is expected to be started this spring.

The Marshall group, north of the Brooklyn group, are claims that not much is heard of, but they have an immense surface showing of ore of a fair grade, and bid fair to develop some day into one of the important groups of the camp. The owners have refused large sums for the property.

WELLINGTON CAMP.

For quite a time Wellington camp, two miles east of Phoenix, has been comparatively quiet, properties that formerly were much in the public eye in this camp now being idle because of financial troubles. In this class are the Winnipeg and Golden Crown, both of which have shipped considerable ore in the past, and both of which are served by spurs from the C. P. R. It is not improbable that one of them will have something done with it this year.

The Athelstan mine, owned by the Montreal & Boston Consolidated, is the only property in Wellington camp that has shipped ore during the past year, sending out over 4,000 tons. It is largely a gold proposition, and the values are considerably higher than most of the low grade mines. It is handicapped by being a mile or more from the Winnipeg spur, necessitating a wagon haul. It will probably be operated again this year, it being an easy matter to build a tramway to the new line of the Great Northern to Phoenix. The Iron Clad, in this camp, has been operated this last year with excellent promise, but has not yet shipped ore.

DEADWOOD CAMP.

In addition to the Mother Lode and Sunset groups, elsewhere mentioned in this number, Deadwood camp has a number of properties on which considerable work has been done, but none of which are now being worked. The Morrison, one of these, was recently acquired by the Montreal & Boston Consolidated Company. This property has shipped nearly 5,500 tons of ore, but none was sent out in the past year, but the ore has qualities that are desirable in smelting. It has a good machinery equipment, and as soon as a railway spur is built to the property, can easily maintain a considerable output.

The Buckhorn, in Deadwood camp, and the King Solomon and Copper Mine claims in Copper camp adjoining, are also said to be more than likely properties, which will, with development on the proper scale, be found from to advantage.

SUMMIT CAMP.

In Summit camp the B. C. mine was for a long time the leading property, being the first steady shipper of the Boundary, and sending out over 100,000 tons of ore of an excellent grade. It has not been operated for more than a year, but is likely to be doing business again before long, it is said. It is well equipped with machinery, and has a C. P. R. spur to the ore bunkers. So far this mine has more than paid for itself from the ore taken out, according to report.

In this camp, also, the Oro Denoro is one of the properties of which much is looked for in the near future. It has a great showing of iron and copper ore, that can be quarried out cheaply. In the past the Oro Denoro has shipped upwards of 50,000 tons of ore to the district smelters. While it has not been operated to full capacity the last year, some ore has been kept going out all the time, and it has the best of shipping facilities with both railways traversing the property. The Oro Denoro adjoins the Emma, which has shipped some 70,000 tons in the last four years.

The Senator, in Summit camp, is another copper and iron property which is steadily making an output of ore, having shipped some 3,80[illegible] so far to the Granby smelter, to which company it is under bond. A number of other properties in this camp have been worked to a greater or less extent, and are believed to be worthy of exploitation when properly taken hold of.

LONG LAKE CAMP.

Long Lake camp is the location of several promising mines, the most notable of which is the Jewel, owned by an English company, which has spent several thousands of dollars in development and in equipping the mine with machinery. It is confidently believed that this is an excellent property, and it is understood that the company will take it up again this year and actively operate it. Some shipments have been made by wagon several miles to the railway, and good returns are reported.

WHITE'S OR CENTRAL CAMP.

White's or Central camp, never having had any railway transportation of any kind, has not progressed in the last few years, although previously much development had been done on several of the claims. The City of Paris group, only half a mile from the international boundary line, had about 5,000 feet of development done, a good machinery outfit and shipped 2,000 tons of ore by wagon in 1901, but the owners, identified with the Granby interests, found this unprofitable until transportation was assured. The Majestic group, belonging to much the same parties, has had $50,000 spent on it.

The No. 7 group in this camp, is owned by interests identified with the B. C. Copper Co., who have exploited the group to a large extent and shipped over 1,000 tons of ore. But the same trouble—lack of transportation—causes them to discontinue for the time being.