

## Mining in the Boundary District, B. C.

By E. Jacobs, in Greenwood Times.

In reviewing the condition of the mining industry in the Boundary district at the year's close, a case two chief and striking evidences of substantial progress call for especial notice. These are, first, the increase in ore production and the establishment and regular and successful operation of two new mining camps. The year 1900 witnessed the advancement of the industry from the purely developmental stage to the stage of production, and it is with very much gratification that the present reviewer, after a long period of the arrival of such a time, was enabled a year ago to direct attention to the fact that the district had at length attained to a position fairly justifying its earlier claim to be ranked as one of the more important mining sections of the province. Comparing, though, the position at the close of the year now ending, with that obtained 12 months ago, there is far more abundant reason for pride in the district's present standing as a producer, and there is added cause for satisfaction in that it has been amply demonstrated that both mining and smelting conditions make it possible, with copper maintaining anywhere near its recent market value, to profitably treat and mine the immense bodies of low grade ore occurring in the district. Possibly the most important experience gained during the year is the realization of the fact that, in both mining and smelting, to ensure profitable returns, be carried on on a large scale, and it is especially encouraging to note that both of the mining and smelting companies operating largely in the district are already turning this experience into practical account by considerably enlarging the treatment capacity of their respective reduction works and extensively adding to producing facilities at their mines, whilst two or three other companies are actively preparing to similarly provide for the eventual working of their mines and establishment of smelting and shipping lines.

Among other features, also worthy of mention, are the following: The quarrying method of mining, which has been successfully adopted, the Granby company's Knob Hill mine, and the B. C. Copper company's Mother Lode mine having opened enormous surface quarries in an area which is sent direct to the smelter and other surface quarries, without being sorted at all, and several other mines are preparing to do likewise. The first of these has been brought into use in five or six mines, to prospect for ore bodies below or beyond existing surface workings. The Granby company was the first in recent years to adopt this method of prospecting in this district, and later the B. C., Snowshoe, Morrison and others followed suit, in some instances with satisfactory results. Railway facilities have to some extent been increased, while transportation projects have been started which will benefit the district. The Canadian Pacific railway has added to the number of short spurs from its lines, thereby making ore shipping operations more expeditious and economical at the mines thus connected, and the new railways referred to are in various stages of construction, one from Marcus, Wash., via Cascade City, and Grand Forks to Hepburn, and another, of a shorter line connecting the two last named towns. These will bring the Hepburn and Grand Forks mining camps on the Colville Indian reservation into close connection with the Granby company's smelter at the Grand Forks, whilst the former will give the last named town a complete railway through which it is intended shall later also tap the chief mining camps of the Boundary. It has been ascertained that arrangements have been made to shortly commence the permanent survey of the projected Vermilion highway, which will when completed afford transportation facilities to the promising mining property now being opened up on the west fork of Kettle river. Arrangements are well forward for supplying Vermilion with electric power, the Cascade Power company being now engaged in completing its works at Cascade City, for generating electricity and having its transmission line from Cascade to Phoenix nearly completed. The

Granby company has increased the capacity of its power plant on the North Fork of the Kettle river, so it will have ample power for its largely increased smelting plant, and so to spare, too.

Statistics relating to ore production and treatment are given below, but before going into these some general comment on the several mining camps in the district and the chief properties in them that have from time to time had mention in the press will likely prove of interest. Taking the camps in order of importance, from the joint standpoint of development and production, Greenwood camp, so named officially but also known as Phoenix camp, easily comes first, both as regards footage of development work done and tonnage of ore shipped. Six months ago the writer compiled statistics of underground work done in May first throughout the district, the obtaining and compilation of which occupied more than a week of time. Lack of time has prevented similar work being undertaken to bring the figures down to date, but it may be stated that the number of lineal feet of work done in underground development of the mines at Greenwood which has now reached an approximate total of 27,

improvements and providing water and other public conveniences necessary for the continued advancement of the town.

Deadwood camp, which ranks next in importance, has three mines at steady vice, the Mother Lode, Sunset, and Morrison. The average footage of development work done is about 18,000 feet, of which 7,000 has been done in the Mother Lode, about 4,000 in the Sunset and adjoining Crown River, both owned by the Mackay and Boston Copper company, 3,000 in the Morrison, and the remaining 4,000 divided between the Buckhorn, Great Hope, D. A. and Gold Bug groups, Marguerite, Greyhound and Ah-Tee. The Mother Lode mine includes the largest air compressor yet brought into the district, also the biggest hoist. At this mine, too, is the only conveying belt plant in the Boundary with its accompanying big rock crusher, the ore being crushed here before going to the smelter. A still larger rock crusher is being put in, this being necessary to keep pace with the increasing treatment capacity of the company's smelter. Several new buildings were erected at this mine during the year, whilst at the neighbouring Sunset mine substantial and commodious boarding and bunk houses were recently substituted for the smaller buildings previously in use, and ore bins, railway spurs, and other improvements have been provided, and a large hoisting engine

with was of higher grade than in the district, it was not obtained in large quantities, so operations were confined here early in the fall. The Blue Hill was worked during the year, 120 feet, at which depth the road cut off by a thick sheet of pebbles, which occurrence has been characteristic of this part of the district, experience in the past has been being that the ore is usually met with again in the road under the porphyry. The ore at Blue Hill having declined, operations tend the time for making a road under the bond work was discontinued, and the bond allowed to fall. Oro Denoro has been examined three or three times, with a view to its claim being that the ore is rich, which apparently lacks the ore necessary to make a shipping profit. It, but it is generally understood that prospective buyers were not prepared to pay the price asked for the ore. Nothing has been done at Emma except sending a small load of surface rock out. The main vein view and the National camp have no progress of importance noted. In the neighborhood of Summit camp the Hambley claim has been tented, and now the diamond drill is to be used to prospect the claim for its 100-foot level, but so far the ore has not been seen. The ore of mineral has not been examined underground, although the indications are favorable to eventual success.

View of Valley at Columbia, B. C., Boundary Creek District, With Town in the Distance.

000 feet, or more than five miles of underground workings. Of the total about 11,000 feet has been done on the Granby company's group of mines, about 7,000 in the Dominion Copper company's mines, some 6,000 feet in the Snowshoe, 2,000 feet in the War Drop, and 1,000 feet in the War Eagle. The two last named properties have not been at work during the year. The Dominion Copper company shut down its mines a few weeks since, but they have lately been exhaustively examined and sampled by representatives of another company which may shortly take them over. In any case work will probably be resumed on them shortly. Machinery and plant have been added to at the mines of both the Granby and Dominion Copper companies, whilst the Snowshoe quite recently ordered from the Jencks Machine company two additional large steam boilers, and the first half of a 30-hp air compressor, to be so constructed as to be suitable for driving by either steam power or electricity, similar in this respect to compressors in use at several of the larger mines at Rosland. The Granby company has erected more mine buildings and cottages, and the latter married employees, and the Snowshoe company lately built new boarding and boarding houses, and comfortable villa residences for its mine manager and foreman respectively. Phoenix, a little close to the principal mines of Greenwood camp, is now an incorporated town and is making many street and other im-

proved, the intention being that this mine shall ere long continuously ship ore on an appreciably large scale. Steady progress has been made at the Morrison mine during the year, and recent reports are to the effect that the diamond drill has shown the existence of a promising ore body at the 300-foot level. Test shipments of ore have been made this month to the smelter, and Granby smelter respectively, aggregating during the first 10 days about 200 tons. West of Deadwood camp the only district mine worked during the year was the King Solomon, which lately suspended operations after sending to the smelter about 850 tons of copper ore of generally good grade.

Summit camp properties have had a fair amount of attention during the year, but outside of the B. C. mine there has not been very substantial progress made. A reference to the table of ore shipments will show that the company has expended but of no important extent to the output of the year. Besides making a goodly showing in respect to tonnage, the company, noteworthy as yielding ore of higher average grade than most of the other Boundary camps, has had its output was restricted during two or three months following the curtailing of operations at the Tillamook smelter, a strike among the miners at Rosland, but since then the Greenwood smelter has been able to take most of its ore than earlier. A lot of exploratory work was done in the Bell mine, but although the ore met

in Wellington camp both the Winnipeg and the Golden Cross smelters at work. The year's record of the Winnipeg is one of plucky and persistent effort, and it is gratifying to those who displayed unusual perseverance in this district, to note that the mine is in a more satisfactory condition than from a mining point of view, having been worked for some history. Two or three important discoveries were made in the mine, and the mine has been worked on very practical and economical lines, so that its success in the light of the development of the mine may be regarded as very probable, if not already secured. Heretofore additions have been made to plant and machinery, and the return of ore received from the production of the mine are encouraging the management to prepare for more adequate equipment and enlarged operations. The company owning the Golden Cross, having been reorganized, the directors who have visited the mine since the determination to reorganize was arrived at, have announced that they will be guided in the development policy by the most competent advice they can obtain, so that the prospects of the Golden Cross are very favorable. The Atchafalaya was worked for a part of the year and shipped some ore, but at the present it is idle, as too is the Hartford, now owned by an incorporated company.

The Jewel, in Long Lake camp has