

showed another improvement in ore tonnage received. August, with over 38,000 tons, brings the amount received not far from what might be called normal.

Ore received has contained gold, silver, lead, zinc, copper and other metals, the mines being located from the chilly Yukon to up towards Hudson's Bay in Manitoba, as well as down into Washington, Idaho and Montana on the American side—and a hundred points in between. The appended table gives the monthly tonnages received for each month thus far in 1917, together with the receipts for the same months in 1916:

	1916	1917
January	36,986	36,570
February	37,863	40,967
March	43,810	42,949
April	41,771	25,909
May	43,031	15,969
June	42,252	17,129
July	40,268	20,744
August	46,814	38,134
Total	332,795	238,371

In addition to its British Columbia copper operations in the Boundary district of British Columbia, the Canada Copper Corporation has for several years been developing another copper property situated on Copper Mountain, within a dozen miles of Princeton, Similkameen district, says a bulletin issued by a New York concern. The company in 1916 spent \$396,000 on the further development of this Copper Mountain property and on the purchase of several more claims under bond. The company's annual report, issued lately, gives some particulars of the work done last year to confirm results indicated by diamond drilling previously done.

The work was mainly in the nature of underground development, which may also be utilized for the permanent operation of the property. To expedite doing this underground work a power transmission line 13.6 miles in length was constructed into Copper Mountain from East Princeton where there is a power plant at inoperative cement works, a lease of which power has been secured by the Canada Copper Corporation.

On the Copper Mountain property a tunnel 9x6 feet in the clear was driven a distance of 2,100 feet on the 3,950 foot level and numerous raises and lateral drifts were made, the total length of this work being 5,206 feet. As soon as it became apparent that the results secured from diamond drilling were reliable, drilling from the surface was resumed and 8,007 feet of diamond drilling was done in 1916.

In addition trenches to a total length of 2,364 feet were opened on newly located mineral claims. No material increase in ore reserves is reported for the period under review, because the underground work was done especially to check the accuracy of the previous diamond drilling operations. Underground diamond drilling is now being done from faces opened last year and it is reported that new ore is being encountered.

Prior to the execution of the underground development campaign, it was deemed expedient to class the ore as "reasonably assured" and "probable" ore. It is now estimated that there is 10,000,000 tons of definitely assured ore and 2,000,000,000 tons of probable ore. The average grade of this ore is 1.74 per cent. copper (or nearly 35 pounds to the ton) and 2 cents a ton of recoverable gold and silver. The ore thus far developed is well above the level of the Similkameen River. It is of primary nature and while likely to extend below the river, operations for many years to come will be confined to areas above the river and the

extraction of the ore will be by means of tunnels. Approximately one-half the ore thus far developed will be extracted by means of open cut mining.

At the beginning of 1916 a 5-ton experimental flotation mill was placed in operation for the purpose of outlining definitely the metallurgic procedure to be adopted in a large mill. The opinion of the company's own engineers regarding the geologic features is said to have been confirmed by an independent report on the properties made by Sidney H. Ball. Allen Hastings Rogers has also made an independent report on the property. His conclusion was that the property is sufficiently developed to warrant the erection of a mill to have a capacity of 3,000 tons a day, for which funds will be raised from \$2,500,000 bonds issue underwritten by Hayden, Stone & Co., convertible into stock at \$3 per share. The cost of producing copper was estimated at 9.57 cents per pound based on existing smelting rates.

The ore shoot opened at the surface on the property of the Hudson Bay Zinc Company, near Salmo, is growing rapidly in importance as the development proceeds. President M. W. Bacon had expectations of it more than a month ago, but development had not proceeded far enough, he said, at that time to permit of a definite statement. Subsequent operations added to the resources, it is gathered from the following statement, in which Mr. Bacon is quoted by a New York publication:

"Engineers now estimate that we have above the lower tunnel level a probable million tons, and possibly several times that amount, that should net \$2.50 per ton. The ore is a clean zinc sulphide with lime gage and no detrimental ingredients; extraction of 90 per cent. of the metal values can be secured."

The new body had an average width of six feet when opened early in July and had a commercial milling content of zinc. It is undergoing development by two tunnels near the surface and now appears, according to the New York authority, to have been opened on the deep tunnel level. The erection of a mill having a capacity of 500 tons daily is proposed.

Sinking to an additional vertical depth of 75 feet below the level of Kootenay Lake is being carried out at the Bluebell Mine at Riondel. The depth of the additional shaft on the slope is 100 feet and about half of it is completed. When the work has been finished a total vertical depth of 375 feet below the lake level will have been attained.

At the greater depth one of the peculiar features of the ore is that a greater percentage of oxidized rock is being found. This ore does not concentrate well, being so light that it floats off the tables in a sort of white slime. Hence S. S. Fowler, manager of the property, is shipping as much of it to the smelter in the crude form, with concentration, as he can secure barges to handle. The ore is silicious and is desirable for smelting purposes.

High metal prices and the desirable nature of the ore from a smelting viewpoint make it just practicable to mine and ship it in a crude form.

The geological explanation for the presence at depth of the oxidized ore is that Kootenay Lake was originally a river and the ore which is now being mined 300 feet or so below the lake level was then near the surface. It is believed that prior to the stage when the main Kootenay became a lake instead of a river the water found its outlet via Bonner's Ferry and the Spokane River, instead of down the west arm and into the present Kootenay River at Nelson.

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