

and machinery employed at any one plant were evolved from the ideas of many investigators working at many different places. Only a very small percentage of the ideas involved in the construction and operation of any one plant are attributable strictly to local talent. The day has long since passed when the efficiency of any copper smelting plant and its superiority to its fellows depends, except in rare instances, upon the careful guarding of its operating secrets. This conception is now so well recognized in the American copper industry that, practically, no copper smelting plant is closed to technical men who present proper credentials when applying for admission. The management of nearly all the larger industrial plants recognize that free interchange of ideas is of mutual advantage. In preparing this report every effort has been made to avoid introducing any descriptions of processes or methods which are considered business secrets by the operators. To make assurance doubly sure every chapter has been submitted to the executive staff of the works concerned for revision. The author is pleased to be able to state that while numerous small additions and corrections were added, no important sections were deleted in this revision."

This readiness of copper mining companies to impart useful information has been frequently spoken of and to it is commonly attributed no small part in the very rapid strides made in the metallurgy of copper.

After presenting an illuminating account of the development of the industry in the several Provinces, Dr. Wilson gives detailed descriptions of the plants of the Canadian Copper Co., and Mond Nickel Co., in Ontario and of the Consilodated Mining and Smelting Co. of Canada, Limited; Granby Consolidated Mining, Smelting and Power Co.; British Columbia Copper Co., and Tye Copper Co. in British Columbia.

To these descriptions the author adds miscellaneous summaries and a chapter on statistics of copper production.

The report is a very interesting and useful one. It contains numerous illustrations made from photographs and drawings and should prove valuable both to technical men and the general public.

LODE MINING IN YUKON

The Mines Branch, Ottawa, has published an interesting account by Mr. T. A. MacLean of the status of lode mining in Yukon. Mr. MacLean went to Yukon in May, 1912, for the purpose of examining the more important quartz deposits in the mining districts of Dawson, Duncan Creek, and Conrad, with a view to ascertaining their gold content and reporting on their probable economic value. Assisted by Mr. D. MacLachlan, he made a very careful investigation.

Placer gold was found on the Yukon as early as 1869. This river was further prospected between 1873 and 1878, and from 1881 to 1886. Bar mining on the Big Salmon, Lewes, Pelly, and Stewart rivers was conducted with increasing profit, until 1886, when coarse gold was first discovered in Fortymile region—the greater part of which proved to be in Alaska—and later

on Sixtymile and its tributaries: the latter being the chief producers of Yukon until 1896, when the Klondike creeks were discovered, and in 1898 and the following years, poured forth their wonderful stream of gold, which by the end of 1912 will have reached a total output valued at more than \$140,000,000.

Quartz mineral claims were first staked in 1899, about which time the Lone Star mine, situated at the head of Victoria gulch, came into prominence. Some development work was then undertaken; but this was overshadowed by the rich placer finds, and little was accomplished in connection with quartz.

The population of Yukon in 1900 was about 30,000, and the gold production \$22,275,000. In 1912, the population was estimated at 8,500, and the gold production at slightly over \$5,500,000; \$9,500 being produced by gold lode mining operations.

With the decrease in the production of placer gold, the hopes of the residents have for some time been directed to lode mining, and a certain amount of desultory work and development have been undertaken over a large area, but with only indifferent results. This is due, in part, to the following facts: (1) that prospectors were generally unfamiliar with lode mining; (2) that little or no high grade ore had been located, and consequently, capital for development of low grade was difficult to secure; and (3) that some considerable expenditures have been inadvisedly made on a number of properties.

Claims are located over wide areas throughout the mining districts of Dawson and Duncan creek in northern Yukon; Conrad and Whitehorse in the south; besides extensive areas in the White river and other outlying portions of Yukon territory.

Mr. MacLean gives detailed information concerning a very large number of properties. His report is accompanied by 6 maps, 39 sketches, and 40 photographs. The sketches are designed, primarily, with a view to their being of use to prospectors in the field: by indicating the points sampled on their various properties.

In summing up Mr. MacLean says:

"The examination herein described has verified the fact that throughout the whole district traversed quartz is found abundantly. It has also established certain preliminary values in connection with practically all the known deposits of the Dawson and Duncan Creek mining districts, and also in connection with at least a few of those in southern Yukon. A number of these deposits have proven sufficiently good to warrant the opinion that further development, accompanied by more detailed sampling, might demonstrate beyond reasonable doubt that the prospects have a future as mines. The chief among these are situated in southern Yukon, where the ore consists generally of quartz carrying argentiferous galena and gold. The Humper group of Merrers, Dail and Fleming, and the Venus mine, both on Windy Arm, show values in gold and silver which range from \$2 or \$3 up to \$96 per ton. The Whirlwind group and the Tally-Ho group, both on Wheaton river, show up well. In northern Yukon the prospects at Dublin gulch are considered to be good ones. Chief of these is the Stewart and Catto group, with values which range generally between \$3 and \$16 per ton. The Olive and the Eagle groups, adjoining these, are also worth while. The latter shows assay values as high as \$70.80 per ton, but has undergone little development.

"In the vicinity of Dawson are the Lone Star mine, the Violet group, the Mitchell, the Gold Run group, and others, deserving of mention. These properties could not, in one season, be examined in sufficient detail,