

important copper-producing districts of the Province are the Boundary, Coast, and Rossland; of these, the Coast bids fair to in future make a much larger output of this metal than it has done in recent years, for in both the Britannia mine, in New Westminster Division, and the Hidden Creek mine, near Goose Bay, Observatory Inlet, very large bodies of copper ore of commercial grade have been opened. No production of copper has yet been made at the latter mine, which was not extensively developed until the year just past, but it is planned to put in reduction works as soon as all arrangements necessary for smelting ore on a large scale are made. The increase in output of copper at the Britannia mine in 1911 as compared with 1910 is believed to have been between 6,000,000 and 7,000,000 pounds, but the actual output is not yet available. The Marble Bay mine, Texada Island, also made a substantial increase, but this was in part offset by a decrease at the neighboring Cornell mine. There is little comment to be made relative to either Boundary or Rossland mines in regard to their copper production, which is being generally well maintained, except when the supply of coke for the blast furnaces of the copper smelteries is interrupted.

The New York average price of electrolytic copper for 1911 was a trifle lower than that for 191—12.376 cents as compared with 12.738 cents—but the former year closed with an average for the month of December of 13.552 cents per pound, which was the highest monthly average since January, 1910. The expectation is that a higher price will rule in 1912, so the outlook for this year is considerably brighter. If this increase of one cent a pound occurred in the beginning of the year and had been maintained throughout, it would have meant an increase in the total value of this year's copper production of about \$400,000, and the copper mining companies would have benefited to this increased extent.

The smaller output of zinc in 1911 than in 1910 is accounted for by the fact that it was not practicable for either the Whitewater group of mines or the Lucky Jim, in the Slocan, to ship ore, owing to the absence of transportation facilities, for the Kaslo and Slocan Railway line, six miles of which was destroyed by fire in the summer of 1910, has not yet been reconstructed. Further, the Whitewater mill, also burned, has not been replaced, though in both mines much development work has been done, and shipment of ore will take place whenever it is possible to send it out.

No zinc concentrate was produced by the Slocan Star mill, though production may be resumed in 1912. There are now three mills in Four-Mile camp, Slocan Lake, equipped for producing a zinc as well as a lead concentrate, namely, those of the Van Roi, Silverton Mines, Limited (Hewitt-Lorna Doone), and Standard. Of these, the Van Roi produced in 1911 concentrate containing more than 2,000,000 pounds of zinc, and the Silverton Mines, Limited, a much smaller quantity. The Standard mill is a new one, the operation of which was only commenced late in the year.

No commercial results appear to have yet have been obtained from experiments in reduction of the zinc-lead ores of the Kootenay, neither by the Dominion department of mines, experimenting in the East, nor by any process tried in the province.

Some prospecting for iron ore has been going on in the vicinity of Quinsam and Battle Lake, on Vancouver Island, and it is stated that a large body of magnetite has been developed there, eighteen men being employed during the year. Statements were made as to the large quantity of ore; also that the ore contained as much as 68 per cent. iron, and was more than ordinarily free from impurities. No iron ore was mined in 1911, and the mines remain just as in 1910.

CORROSION OF IRON AND STEEL PIPE.

The resistance to corrosion of iron and steel pipe has been the subject of controversy for a long time, both steel and iron having adherents who believe the one would corrode less than the other under the same conditions. A recent series of experiments undertaken by William H. Walker, of the Massachusetts Institute of Technology, results of which were published in July, 1912, by the National Tube Co., indicates that there is no difference in the corrosion of iron and steel pipe taken on the average.

Naturally a poor steel will show less resistance to corrosion than a good iron, but the converse is also true. Comparisons should be made on practically equal grades of product.

Water which contains oxygen induces a rapid corrosion of pipe of either kind, while water without oxygen, other conditions being equal, will show much less corrosion, or none at all if no other corrosive elements are present.

Doctor Walker made 64 comparisons of steel and iron pipe where the history of the installation was known. The cases where iron was found more corroded than steel amounted to 20, and where steel was more corroded than iron to 18. There were 9 cases where there was no difference between the two.

In order to determine the relation between the so-called acid-corrosion test and actual corrosion in service an experiment was made in which pipes were subjected to 20 per cent. sulphuric acid for four hours at room temperature. Although every care was taken to have identical conditions with all samples subjected to the test, it was found that no reliance could be placed in it. It was shown to be erroneous and misleading. The acid test not only did not agree with the service test, but the steel and iron showed no agreement when considered by themselves.

ENGINEERING WORK IN QUEBEC.

Some important engineering work is in progress and projected at Quebec owing to the prospective entry of the Transcontinental Railway, which will have its eastern terminus in that city. This work includes a new bascule bridge to provide railway connections with the Louise Embankment, a pontoon to provide a berth for coasting vessels, several landing sheds, new piers to form part of other harbor work which will cost \$2,000,000, and two grain elevators. Plans have been prepared, and the work is to be undertaken as soon as financial conditions permit. It is anticipated that when these proposals have been put into execution Quebec will be able to obtain a larger share of the St. Lawrence grain traffic.

The Canadian Mining Institute held their annual session in Victoria, B.C., during the week of September 15th. Some of the speakers and entertainers illustrated their topics with lantern slides, among these were, Mr. E. Jacobs, secretary of the western branch of this institute, who spoke on the Copper Mining and Smelting Industries of British Columbia.

OBITUARY.

Mr. William R. Rombough, Toronto, the oldest Dominion Land Surveyor is dead. He came to Toronto about twelve years ago from Durham, Ont., where he had lived for a great many years. In early life he was probably the best-known surveyor in the employ of the government. Two of his greatest tasks were the surveying of the Counties of Grey and Bruce about half a century ago. He retired from active work 20 years ago. He was 90 years of age.