

ated with the deposits, were formed, in all probability, from material which existed not far from the early surface and had not been worked over by agents of denudation.

*Copper.*—Copper deposits are numerous in the territory bounded by the lower end of Lake Superior and the upper end of Lake Huron. Considerable development work has been done on these deposits during the last few years, and it would appear that a fair percentage of them will become producers. During the last decade or more, copper has been produced in association with the nickel ores of Sudbury. All these nickel deposits carry copper, and Ontario will in the years to come be credited, from the nickel mines, with a considerable amount of the metal now so much in demand for electrical and other uses. Another copper mine, that of Massey Station, has recently become a producer and the province has, chiefly, to thank the tireless energy and skill of that veteran metallurgist of this Institute, Major Leckie, for this much to be desired consummation.

Outside of the district embraced in the southern portion of Algoma and Western Nipissing the only copper property which has received serious attention is that which is now known as the Tip Top mine, west of Port Arthur. This mine has reached a stage of development which the owners consider warrants them in erecting a smelter.

The success already achieved in the copper industry, together with the knowledge that many deposits over a large territory, are as yet untested, should lead us to conclude that the province has a good future ahead as a copper producer.

*Lead and Zinc.*—The metals lead and zinc are commonly found associated in nature. Most of the deposits of these metals throughout the world are in rocks younger than the Archean, and from what I have said concerning the magnetic metals it might be inferred that lead and zinc would not be found in the province in large amounts. These metals show a tendency, however, to make their abode in limestones, wherever they can find them. In our Grenville