duce the same quantity of silver as formerly it is necessary to handle more ore, use more machinery and employ a larger number of men. The deposits are believed to be extensive enough to ensure a large output for many years. Silver has been found at a number of other points in northern Ontario, but the production outside the Cobalt district is small.

Many years ago silver was discovered in large quantities on a tiny island about ninety feet square in lake Superior near Thunder Cape. When the mine was abandoned in 1884, work had been carried on to a depth of 1,160 feet and it is estimated that silver to the value of $3,500,000 had been extracted.

Electro-Plating with Cobalt.—It is estimated that the silver ores and concentrates as shipped from Cobalt contain on the average 3.20 p.c. of cobalt, 1.47 p.c. of nickel and 14.28 p.c. of arsenic. Some of the ores contain much larger quantities of cobalt, and it was the original discovery of ores remarkably high in cobalt that gave the name to the district. The smelting companies that buy the ore from the operators of silver mines usually pay nothing for the cobalt, nickel and arsenic, and an exact record of the output of cobalt is not obtainable; but it is estimated that the production in this district is greater than that of all other countries combined. Dr. Herbert T. Kalmus, who recently conducted a series of experiments in electro-plating with cobalt at Queen's University, Kingston, Ontario, for the Mines Branch of the Canadian Department of Mines, reports that a solution of cobalt known as XIII B is capable of electro-plating at a speed of at least fifteen times as great as nickel, that the cobalt deposited at this rapid speed is very much harder than the nickel deposited in any commercial nickel bath, and that consequently a lesser weight of this hard cobalt deposit will offer the same protective coat as will a greater weight of the softer nickel deposit, so that for many purposes one-fourth the weight of cobalt as compared with nickel is required. Dr. Kalmus says that no nickel solution begins to compare with XIII B for the range of work which it will do and for the extremely high current densities at which it will operate, and that it is possible to get a plate in five minutes or less with solution XIII B which will stand bending tests and will buff as satisfactorily as a plate which has taken one hour from the usual nickel-plating baths. The cobalt plates take a very high polish with a beautiful lustre, which although brilliantly white possesses a slightly bluish cast. The director of the Mines Branch believes that as a result of these discoveries there will soon be a large demand for cobalt for electro-plating.

Silver-Lead Ores.—British Columbia has produced silver in considerable quantities steadily for many years. It comes chiefly from the argentiferous galena ores, but to some extent from the auriferous copper ores. Dr. Eugene Haanel says of the silver-bearing galena ores of British Columbia:

> There are a few producing mines in the Sheep Creek district, south of Nelson, but the largest number of mines are located in the Ainsworth and Slocan districts. The Sandoa-Silverton camps especially are showing promise, development at depth having been very satisfactory. The ores are argentiferous galena and tetrahedrite, with native silver and sometimes gold, argentite, zinc blende, etc., in veins cutting sediments. The ores of the Lardeau may be said to belong rather to the silver ores than to the lead,