

glomerate, greywacke, etc.), about 11 p.c. in the Keewatin, the basic igneous rocks underlying the Cobalt series, and the remaining 7 p.c. in the Nipissing diabase.

The Coniagas and Deloro smelters treat ores and residues and dispose of cobalt oxide, metallic cobalt and unseparated oxides of nickel and cobalt. The cobalt residues from the cyanide process are for the most part treated in Canada, though some are shipped abroad for treatment. The smelter output of cobalt, computed as the metallic contents of cobalt oxide, nickel oxide and mixed oxides, together with the cobalt in cobalt ores exported from the mines, and including cobalt in speiss residues exported, amounted in 1925 to 1,116,492 lb. valued at \$2,328,517, as against 888,061 lb. in 1923 and 948,704 lb. in 1924.

7.—Zinc.

The zinc-mining industry of Canada has recently made rapid strides, largely on account of the application of the electrolytic method to treating the lead-zinc ores of British Columbia. The metallic recoveries from Canadian ores were 109,268,511 lb. in 1925, as compared with 5,600,000 lb. in 1913, and constituting a record. From an insignificant position in 1913, the country advanced to the sixth rank among the world's producers in 1925, with an output of about 4.3 p.c. of the world total. The production in 1926 is estimated at 161,897,466 lb.

British Columbia.—The principal zinc-mining regions are situated in the Kootenay district of British Columbia, where there are large deposits of silver-lead-zinc ore. The chief producing mine is the Sullivan in the Fort Steele division, where the ore worked is a replacement deposit of considerable size. Other active mines are located at Ainsworth and Slocan in the West Kootenay district and at Omineca in the Cariboo district.

Before the war the industry was greatly retarded by unsatisfactory marketing conditions. The majority of the mines were essentially producers of silver and lead, and zinc-blende occurred as an accessory ore. Until local smelting proved successful, practically all the British Columbia ores were treated at seven or more smelters in the United States, but the cost of freight to these, although covered by a combined "freight and treatment rate," was necessarily an important charge against the ore. The high tariff on zinc ores exported to the United States was also a consideration. The smelter at Trail, originally intended, on its erection in 1895, for the treatment of gold and silver-bearing copper ores, was made ready for the treatment of silver-lead ores at a later date. No zinc is recovered in lead blast-furnace smelting, and it is detrimental to operation, causing losses, slow running and high cost.

The urgent demand for zinc during the Great War was largely responsible for energetic and aggressive action on the part of the Consolidated Mining and Smelting Co., owners of the Trail plant, in producing this metal and with this object in view, the erection of an electrolytic zinc refinery was commenced in 1915, rushed to completion and put into operation early in 1916. The company had then to turn its attention to solving the problem of recovering the values in the complex lead-zinc ores of the famous Sullivan mine. This was largely a problem of concentration in order to separate the finely divided lead and zinc ores. From the opening of the zinc refinery in 1916 regular shipments of zinc ore were made from the Sullivan and other mines, but it was not until four years later that the problem of concentration was satisfactorily solved by the application of oil flotation methods. Since that time the production of lead, zinc and silver has rapidly increased. Recent enlargements to the plant at Trail have enabled further increases in production to be made.