

Titanium.—Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec. During 1959 most of the Allard Lake ore was smelted by Quebec Iron and Titanium at Sorel, Que., to produce a high titania slag. Most of this slag is shipped to United States pigment producers and some goes to the Canadian market. Ilmenite from St. Urbain is sold as heavy aggregate and some of it is exported for the production of slag and ferrotitanium.

Cobalt.—Cobalt occurs in the copper-nickel ores of the International Nickel Company of Canada Limited and Falconbridge Nickel Mines Limited in the Sudbury area. International Nickel recovers the cobalt from its nickel refining operations at Port Colborne, Ont., and Clydach, Wales. Falconbridge recovers it in the refining of nickel-copper matte at its refinery at Kristiansand, Norway. Cobalt contained in the silver ores of the Cobalt-Gowganda area of Ontario is recovered by Deloro Smelting and Refining Company Limited at its smelter at Deloro, Ont. Sherritt Gordon Mines Limited produces refined cobalt and nickel-cobalt powder at its nickel refinery at Fort Saskatchewan, Alta., by refining nickel-copper concentrates shipped from its mine at Lynn Lake, Man. Canadian production of cobalt during 1959 was 3,298,328 lb. valued at \$5,927,003, an improvement over the 1958 output of 2,710,429 lb. valued at \$5,308,298 but below the record of almost 4,000,000 lb. set in 1957.

Tungsten.—During 1958 tungsten production from the operations of Canadian Exploration Limited at Salmo, B.C., amounted to 690,976 lb. of tungstic oxide (WO_3) valued at \$1,898,455. There were no other producers. In 1959 there was no production at Salmo, this being the first year since 1946 in which Canada did not produce tungsten ore.

Molybdenum.—Molybdenite Corporation of Canada Limited was the sole Canadian producer of molybdenite and molybdic oxide in 1959. Shipments from the company's mine at Lacorne, 23 miles northwest of Val d'Or, Que., amounted to 850,000 lb. of contained molybdenum valued at \$1,105,000 compared with 888,264 lb. valued at \$1,152,838 in 1958.

Selenium.—Selenium is derived from the refining of blister copper by Canadian Copper Refiners Limited at Montreal East where the company operates the largest selenium metal-and-salts plant in the world. International Nickel also produces selenium at Copper Cliff, Ont. Production in Canada in 1959 totalled 564,415 lb. valued at \$3,849,905 and in 1958 it was 306,990 lb. valued at \$2,302,426.

Magnesium.—Magnesium was produced by two companies in 1959. One of these, Magnesium Company of Canada Limited, ceased operations in September at Wakefield, Que., where it was mining a brucitic limestone. The sole producer in Canada at the end of 1959 was Dominion Magnesium Limited. Its thermal reduction plant and adjacent dolomite quarry are located at Haley, Ont. Production of magnesium in 1959 amounted to 11,633,213 lb. valued at \$3,489,964 compared with 13,591,705 lb. valued at \$4,064,825 in 1958.

Other Metals.—Canada also produces small quantities of antimony, bismuth, cadmium, calcium, tellurium, thorium and tin, largely as by-products in the refining of base metals. Of these minor metals, cadmium with a 1959 production valued at \$2,636,456 and tin valued at \$931,840 are the most important.

Subsection 2.—Industrial Minerals

The total value of industrial mineral production in 1959 reached an all-time high of \$490,545,000, reflecting Canada's continuing industrial growth. Several of the non-metallics contributed substantially to the increase of 14 p.c. over the 1958 total mineral production. New highs were established for gypsum, lime, nepheline syenite, salt, talc and soapstone, cement, clay products, sand and gravel; other non-metallics, including asbestos, recorded gains. The highlights of development in the industry during 1959 are outlined below.