

90,000 tons annual capacity of its smelter at Baie Comeau in Quebec by 45,000 tons; completion is expected by 1965. All other smelters in Canada are owned and operated by the Aluminum Company of Canada, Limited and are located at Arvida, Shawinigan, Isle Maligne and Beauharnois in Quebec and at Kitimat in British Columbia.

Production of primary aluminum in 1960 was 762,012 tons of which 552,155 tons were exported. The value of these exports at \$243,034,000 represented 4.6 p.c. of the value of all commodity exports from Canada. Because of difficult marketing conditions, production in 1961 was reduced to 663,000 tons and 487,000 tons were exported.

Platinum Metals.—Production of platinum metals in Canada during 1961 totalled 404,883 oz.t. valued at \$23,829,172, compared with 483,604 oz.t. valued at \$28,873,508 in 1960. The metals are obtained as a by-product of the pyrometallurgical treatment of nickel-copper ores and include two groups—platinum-iridium-osmium and palladium-rhodium-ruthenium. Osmium is the only member of the platinum metals group not recovered in Canada. Formerly, all platinum production came from the Sudbury area of Ontario, but the new nickel mine at Thompson in Manitoba, which began operation early in 1961, provides a second source. In the metallurgical treatment of nickel-copper ores the platinum metals go with the nickel and copper through the reverberatory and converter stages to nickel and copper anodes. They are picked up as slimes from tank bottoms in the electrolytic stages. The platinum metal slimes, after separation from other precious metals and impurities, are then refined by a wet process to commercial platinum, palladium, iridium, rhodium and ruthenium.

Major world producers of platinum metals are the Republic of South Africa, Canada and the Soviet Union. World production during 1960 was estimated at 1,190,000 oz.t., each of the three countries producing approximately one-third. Neither South Africa nor the Soviet Union releases official production figures on the platinum metals.

December prices of platinum metals, per oz.t., in the United States, as reported in E. & M.J. Metal and Mineral Markets of Dec. 15, 1961 were: platinum \$80 to \$85; iridium \$70 to \$75; palladium \$24 to \$26; rhodium \$137 to \$140; osmium \$60 to \$70; and ruthenium \$55 to \$60. The platinum metals are now used principally as catalysts in the chemical industry and as electrical contacts in the electrical industry. Relatively minor amounts are used in jewellery and in dental-medical equipment.

Subsection 2.—Industrial Minerals

The total value of industrial mineral production increased in 1961 to a record \$527,014,000. This segment of the mining industry includes non-metallic minerals such as fluorspar, silica, etc., clay and other ceramic products, construction materials such as concrete aggregate and building stone. New production records were established for asbestos, elemental sulphur, sodium sulphate and titania.

Asbestos.—Despite the enormous growth in the production of asbestos in the Soviet Union and competition in European markets, Canada has maintained its position as the major supplier of this important mineral commodity to the world market. During 1961, shipments amounted to 1,171,000 tons valued at \$131,053,000.

Chrysotile, the most widely used variety of asbestos, occurs in several places in Newfoundland, Quebec, Ontario, British Columbia and Yukon Territory. However, the main centre of the industry is in the Eastern Townships of Quebec where 12 mines account for more than 90 p.c. of the nation's production. Two other mines are located elsewhere in Canada, one in northern Ontario and one in northern British Columbia, and Newfoundland will soon join them as an asbestos-producing province. Advocate Mines Limited is developing a large deposit at Baie Verte; a contract has been awarded for the construction of tide-water docking facilities, a fibre warehouse and a mechanical services building and it is expected that construction will start in 1962 on the milling