

states in its recent annual report, it has become increasingly evident that the several ore deposits on its properties are extensive in area and that they are likely to persist to great depths. Ore potential has been estimated at as much as 500,000,000 tons per 1,000 feet of depth.

All the output from the deposits to date has come from open-pit operations at the Errington mine, but the Company is currently making a complete changeover to underground operations at this mine and is preparing its Hogarth mine for open-pit operations. Discussing the outlook, the Company expresses the view that full exploration of its deposits will justify production in excess of 10,000,000 long tons annually over a period of many decades. Practically all of the output, which amounted to 1,486,000 long tons in 1951, is exported to the United States.

Developments in the Michipicoten area also point to a substantial increase in iron-ore production in the years ahead. The Helen mine of Algoma Ore Properties Limited continues to be the only producer, but there are several other properties in the area available for development. Indicated reserves on some of these are in excess of 100,000,000 tons. The ore in the area is siderite and requires sintering to bring it up to commercial grade. The Helen ore is relatively high in manganese and accordingly is much in demand. About two-thirds of the output is exported to the United States and the remainder is used by Algoma Steel Corporation, the parent company. Production of sinter from the Helen mine increased from 504,534 long tons in 1945 to 1,188,842 long tons in 1951.

Meantime, the search for iron ore has spread to eastern and central Ontario, portions of which are underlain by iron-bearing rocks. The most advanced operation is at Marmora about 40 miles east of Peterborough where Bethlehem Steel Corporation has been preparing for production a magnetite deposit that was discovered in 1949 as a result of an airborne magnetometer survey conducted by the Geological Survey of Canada at the request of the Ontario Department of Mines. Production is scheduled to commence in 1954 at an initial rate of 400,000 tons of concentrate a year. The concentrate will be shipped to the Company's plant near Buffalo via Picton on Lake Ontario.

During the past ten years, the International Nickel Company of Canada Limited, long the source of over 80 p.c. of the world's output of nickel and a leading producer of copper, has been pushing forward its major program of changing over entirely to underground mining from the present open-pit and underground operations in the Sudbroy area. This program is scheduled for completion by the end of 1953 and will enable the Company to hoist 13,000,000 tons of ore a year which is 5,200,000 more than the record tonnage hoisted from underground in 1951. In a related major development, the Company in 1951 brought into regular production the lower grade portion of its Creighton mine, employing new low-cost caving methods. This has involved the sinking of a shaft, construction of a crushing plant and concentrator, and construction of the pipe line to carry the resultant concentrate to Copper Cliff.

On the metallurgical side, the Company has completed the construction of a special type of smelting furnace which will use oxygen for the flash smelting of its copper concentrates in place of pulverized coal. This will permit not only a considerable reduction of cost but will also make possible a greater utilization of sulphur in the form of liquid sulphur dioxide from the smelter gases. The International