

**Sulphur.**—With the development of natural gas fields in the west, Canada is becoming an important source of elemental sulphur. Seven years ago Canadian needs for this commodity were met entirely by imports; today export outlets are essential to provide a market large enough to absorb the growing production.

Although pyrite, other sulphides and smelter gas are still the sources providing the greater part of the output of elemental sulphur, in 1959 about 30 p.c. of the total was recovered as a step in preparing sour natural gas for transmission to market by pipeline. By the end of the year there were in operation six recovery plants in Alberta, one in Saskatchewan and one in British Columbia, together capable of producing 590,000 long tons of elemental sulphur annually. Twelve additional plants were in various stages of planning, their construction depending on the development of markets for natural gas. With these plans fulfilled, Canadian recovery of elemental sulphur is expected to reach an estimated 2,000,000 tons per annum.

One of the important contributions to elemental sulphur production during 1959 was the completion by British American Oil Company Limited of a third recovery unit at its Pincher Creek plant in Alberta, increasing daily capacity to 678 long tons. The addition makes this the largest operation of its kind in the Commonwealth, and one of the world's major plants for recovering sulphur from sour natural gas. A new well with a daily open flow yield of over 200,000,000 cu. feet of raw gas was brought into production in the Pincher Creek field. At Okotoks, 20 miles south of Calgary, the extraction plant constructed jointly by Texas Gulf Sulphur, Devon Palmer Oil and Shell Oil was placed on stream on May 31. Erected at a cost of \$8,000,000, it is capable of processing daily 30,000,000 cu. feet of sour gas from the Okotoks field and extracting 375 tons of sulphur. At Nevis, Alta., B.A. Oil extended its gas processing plant to recover 75 tons of sulphur a day from Nevis field gas, which contains 6.8 p.c.  $H_2S$ .

Elemental sulphur is also being recovered in Eastern Canada. Laurentide Chemicals and Sulphur Limited, with a reported capacity of 100 tons daily, is recovering it at Montreal East from the petroleum wastes of five refineries located there. The International Nickel Company of Canada Limited is recovering this element at the Port Colborne refinery during the electrolysis of nickel matte. Since April, International Nickel and Texas Gulf Sulphur Company have operated a pilot plant near Copper Cliff, Ont., extracting elemental sulphur during the roasting of pyrrhotite concentrates.

Canada's emergence as one of the world's leading nations in the production of elemental sulphur appears assured. As the plans of the industry are completed, production will be considerably above domestic requirement and the creation of an export market is vital. With production costs comparable to or less than those of the established foreign sources, the main problem is cost of transportation to the larger marketing areas. In world markets, Canadian sulphur will be competing with Frasch sulphur from the United States and Mexico and the new by-product source at Lacq in southern France. The latter source is expected to reach an annual productive capacity of 1,400,000 tons by 1962.

**Potash.**—More than ten years of exploration and development in Western Canada were brought to a successful conclusion by Potash Company of America Limited when, late in 1958, it commenced production from Canada's first potash mine, situated at Patience Lake, 14 miles east of Saskatoon. Lying beneath a large area of southern Saskatchewan and southwestern Manitoba is believed to be the world's largest high-grade deposit of potash. Reserves indicated by drilling have been over 25 p.c.  $K_2O$ . The beds dip flatly to the southwest. The shallowest deposits found in place to date are at depths ranging from 2,800 feet near the Saskatchewan-Manitoba boundary east of Esterhazy to 3,335 feet near Saskatoon and 3,450 feet near Unity. Deposits of economic interest have been found only in Saskatchewan and in a small area in Manitoba along the Saskatchewan boundary. Potash minerals, mainly sylvite (KCl) and carnallite ( $KCl \cdot MgCl_2 \cdot 6H_2O$ ), occur in three zones that are fairly distinct and continuous but vary in thickness and grade at different locations.