

In 1953, Canada produced 1,721,218 tons of silica worth \$1,799,463. Imports in the same period amounted to 703,221 tons valued at \$1,928,438. The imports consisted mostly of silica sand for the glass industry. As yet, a suitable glass sand has not been produced in Canada but intensive efforts are being made to locate a suitable domestic source.

Production of *sodium sulphate* in 1953 amounted to 112,881 tons valued at \$1,704,313. Not many years ago the alkali sloughs of Western Canada were looked upon as useless—even as dangerous in a cattle-producing area. Investigations in the 1920's showed them to contain well over 100,000,000 tons of solid hydrous sodium sulphate, one deposit alone containing 25,000,000 tons. To-day, four companies are producing the material which is sold for use in making kraft pulp, heavy chemicals and detergents.

Although Canada has no known deposits of native *sulphur*, such as those in the southern United States, it has vast resources of sulphur-bearing minerals from which continually increasing tonnages of elemental sulphur, sulphuric acid, and sulphur dioxide are being obtained. Sulphur and its compounds are used directly or indirectly by practically every industry; in fact, the trend of sulphuric acid sales provides a barometer of industrial activity. Adequate sources of sulphur are vital to any industrial nation but the necessary processes must be developed to make the sulphur available for industrial use. Such processes have been developed in Canada, and this country is within measurable distance of being self-sufficient in sulphur supplies. Eastern Canada and British Columbia produce very large quantities of pyrite, and other sulphide minerals—the pyrite mainly as an inexpensive by-product. For many years it has been utilized as a raw material for making sulphuric acid, for the sulphur is released when sulphide minerals are roasted or smelted, and can be recovered from the smelter gases. Recovery of both elemental sulphur and sulphuric acid from smelter gas was pioneered by the Consolidated Mining and Smelting Company Limited at Trail, B.C. At present, three metallurgical companies are recovering sulphuric acid from this source. Canadian Industries Limited operates the largest plant of its kind for the production of liquid sulphur dioxide from gas from the new oxygen flash-smelting process of International Nickel Company at Copper Cliff, Ont. The C.I.L. plant came into operation in 1953 and produces 90,000 tons annually of the liquid sulphur dioxide—equivalent to 45,000 tons of sulphur. It is used mostly by pulp mills.

Noranda Mines Limited completed a plant near Welland, Ont., late in 1954 to recover annually 18,000 tons of elemental sulphur and 36,000 tons of sulphur as sulphur dioxide from pyrite. In this process 75,000 tons of iron sinter will also be made.

On the Prairies, exceptionally pure elemental sulphur is being recovered from sour natural gas by Shell Oil Company of Canada at the rate of 11,000 tons, and by Royalite Oil Company at the rate of 10,000 tons, a year. The output is marketed with pulp mills on the West Coast. The Shell Oil plant capacity is being doubled to supply Gunnar Gold Mines' new uranium recovery plant at Beaverlodge, Sask.

In 1953, the equivalent of 358,850 tons of sulphur was produced in Canada from these various sources. This was somewhat less than imports which amounted to 359,105 tons in the same period. However, in the future it is expected that a steadily increasing proportion of sulphur will be produced from domestic sources.