

frigerating operations and the extended use of tar products have prompted the larger plants to increase their output. The industry is also intimately connected with the iron and steel industry and depends upon the demand of the non-ferrous smelting plants. By-product coke plants are maintained at Sydney, Hamilton and Sault Ste. Marie by the three principal iron and steel companies and by the Hamilton By-Product Coke Co. The Crow's Nest Pass Co., and the Granby Consolidated Mining, Smelting and Power Co. also operate plants for the manufacture of metallurgical coke.

Other industries of a varied nature included in this group are the manufacture of asbestos products, the glass industry, the manufacture of abrasives, the preparation of ornamental and monumental stone, the bottling of aerated waters and the manufacture of various clay products and cement.

Chemicals.—New developments in Canada's chemical industries serve to focus attention on the growth of these great enterprises. At the present time the expansion in this field is more noticeable than at any other period since the abnormal expansion during 1914-1918, when war demands necessitated the establishment of many new lines of production.

At Trail, B.C., large chemical plants are shortly to be erected. The sulphuric acid plant, using the gases from the zinc roasting process, will be enlarged. Nitrogen obtained through the liquefaction of air will be converted to ammonia, and both ammonium phosphate and ammonium sulphate will be made, as well as superphosphate of lime for use as fertilizer. New superphosphate plants are being built at Hamilton, Ont., and Belœil, Que.

At Sandwich, Ontario, where caustic soda and chlorine have been made for many years by the electrolysis of brine, by-product hydrogen formerly wasted is being saved and made into ammonia by the Casale process. This ammonia is shipped to Belœil and there oxidized to nitric acid for use in the manufacture of explosives and fertilizers.

In the Sudbury area, owing to the growth of the nickel-copper industry which uses large quantities of acid sodium sulphate in the smelting process, a new chemical plant is being erected to make acid sodium sulphate from the Saskatchewan natural sulphate. This is a notable development in that the new works will produce only a material that was formerly considered to be a waste product. This development involves the enlargement of the sulphuric acid plant using the waste gases from the smelter.

The growth of the ten main groups of chemical industries in Canada may be realized by noting that the total gross production of these industries in 1921 was about \$89 millions and in 1929 nearly \$138 millions.

The chemical industries of the Dominion may be arranged in the following order of importance, based on the gross value of product:—(1) acids, alkalies, salts and compressed gases, (2) paints, pigments and varnishes, (3) soaps, washing compounds and toilet preparations, (4) medicinal and pharmaceutical preparations, (5) explosives, ammunition, fireworks and matches, (6) coal tar products, (7) inks, dyes and colours, (8) fertilizers, (9) wood distillates, and (10) a miscellaneous group of industries not otherwise classified. These industries con-