Another important plant which uses salt brine as its chief material is operated by Brunner-Mond Canada, Limited, at Amherstburg, Ont. Built in 1919, it is the only producer of soda ash in Canada and also, since 1934, of calcium chloride which is recovered as a secondary product in the Solvay process.

While these alkali producers were working to capacity in June, 1948, and in some instances had extended their facilities considerably since the start of the Second World War, there were still substantial imports under these headings in 1947 amounting to 28,899 tons at $740,074 for caustic soda and 4,390 tons at $184,398 or soda ash.

In late 1946, there were three caustic-chlorine plants under construction, one by the Dow Chemical Company of Canada, Limited, Sarnia, Ont., one by the Dominion Alkali Chemicals, Limited, Beauharnois, Que., and one by the Aluminum Company of Canada, Limited, Arvida, Que.

Acids.—In the acids division of the industry, Canada has long been self-sufficient in regard to inorganic acids, but has been very largely dependent on foreign sources for her supply of organic acids. The manufacture of sulphuric acid was started at London, Ont., in 1867, and the next commercial unit was built at Capelton, Que., at which location there was a considerable supply of pyrites from nearby mines. Built in 1885, this latter plant operated steadily until 1925 when it was dismantled. The first unit using the contact process was built in 1908 at Sulphide, Ont., with pyrites as the chief source of sulphur, and the first plant to utilize smelter gases was built at Coniston, Ont., in 1925. Three new plants were built after the outbreak of the Second World War to make ten producers in all, as follows: the Canadian Industries, Limited, at Copper Cliff, Ont., Hamilton, Ont., and New Westminster, B.C.; the Consolidated Mining and Smelting Company of Canada, Limited, at Trail, B.C.; the Nichols Chemical Company, Limited, at Sulphide, Ont., Valleyfield, Que., and Barnet, B.C.; the North American Cyanamid, Limited, at Welland, Ont.; the Aluminum Company of Canada, Limited, at Arvida, Que.; and the Dominion Steel and Coal Corporation, Limited, at Sydney, N.S. Output of sulphuric acid in 1947 totalled 717,830 tons (66° Be) compared with the highest pre-war tonnage of 282,716 of the same density in 1937.

The successful recovery of sulphuric acid from smelter gases has been one of the outstanding developments of the industry. Previously the raw materials for its manufacture were either sulphur or sulphur-bearing ores and with the exhaustion of the latter more dependence was placed on elemental sulphur imported chiefly from Texas, U.S.A. In search of a cheaper source of sulphur, attention was turned to the sulphur gases which belched from the stacks of Canada's huge metal smelters. In 1925, a trial plant was built by Canadian Industries, Limited, at Coniston, Ont., in connection with the nickel smelter at that point, and it proved highly successful. In 1929, this Company established a larger and permanent unit at the smelter of the International Nickel Company, Limited, at Copper Cliff, Ont.

Even more striking were the developments at Trail, B.C., arising out of the utilization of the gases from the lead-zinc smelter of the Consolidated Mining and Smelting Company of Canada, Limited. For some time this Company had been faced with claims for damage to crops on nearby lands from the sulphur-bearing gases, and the problem assumed international proportions when complaints came from across the International Boundary. This condition of affairs and the desire to eliminate waste led to an extensive program of research which culminated in the building of one of the largest chemical plants in the country. It was decided to