carried the value to $138,500,000 in 1929. Then came the depression years during which production fell, in 1933, to $92,800,000 from which it then advanced steadily to the pre-war high of $159,500,000 in 1939. Since then, there has been phenomenal expansion featuring the erection of many new plants and the manufacture of many new products. In 1946, the value of output was $376,288,264.

In 1946, there were 1,017 operating establishments in the chemicals and allied industries and these were distributed across the country as follows: 534 in Ontario, 327 in Quebec, 64 in British Columbia, 37 in Manitoba, 18 in Alberta, 16 in Nova Scotia, 11 in Saskatchewan, 8 in New Brunswick and 2 in Prince Edward Island. Quebec accounted for 33 p.c. of the production and those in Ontario for 53 p.c.

The average employment in all these works was 37,278 employees and salaries and wages for the year totalled $66,538,532. Details of the chemical process industries are given on pp. 544-550.

The chemical industries might be conveniently arranged in three groups: (1) to include the actual manufacture of heavy or fine chemicals; (2) to include the manufacture of allied products, such as coal tar and hardwood distillation products, paints, soaps, medicines, etc.; (3) to include the chemical process industries such as pulp and paper, electrolytic refining, etc. For statistical purposes the first two divisions are grouped under the heading of chemicals and allied products while the process industries are distributed amongst other industrial groups. This review will indicate in some detail the extent and diversity of the heavy chemical industry in Canada and briefer mention will be made of the allied and process divisions.

The Heavy Chemical Industry Group

Information regarding the beginning of the chemical manufacturing industry in Canada is very sketchy. The Census of 1890 showed the output of chemical plants at slightly more than $2,000,000 but it seems certain that this total included some allied products as well as basic chemicals. At any rate, the industry at that time was very small—a sulphuric acid plant had begun operations a few years previously, the manufacture of methyl alcohol by the destructive distillation of wood had been started, some nitroglycerine was being made for use in explosives, and some ethyl alcohol was being produced. The next decade, however, saw the start of the electro-chemical industry with the building of a carbide plant at Niagara Falls, Ont., and a phosphorus works at Buckingham, Que. From the turn of the century to the outbreak of the First World War, there was continued expansion featuring the opening of large works to make carbide at Shawinigan Falls, Que., cyanamide at Niagara Falls, Ont., and electrolytic caustic soda at Windsor, Ont. With the First World War there came heavy responsibilities to manufacture special chemicals for munitions purposes and a number of new plants and extensions were erected. Some of these developments were essentially for war needs, such as the manufacture of trinitrotoluene, cordite, etc., and were discontinued soon after the Armistice, but others were of a fundamental nature and remained as part of the permanent industry. Outstanding among the latter was the synthetic acetic acid and acetone plant at Shawinigan Falls, Que.

The period between the two wars, 1918-39, was characterized by a steady advance in both volume and diversity of products including such outstanding developments as the manufacture of soda ash at Amherstburg, Ont., and of sulphuric acid from waste smelter gases at Copper Cliff, Ont., and at Trail, B.C.