

The Canadian production during the present century has shown fairly steady growth from 59,428 tons in 1901 to 91,582 in 1911, 164,658 in 1921, 262,547 in 1926 and a high record of 330,264 tons in 1929. Production declined to 259,047 tons in 1931 but has since recovered to 280,115 tons valued at \$1,939,874 in 1933 (see Tables 2 and 5A of this chapter). The estimate for 1934 was 321,753 tons.

## Section 6.—Production of Clay Products and Other Structural Materials.

Production of these materials is naturally dependent upon the activity of the construction industry in Canada. Building and construction work fluctuates widely with business cycles and during the recent depression dropped to a very low ebb. Under these circumstances the production of clay products, cement, gravel and stone was severely curtailed. Some uncompleted large engineering construction operations and governmental relief projects eased the decline in the early years of the depression but the downward trend was evident into 1933. It is encouraging to observe, however, that with a moderate recovery of construction activities in 1934 there was an increase in the estimated production of the chief structural materials, the total estimated value of production being \$19,233,092 as compared with \$16,696,687 in 1933.

**Brick and Tile.**—Although the brick and tile industry is established in every province of the Dominion, production is naturally greatest near the chief centres of population, that is, in Ontario and Quebec. Here the widespread clays of glacial and post-glacial age occurring over considerable areas of the St. Lawrence Lowlands have furnished the materials for numerous brick and tile industries. Production fluctuates with building activity and reached its highest point in the year 1912. Since that time the gradual substitution of steel and reinforced concrete for brick has reduced the production of brick so that, while the value of construction undertaken in 1928 or 1929 is estimated to have exceeded that of 1912, the quantity of brick produced in the later years was only about half that of 1912. On the other hand, as will be seen from Table 31, the production and consumption of cement in 1929 greatly exceeded that of 1912 or 1913. The production of building brick of various types in 1932 and 1933 is shown in Table 2 of this chapter, while the production by provinces in 1932 and 1933 is given in Tables 5 and 5A. Estimated production in 1934 is given in Table 2A.

**Cement.**—The cement industry in Canada began with the manufacture of hydraulic or natural rock cement. The first production was probably at Hull, Quebec, between 1830 and 1840. The manufacture of Portland cement began about 1889. Owing to its superiority in uniformity and strength, it soon superseded the older product. Portland cement consists of an accurately proportioned mixture of lime, silica and alumina. The lime is usually furnished by limestone or marl, and the silica and alumina by clay or shale. The cement industry has naturally become established where these materials are situated and where fuel supplies and transportation are readily available. The largest production is in Quebec and Ontario, although there are also active plants in Manitoba, Alberta and British Columbia. As may be seen from Table 31, production declined greatly from 1929 to 1933, but recovered somewhat in 1934. Production by provinces in 1932 and 1933 is given in Tables 5 and 5A of this chapter. Whereas in pre-war years Canada was an importer of Portland cement she is now on balance an exporter of this commodity.