

the number of wage-earners employed likely to be a representative measure of changes in the volume of production. The progressively increasing use of machinery and the rise in the power installed per wage-earner (see Table 3) tend to increase the employee's output. Thus while the reported wage-earners in 1929 had increased 33.5 p.c. over the number in 1923, the volume of production is estimated to have increased by 50.2 p.c. in the same period.

In the construction of an independent measure or index of the volume of manufacturing production many difficulties were encountered. There are constant changes in the commodities manufactured and in their relative proportions. New articles are introduced and rapidly come into common use, such as the radio during the past decade, giving rise to quite large new industries and frequently resulting in a decline of previously existing industries. It was very difficult to construct an index which would accurately show changes in manufacturing effort resulting from these changes in production. A second difficulty arose from the fact that many establishments find it difficult to accurately report quantitatively their minor products or by-products, and a few industries find the same difficulty in reporting their major products. In such cases changes in the raw materials used or in the wage-earners employed were used in the construction of the index. A third important difficulty arose from the fact that, even where there was continuity in the kind of commodities produced and where such commodities were reported quantitatively, there have been changes which are not capable of statistical measurement in the quality of the commodities produced. For instance, the motor vehicle of to-day is a very different thing from that of ten or even five years ago. The improvement has entailed increases in plant equipment and workmanship and a generally greater manufacturing effort per unit produced. It is quite obvious that a true index of the volume of production should represent changes in quality as well as quantity. Since this is not possible, and since the trend of modern manufacturing is toward a more elaborate fabrication of materials with consequent improvement in quality and workmanship, it is essential to recognize that an index of volume is likely to understate rather than overstate the growth of manufacturing processes. In spite of these difficulties it is believed that the index in the table which follows is reasonably reliable for the broad groups of industries and may justifiably be used in making generalizations.

The central electric stations were excluded from general manufactures in making the index, since this industry is in a class by itself in the peculiar function of its product, and is also unique in the magnitude of its capital investment and the smallness of its labour force in proportion to its net production. The index is based on the quantities of manufactured products reported and includes 71.1 p.c. of the total value of the production in 1926, exclusive of central electric stations. It is weighted according to the values added in the manufactures of 1926. A complete description of the manner in which the index is constructed will be found in the publication referred to in the footnote on p. 320.

The Growth of Manufactures 1923-29.—The physical volume of manufacturing production, exclusive of central electric stations, increased 50.2 p.c. from 1923 to 1929. When it is recalled that the population of Canada is estimated to have increased only 11.3 p.c. during the same period, the growth of manufacturing production is indeed remarkable. Of this advance, the part resulting from an increase in the domestic demand due to growth of population would be about 11.3 p.c. Exports of partly and fully manufactured goods increased from \$591,830,000 in the fiscal year ended Mar. 31, 1924, to \$690,904,000 in the fiscal year 1930, the increase