Of the total increase in power equipment employed in all manufacturing and mining industries since 1923, amounting to 3,114,553 h.p., or 127 p.c., approximately 85 p.c. was in electric motors operated on power purchased from central electric stations. Hydraulic turbines and water wheels accounted for about 2 p.c. of the increase but because central electric power is 98 p.c. hydro-electric, it is fair to state that about 85 p.c. of the increase was direct hydraulic or hydro-electric drive. However, some sections of Canada are not so well provided with water power and in such sections primary power derived from steam engines or turbines, and internal combustion engines—which include all gasoline engines, gas engines (natural, coal, and producer gas), and compression-ignition engines—has also increased rapidly during the period covered. In 1937, as will be seen from the table on p. 390, the percentage of all power equipment installed under these headings was 20·9, most of which was steam engines and turbines. Hydraulic turbines and water wheels reached 12·6 p.c., and electric motors operated by purchased power 66·6 p.c. During the period 1923-37 there has been very little net increase in the use of water wheels; steam engines increased in capacity in the same period by about 39 p.c.; internal combustion engines more than doubled; but the capacity of electric motors has about trebled.

In the Provinces of Prince Edward Island, Nova Scotia, New Brunswick, Saskatchewan, and Alberta, primary power produced from fuels is an important factor.

Of the total power equipment installed in the manufacturing industries in 1937 (first part of Table 20), it will be seen that approximately 51 p.c. is used in the manufacture of wood and paper products; the next group in importance is iron and its products, which accounts for a little over 15 p.c.; non-ferrous metal products is third with 10 p.c. Together, these three groups account for 76·6 p.c. of such installation.

The electric power employed in the pulp and paper industry is far greater than that consumed in any other individual industry, constituting 35 p.c. of the total for all manufacturing industries in 1933 and 38 p.c. in 1937, and the growth in electric drive for this industry—from 447,847 h.p. to 1,520,534 h.p.—over the same period has been an important factor in the increase as a whole.

Of the equipment installed in mining industries, nearly 62 p.c. is used in metal mining and almost 33 p.c. in non-metal mining.

Power Used in Industries.—Central electric stations, with 7,539,435 h.p. of primary equipment and 6,374,304 kva. of dynamo capacity, produced 27,687,645,000 kwh. in 1937. This was about 50 p.c. of the industry's capacity working 24 hours per day for 365 days. Very few industries work on a 24-hour, 7-day week basis; also few industries can utilize their power equipment as efficiently as central electric stations. Further, power used in any form except as electricity is not measured and consequently a measure of the mechanical power used in industries is not possible other than the capacity of the equipment. If other forms of mechanical power used in industries were measured in the same manner as electric power, the total quantity could be computed. It is not feasible from data available to convert the kilowatt hours and fuel consumed because large quantities of electric power are used to heat water, smelt metals, decompose water, and for other electric chemical purposes; also the thermal values of fuels and efficiencies of boilers and engines differ widely.