THE WORLD'S RUBBER SUPPLIES*

IN the course of a paper on "The World's Rubber Supplies," delivered at Birmingham before the Midland Section of the Institution of the Rubber Industry by Dr. George Rae, D.Sc. (Messrs. Harrisons and Crosfield, Limited), on Tuesday, 13th January, 1931, the speaker pointed out that rubber is to-day mainly obtained from plantations, wild rubber, which 30 years ago was the only source, representing only about 3 per cent. of the total world supply. Under the stimulus of the high prices obtaining during the early years of the century rubber planting was carried out at a rapid rate, especially after 1905, both by Europeans and Asiatics. The Asiatic proportion rose from about 20 per cent. of the total in 1910 to 35 per cent. in 1920 and to over 50 per cent. in 1930.

The total area under plantation rubber at the end of 1929, continued Dr. Rae, was between 6,600,000 acres and 7,200,000 acres, of which the area under native rubber in the Dutch East Indies variously estimated at between 1,100,000 acres and 1,700,000 acres. The estimates of the area under Dutch native rubber are based on the exports of this rubber and on the opinions about its average yield per acre and about the proportion of its immature to its mature rubber. The remaining 5,500,000 acres consists of approximately 3,360,000 acres in estates owned by Europeans and Americans; 510,000 acres in Asiatic-owned estates over 100 acres and 1,630,000 acres in native holdings under 100 acres. About 80 per cent. of all the estate rubber trees are tappable. 90 per cent. of the native rubber in Malaya and Ceylon is tappable and probably less than 50 per cent. of the native rubber elsewhere is tappable. Owing to the drastic system of tapping pursued by the natives, a portion of their untapped areas must be regarded in the same light as bark reserves of estate rubber.

The total exports of rubber from producing countries were 94,000 tons in 1910, 167,000 tons in 1915, 353,000 tons in 1920, 518,000 tons in 1925, 861,000 tons in 1929, and will be about 820,000 tons in 1930. Under normal conditions of production, exports give a good approximation to output and the stock figures now published will usually indicate any significant divergence between output and export.

The nett exports from the various producing countries during the years 1920, 1925, 1929 and 1930 are given in the following table (the 1930 figures are subject to adjustment when complete data are available):

	1920. Tons.	1925. Tons.	1929. Tons.	1930. Tons.
Malaya	181,000	210,000	455,000	443,000
Ceylon	39,000	46,000	80,000	77,000
Netherlands E. Indies	80,000	189,000	256,000	241,000
India	6,000	10,000	12,000	11,000
British N. Borneo	4,000	5,000	7,000	7,000
Sarawak	2,000	9,000	11,000	10,000
French Indo-China	3,000	6,000	9,000	7,500
Siam, etc.	1,000	4,000	5,000	4,500
Wild	37,000	39,000	26,000	19,000
Total	353,000	518,000	861,000	820,000

* By Dr. Geo Rae, D.Sc. in *The India Rubber Journal* Vol. LXXXI. No. 3, 1931.

The actual *output* of rubber for the year 1929 distributed according to the nationality of producers was approximately as follows:

	Tons.	Per cent.
British: U.K. ...	236,000 ...	27·9
British: Local ...	69,000 ...	8·1
Dutch ...	57,000 ...	6·7
Other European ...	30,000 ...	3·5
American ...	22,000 ...	2·6
Asiatic Estate ...	64,000 ...	7·6
Malayan Native ...	199,000 ...	23·4
N.E.I. Native ...	108,000 ...	12·8
Other Native ...	36,000 ...	4·3
Wild ...	26,000 ...	3·1
Total	847,000	100·0

During the last few years, resting, a better knowledge of the effects of various tapping systems, increased cultivation and conservation of surface soil have increased the yield and probably prolonged the productive life of the estate rubber tree. By far the most important development, however, has been the planting of high-yielding material by means of bud-grafting; the area under budded rubber is unknown, but brobably does not exceed 5 per cent. of the total planted area.

Owing to the low price of rubber many estates are now harvesting a restricted crop; more will restrict during 1931; but a considerable number may find it necessary to harvest a full crop. Dutch native output had declined largely owing to the disappearance of markets in the relatively inaccessible districts and to lack of hired labour at the current prices, but will again increase when the price rises. The output of Malayan native rubber during 1930, for which so far there has always been a market, has been maintained at about the 1929 level, although during the last three months it has shown a tendency to fall off; any falling off will be due to depletion of bark reserves.

The absorption of rubber by manufactures (*i.e.*, the quantities or rubber they turn into rubber goods) was 85,000 tons in 1910, 150,000 tons in 1915, 310,000 tons in 1920, 560,000 tons in 1925, 790,000 tons (adjusted figure) in 1929, and will be approximately 705,000 tons in 1930.

The absorption by manufacturers in the United States is given monthly by the Rubber Manufacturers' Association of America; similar data are not available for other countries, but their absorption can be measured approximately by their nett imports, adjusted in the case of the United Kingdom for variation in the stocks in public warehouses in London and Liverpool.

The absorption of the principal manufacturing countries for the years 1920, 1925, 1929, and 1930 (preliminary figures) are as follows:

	1920. Tons.	1925. Tons.	1929. Tons.	1930. Tons.
United States	215,000	390,000	470,000	380,000
United Kingdom	24,000	30,000	72,000	74,000
France	16,000	34,000	62,000	67,000
Germany	13,000	34,000	49,000	46,000
Italy	6,000	11,000	16,000	15,000
Russia	—	8,000	13,000	17,000
Belgium	3,000	3,000	9,000	11,000
Scandinavia	2,000	3,000	5,000	7,000
Canada	12,000	20,000	36,000	29,000
Japan	6,000	13,000	34,000	32,000
Australia	3,000	5,000	16,000	5,000
Other countries	10,000	9,000	23,000	12,000
Total	310,000	560,000	805,000	705,000

For the years **1928** and **1929** a further adjustment (estimated roughly at 15,000 tons) is necessary to allow for the obvious variation in the stock of crude rubber in the hands of manufacturers outside the United States.

The absorption of rubber has shown considerable fluctuation about its trend during the last twenty years which have probably been of greater amplitude than those shown by the real consumption of rubber. Stocks of manufactured goods, including the unused tyre mileage on automobiles, must, therefore, have shown considerably annual fluctuations during the last twenty years—a matter of considerable importance when considering stocks of crude rubber.

The data both for supplies and deliveries of crude rubber are reasonably complete and reliable, but the data giving the world stocks are very incomplete. Such data as exist, however, indicate that under normal conditions of production, stocks of crude rubber in producing countries and quantities afloat represent mainly working stocks and are not likely to show much fluctuation beyond that due to seasonal variations in output. The only important stocks in manufacturing countries are those in public warehouses in London and Liverpool and in the United States. The stocks in the hands of manufacturers in the United States have usually been between 60 and 80 per cent. of the total United States stocks. The stocks in London and Liverpool are the main reservoirs of immediately available rubber and have accordingly shown large fluctuations during the last twenty years.

The total world stocks, declared and undeclared, at any time must be considered in relation to the monthly world absorption at that time and the ratio of the former to the latter has varied from 5½ to 11 during the past two years and has shown even greater fluctuation in the past. A total world stock equivalent to about six months' absorption is usually regarded as necessary for the smooth working of the industry.