1. Introduction

When the word rubber is mentioned most people associate it with natural rubber (NR). Although this might have been appropriate prior to World War II, synthetic rubber (SR) has grown since then to assume an important position. The latter now accounts for about 60% of the world’s total consumption of elastomers (about 16.5 million tonnes in 1998) and is derived from oil, whereas the former is made from latex derived ‘naturally’ from the rubber tree *Hevea braziliensis*. This tree originates from the Amazon rain forests and can only be grown in areas of similar conditions, namely high temperature, rainfall and humidity, effectively restricting production to regions 20° degrees latitude north or south of the equator. After the rubber trees have been tapped the latex, a white milky fluid, is normally coagulated to produce 'ribbed smoked sheets' (RSS) or technically specified rubber (TSR). The production of synthetic rubber basically involves the process of polymerization with the dispersion of the monomers in water as an emulsion or in solution in an organic solvent. After this operation the resulting crumb, having been dried, is baled for despatch. A synthetic rubber plant resembles a chemical refinery.

2. The origins of rubber

The earliest references to (natural) rubber occur in the accounts of the second voyage of discovery by Christopher Columbus to the New World in 1495-96. However, it was not until the late 18th and early 19th centuries that rubber became used in some applications. At this time all rubber originated from Latin America, especially Brazil. It was not until 1876, some 37 years after Charles Goodyear, an American, patented his process of vulcanization, when Henry Wickham, an Englishman, transported some 70,000 seeds from Brazil to the Royal Botanical Gardens in Kew, UK. Some that germinated were sent to Sri Lanka and later to Singapore. Thus started the plantation industry for natural rubber in Malaysia, Indonesia and Thailand in South East Asia, which today accounts for about 70% of the world’s supply of 6.6 million tonnes.

The early development of synthetic rubber was first seen during World War I, but it was not until the cessation of natural rubber supplies from South East Asia during World War II in 1940–41, that its production began in earnest. Today over 10 million tonnes of synthetic rubber are produced.

3. Why collect rubber statistics?

The annual level of world demand for NR is currently around 6.5 million tonnes and is satisfied by the production of NR obtained from tapping the rubber tree. However the tree takes 5–7 years after planting to mature sufficiently to be tapped and its peak production period is from years 10–20 of its life. After this the latex flow declines until around years 25–30 when the tree should be replaced. Consequently, to maintain production and to meet future increased demand, a programme of new planting and replanting of rubber trees must be undertaken that allows for the inherent time lag. To plan this a time series of various historic NR statistics needs to be collected.

There is also a similar situation for SR for which the world’s annual demand is currently over 10 million tonnes. A single new SR production plant, or the expansion of an existing plant, may increase annual capacity by as much as 50,000 tonnes or so in one location but a new plant takes about 4–5 years to plan and build. There is thus a requirement from SR producing companies for accurate statistics on the various aspects of SR for their planning purposes. It should also be noted
that, since perhaps 50% of all rubber is consumed by the tyre industry, it is crucial that demand for both NR and SR is met to satisfactorily maintain the world’s road transport system.

4. Rubber statistics

The earliest recorded data for natural rubber is to be found in a publication entitled ‘India Rubber Journal’ (London, UK) in 1823, when it was reported that production of natural rubber in Brazil was 31 tons. For the next 50–60 years little or no recording in depth of natural rubber statistics was undertaken. The only records of production and exports of (natural) rubber are to be found in the aforementioned publication, which basically provided statistics on the production of rubber for Brazil. The publication India Rubber World in the USA provided a degree of information on US imports of natural rubber, but like the one in the UK also kept track of prices from about 1860, providing a comparison with UK prices, which can be traced back to 1825. However, with the beginnings of the newly developed plantation industry for rubber in South East Asia in 1880–1900, the recording of data covering production, exports, area under natural rubber, stocks and prices began in earnest. Although data on the production (and exports) of rubber were incomplete prior to 1880, after that time the British and Dutch governments, through their colonies in Asia and Africa, began to keep records. Consequently, even before the turn of the 20th century data exists mainly on production, exports and imports of rubber for a large number of countries.

After 1900 records were kept in great detail and the gathering of data up to 1944, when the International Rubber Study Group was formed, was propelled forward by various stabilization schemes to try to iron out the violent fluctuations in the price of natural rubber. These schemes in the inter-war years – the Stevenson Scheme of 1922–28 and the International Rubber Regulation Agreement 1934–44 – required extensive monthly data records of current levels of production, exports and prices, as well as historic records from earlier time periods. Thus the major data series for natural rubber can be traced back to 1900 providing an annual time series of nearly 100 years.

In the case of synthetic rubber, its history with regard to statistics is well documented, as governments during World War II controlled its production, and consequently detailed records exist. In World War I only some 2,350 tonnes of synthetic rubber were produced and then production was abandoned, because of the low price of natural rubber, until World War II.

Since 1944, the International Rubber Study Group, an inter-governmental organization, has been charged with collecting, collating and publishing statistics (through its monthly Rubber Statistical Bulletin) on the production, exports, imports, stocks, end-uses, consumption and prices of natural and synthetic rubber on a monthly basis. The Group maintains an extensive database on many aspects of the world rubber economy and associated variables, with many of its time series dating back to 1955 in computer readable format on a monthly basis, and annual series through its various publications, dating back to 1822.

**FRENCH RESUME**

Depuis 1944, le Groupe International d’Etudes du Caoutchouc a rassemblé les statistiques pour le caoutchouc naturel (CN) et le caoutchouc synthétique (CS). Auparavant, lorsqu’il n’existait que le CN, les Gouvernements, pour arriver à stabiliser les prix du caoutchouc, basaient leurs chiffres dans les périodes entre guerres. On peut trouver les premiers chiffres pour le 19ème siècle dans des publications spécialisées dans le caoutchouc jusque dans les années 1880. Après l’industrie caoutchoutière dans les colonies anglaises et hollandaises en Asie du Sud-Est, commença à se développer, en utilisant des graines d’*Hevea brasiliensis* du Brésil, ce qui encouragea la collecte des statistiques.