History: Past, Present And Future Of RUBBER

The story of the growth of the world's rubber industry is told here in an extract from a speech to Penang Rotary Club by Mr. Heah Joo Seang.

THE history of rubber embraces one long series of episodes brimming with romance, mingled with tragedy, interspersed with booms and slumps alternating in rapid succession.

Despite its rather chequered career rubber has come to be regarded as a necessity rather than a luxury—a boon to mankind, and its manifold uses, since the introduction of the automobile and latterly of the aeroplane, have completely revolutionised the monotony of our daily lives, and have opened up the vision of a new era known as the Rubber Age.

The commodity has been the subject of a few international diplomatic duels and world manoeuvres and in times of hostilities is considered an essential material to provide the sinews of war.

For rubber the early explorers sailed unchartered seas and the pioneers braved the horrors of the forests.

It was supposed to have been discovered by Christopher Columbus when he touched at the Island of Hispaniola (Haiti), sometime between 1493 and 1496 during his second voyage when he discovered that one of the favourite pastimes of the natives was a game played with balls "made of the Gum of a Tree" which "tho' heavy would fly and bound better than those fill'd with Wind in Spain."

THERE was a revival of European interest in rubber at the beginning of the eighteenth century when in the year 1745 a learned and adventurous French scholar, Charles Marie de la Condamine presented at the French Academy a scientific report of his explorations in South America embodying vivid descriptions of the method of collecting the Hevea Latex in the Peruvian Province of Esmeraldas and at Para (Brazil).

It was the work of a trained mind and a seeing eye and it helped to attract more serious attention in the usefulness of rubber as a commodity which was destined to play such an important part in the progress of modern civilization.

This gave rise to research into the discovery of a suitable solvent for solid caoutchouc (as rubber was officially called by the French and colloquially it became peau de nigre—nigger's skin).

At first turpentine was used, then ether, and afterwards it was found that rectified petroleum dissolved rubber. Frederick the Great was known to have worn the first pair of riding boots made from ether-caoutchouc solution "and probably also the last for ether was too expensive a solvent for caoutchouc," so says Caoutchouc and Gutta Percha, the eighteenth century pamphlet issued by the society for Promoting Christian Knowledge.

Up to this time rubber was of no commercial importance and continued to reach Europe as a novelty. To para, the first Portuguese settlement in Brazil, Joseph the King sent several pairs of royal boots to be waterproofed. These were returned together with the gift of a coat made of fabric covered with the new substance.

The first mention of its commercial utilization dated from the year 1770 when the scientist, Dr. Joseph Priestley, called attention to a substance excellently adapted to the purpose of wiping from paper the marks of a black lead pencil. It must, therefore, be of singular use to those who practice drawing. It is sold by Mr. Nairne, mathematical instrument maker, opposite the Royal Exchange. He sells a cubicle piece of about half an inch for three shillings; he says it will last several years.

It was because of this use coupled with the fact that it hailed from the West Indies that it was originally known as "India Rubber" and subsequently the commodity acquired the more abbreviated form of "rubber" as it is called throughout the English speaking world.

IN the Western Hemisphere the two and one quarter million square miles drained by the Amazon River constituted the principal source of supply of wild rubber. The basin included Brazil, Bolivia, Colombia, Peru, Ecuador, Venezuela. The Amazon river with its tributaries made rubber production possible as the fastnesses of the jungles with their luxuriant growth made penetration by foot well nigh impossible. The Amazon was navigable for ten thousand miles.

The native was induced, seduced, or coerced by slave hunters backed by large organizations to venture on the hazardous task of latex collection. His canoe was stocked with provisions to last for months and equipped with paraphernalia to enable him to engage in his precarious pursuit. At the most there are not more than four or five trees to an acre.

By far most of the rubber came from the Hevea Braziliensis, the Malayan prototype, which grows to a height of from eighty to one hundred feet and a girth of a dozen feet in circumference.

THE formal history of rubber in Asia begins in Penang which holds second place to Singapore as the world's biggest shipping port for rubber.

In 1790 it was here that James Howison, Surgeon in the service of the East India Company under Captain Light, first discovered, inspected and experimented with the milk from a vine and was delighted to find something possessing "all the properties of the American Caout-Chouc." What the vine was it is hard to determine as there is no record. Writing in 1798 Howison conceived the original idea of the possibility of cultivating plantations of his vine discovery and of transferring the American trees to India.

In 1810 Dr. William Roxburgh eminent botanist and foremost scientific classifier of rubber plants inspected a specimen from Sumatra which he thought was really comparable to "caout-chouc" from America.

Indigenous to the Indian Province of Assam, Ficus Elastica (Rambong) was distributed from there through Burma, Penang, Sumatra, Java and the Sunda Islands.

The earliest attempts to cultivate rubber in the East made use of Ficus Elastica trees and a plantation laid out in Java in 1864 is still in existence.

However the enthusiasm of the early optimists was dampened when it was realised that the product only fetched a price of five to eight gold cents as against eighteen to thirty commanded by para rubber, the quality evidently being much inferior. The exports therefore were of not much consequence. In 1892, 1095 tons came out from India and Burma and in 1897, 1288 tons were cleared through Singapore

EVEN at this time the world's faith in para rubber, Hevea Braziliansis, the great rubber producing tree of South America remained unshaken.

There was a persistent clamour for supplies produced on a commercial basis within the British Empire and the rare foresight of the British Government has made the rubber industry in Malaya one of supreme importance in world commerce it is to-day. To little known James Collins, curator of the museum of the Pharmaceutical Society belongs the honour for his strong belief in the possibility of the acclimatisation of rubber trees in Britain's Eastern possessions and for his claim that the Hevea was superior to all others.

His views so influenced the British Government that the publication of his report was ordered in 1872 and this may be said to be the beginning of the project.

As early as the nineteenth century Thomas Hancock, a great inventor for the rubber industry advocated the cultivation of rubber on plantations and it is recorded that his collaborator, Sir William Jackson Hooker, Director of the Royal Botanical Gardens at Kew pledged every assistance in this direction. Sir William's son and successor, Sir Joseph Dalton Hooker, friend of Darwin and one of those who induced him to publish his views on the origin of species fulfilled that promise twenty years after.

After the failure of several experiments a few years previously to plant Hevea trees at Calcutta, India, from seeds obtained by James Collins due to inadaptability of climatic conditions, the India Office, on the recommendation of Sir Joseph Becker in 1876 commissioned Henry A. Wickham, a planter at Santarem on the Amazon to obtain seeds and bring them to the Kew Gardens for germination.

After much difficulty he succeeded in accomplishing his mission by transporting 70,000 seeds in a chartered boat from Tapajos, Brazil through the Port of Para at the mouth of the Amazon to the Kew Gardens where only about 2,800 germinated.

Because of past experience with India's unsuitable climate it was arranged to send the seedlings to Ceylon to be cultivated and propagated for distribution to Burma and other hot and moist districts of the Indian Empire.

IN August, 1876 thirty-eight cases containing about two thousand seeds were despatched to Ceylon where conditions proved so favourable that the seeds thrived well to be healthy and vigorous trees. Ceylon made its first distribution in 1877 by sending twenty-two trees to Singapore.

Henry N. Ridley, director of the Singapore Botanic Gardens recorded as his opinion that "It was from these twenty-two plants in the Singapore Botanic Gardens and Perak that three quarters of the cultivated plants of Hevea Braziliansis have sprung."

The Singapore trees bore seeds in 1881 and these were distributed throughout Malaya and North Borneo. In 1883 Ceylon sent twenty-eight plants to India and a few to Burma. In this way the industry spread to the Dutch East Indies, French Indo-China and latterly to Thailand (Siam).

So from that memorable day commenced the transfer of the pro-eminence of Hevea Braziliensis in the rubber world from the Western Hemisphere to the Eastern and so witnessed the beginning of the decline of the position of wild rubber in its ancestral home in proportion to and with the advent of the rapid progress made by the cultivated product in its land of adoption.

FOR various reasons already explained the production of wild rubber rapidly declined until in 1922 it represented only 7 per cent. of the total world production. In 1934 the world hit its rubber-producing record. Yet the contribution of Brazil, Africa and other wild rubber producing countries was barely 1½ per cent.

Even in the boom years of 1925-1926 the output seemed to be stationary. Wild rubber has therefore long ceased to be a menace in the world's rubber market. Far from enthusiastic was the reception which was given to the strange tree in the East. Most of the planters in Malaya and Ceylon ridiculed the idea of replacing their coffee industry with rubber and for a long time rubber trees were used only as shade trees for their crop. Experiments were carried on, blunders were numerous, and through failure after failure at last a system of cultivation, tapping and manufacture was evolved as we know it today.

The appearance of the coffee blight and poor prices for the product served to increase the willingness of planters to experiment with rubber. It was only in 1895 that the brothers R.C.M. and D.C.F. Kindersley started the first practical estate on a commercial scale in Malaya.

TO Henry N. Ridley, director of the Singapore Botanic Gardens we are indebted for his discovery of the first successful system of conservative tapping which is still followed up to the present day. Great credit is also due to John Parkin, Technical Adviser to Ceylon Gardens for developing the acid process of coagulation. It was not until 1903 that the first rubber company was organised in London.

In 1905 the price was forced up to between $1.25 to $1.50 (gold) a pound in the United States which was a handsome return for rubber growers. This had the salutary effect of encouraging cultivators to plant up frantically and to scramble for land to be alienated for rubber culture. By 1908 a total acreage of 625,000 was planted with rubber in the Middle East with a production of 1,402 tons from Malaya 390 from Ceylon and 4 from British Borneo or about 2.7 per cent. of world production. In 1909 it became increasingly apparent that the increased production of the automobile would create an unprecedented demand for rubber and the price rocketed to $3.06 (gold) per pound and averaged over $2.09 for the ensuing year.

The spectacular price appreciation had stimulated further planting and by 1910 the total planted acreage in the Middle East had exceeded the one million mark with 541,000 in Malaya, 258,000 in Ceylon, 50,000 in India and Burma, 42,000 in British Borneo, 9,000 in Indo-China, 240,000 in Dutch East Indies and one acre in Siam (Thailand) making a total of 1,140,000 acres.

The wildest conditions prevailed, and mad gambling was indulged in on the Stock Exchange, and this elicited from Sir Frank Swettenham, the following succinct comment:

"A great many companies have been floated in which I would have thought no one outside a lunatic asylum would have invested a shilling."

IN his frantic efforts to combat the effects of restriction Harvey S. Firestone after failing to establish plantations in the Philippines due to Land law restrictions struck on Liberia in which he was reported to have sunk eight million United States dollars in developing only 110,000 out of the one million acres placed at his disposal. Climatic and labour conditions are reported to be adverse to the successful prosecution of the venture.

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HISTORY OF RUBBER

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Henry Ford, the motor baron turned his attention to Brazil where he applied for three million acres of land on the bank of the Tapajos river and about 150 miles from its junction with the Amazon Santarom.

This was the locality where Sir Henry Wickham selected his rubber seeds from which the Eastern plantations owe their beginning.

It was not until May 1st. 1928 that his colossal scheme was announced and he made the first move in developing the area in July 1928. His early hopes of converting the unprofitable land into an El Dorado was frustrated, due to severe rains and extreme drought over long periods, conditions which are not congenial to rubber culture.

IN February 1829, the Prime Minister announced that as a result of the failure of restriction to sustain prices at the desired level the committee of Civil Enquiry was to investigate into the operation and effects of rubber restriction.

The market interpreted this as likely to lead to the repeal of the Stevenson Scheme and the New York price declined sharply from 37 cents to 25 cents per pound.

On April 4 of the same year the Prime Minister, Mr. Stanley Baldwin (afterwards Lord Baldwin) announced "The Government has decided that all restrictions on the export of rubber from British Malaya and Ceylon will be removed on November 1, 1928" and that economic law must take its course. Thus the Stevenson Scheme came to an inglorious end.

As production continued to outstrip consumption prices declined to 16 cents a pound in December 1929 in the United States, to nine cents at the end of 1930 and 4¼ cents in August 1931 The downward movement was further aggravated by the trade and industrial depression of unparalleled severity until the price of 2½ cents was recorded in 1932. Although the low prices preclude many estates from producing at a profit a system was devised whereby capital and labour worked hand in hand to their mutual advantage on a profit sharing basis, fifty-fifty, or "bagi dua," the tapper and employer each receiving an equal share of the proceeds of sale.

Most people would have thought that the poor prices would have acted as an automatic check to unlimited production. Not so with rubber.

To find the wherewithals to support body and soul together the native estate owner in Malaya and Dutch East Indies tap all out so as to have enough funds to maintain their normal standard of living. This principle is contrary to all laws of economics and was dictated by dire straits.

IT is a pity that there was not in existence in Malaya any agricultural bank which would fill a long-felt want and have saved the industry from utter ruin and unnecessary loss.

Something on the lines of Farmers Co-operative Bank could be organised for the future so as to render relief and mutual assistance in time of need and prevent a repetition of the deplorable conditions associated with the depression prevailing in 1932 when planters were eking out a miserable existence with the low prices that resulted from the removal of restriction the problem of reducing costs again became paramount.

A renewal interest in methods for attaining higher yields was evinced by plantation companies and the years 1928-1932 witnessed a large importation into Malaya from Java and Sumatra of bud stock, and selected seeds. The scientific care of estates now loomed large in the planting world.

The axe was freely applied and drastic economies were effected in all directions.

After protracted negotiations with the Dutch authorities, the International Rubber Regulation Agreement was brought in force effective from May 7, 1934, comprising all rubber producing countries in the East for an initial period of five years.

Malaya has profited by past experience and the mistake of the past in introducing restriction only in British possessions was not to be repeated. Furthermore, the present scheme as at present constituted is more watertight and is not likely to give cause to any complaint on the part of our best customer the United States.

THE weakest point in the Stevenson Scheme was in its inelasticity so that speculators could take undue advantage of any loophole to indulge in manipulations of a detrimental nature which at least can only redound to the discomfiture of the industry itself.

The main aim of the present scheme seems to be a stabilisation of prices at a fair rate. Abnormally high prices preclude the development of new uses and places it beyond the reach of utility services such as road surfacing which could absorb all surplus rubber and help in balancing supply to demand in the lean times. The administration of the present scheme seems to be entrusted in capable hands and so far the interests of both the consumer and producer has been weighed with care and precision, so as to reflect the utmost credit on the committee.

The basic quota was fixed as follows:

	1934	1940
Malaya	504,000	648,000
Netherlands India	352,000	645,000
Ceylon	77,500	109,000
India	6,850	17,750
Burma	5,150	13,750
State of North Borneo	12,000	21,000
Sarawak	24,000	44,000
Thailand	15,000	55,700
Total Tons	996,500	1,554,700

The percentage of release has averaged as follows: In respect of 1934, 87 1/7%: 1935, 67½%; 1936, 62½%: 1937, 83¾%: 1938, 55%; 1939, 58¾%; 1940, 83¾%. For the first and second quarters of 1941 it has been fixed at 100%.

SINCE the war started the market, however, has been particularly sensitive to extraneous influences. The price in normal course is regulated by the economic laws of supply and demand. Besides factors inherent in the rubber industry itself, prices can easily be affected by political disturbances, strikes, shortage of transports, sinkings by international financial manoeuvres or possible interference with shipping facilities from the Far East.

I quote below an extract from a recent speech made by Sir John Hay which may be of interest:

"Rubber exports even on the basis of normal consumption are a most valuable source of exchange and at the present abnormal rate of exports their value far outstrips that of any commodity other than gold exported either from this country (England) or any other part of the Empire. They are thus a highly important source of our vital dollar exchange."

OPINION is divided as to a prediction of the trend of the market in the event of cessation of hostilities. If we are to trust to past history I have presentiment that the post-war rubber prices will prove no exception to the rule. History may repeat itself and the present period of remunerative prices is bound to be followed by a spell pregnant with hesitancy and uncertainty accompanied by a severe decline in value as a consequence of the abnormal times.

There are now over one million tons of stocks in the world which will be frozen up in cold storage until such time as the incubation period should set in. In an anxiety to build up adequate emergency reserve stocks, this quantity may be further substantially augmented.

The remedy may be found in the industry itself. Most of Eastern Estates were planted as far back as 1910 during the first boom. They have now passed their prime and are on the decline as producers. Intensive replanting has been assiduously carried on by large vested interests on scientific lines whereas smallholders are still basking in the sunshine of prosperity reaping the harvest with complacency.

Many scientific minds are still wondering why rubber trees despite the ruthless torture they have undergone are still alive and have baffled the Restriction officers by being able to exhaust their quarterly coupon allowance calculated to last them for three full months in less than one third of the time assigned to them.

It is impossible to forecast the future with any degree of certainty. However, we may be guided by past behaviours of the market.

Rubber has moved in cycles of five years each with clockwork regularity. According to its horoscope, there was a boom in 1915 followed by a slump in 1920, boom in 1925, slump in 1935. boom in 1940 and basing on past records, can we confidently expect a slump in 1945?