

JOHN DRABBLE



RUBBER
IN MALAYA
1876-1922
THE GENESIS OF
THE INDUSTRY

The modern world owes much to the development of rubber cultivation in South and South-East Asia, and the story of the transfer of rubber seeds from South America via London to the East, the initial scepticism among planters, the experiments of H.N. Ridley, and the price booms and planting 'mania' of the early twentieth century, followed by years of depression, has acquired an aura of romance.

However, from an historical viewpoint there has been a tendency in previous writings to emphasize the peaks and troughs of development at the expense of continuity. This study attempts to remedy the imbalance by bringing together the factors of capital and labour, private enterprise, government policy and technical research, etc., and showing their continuous interaction during the development of Malaya's rubber industry up to 1922, by which time all the main economic characteristics of the industry, which have typified it subsequently, had become apparent.

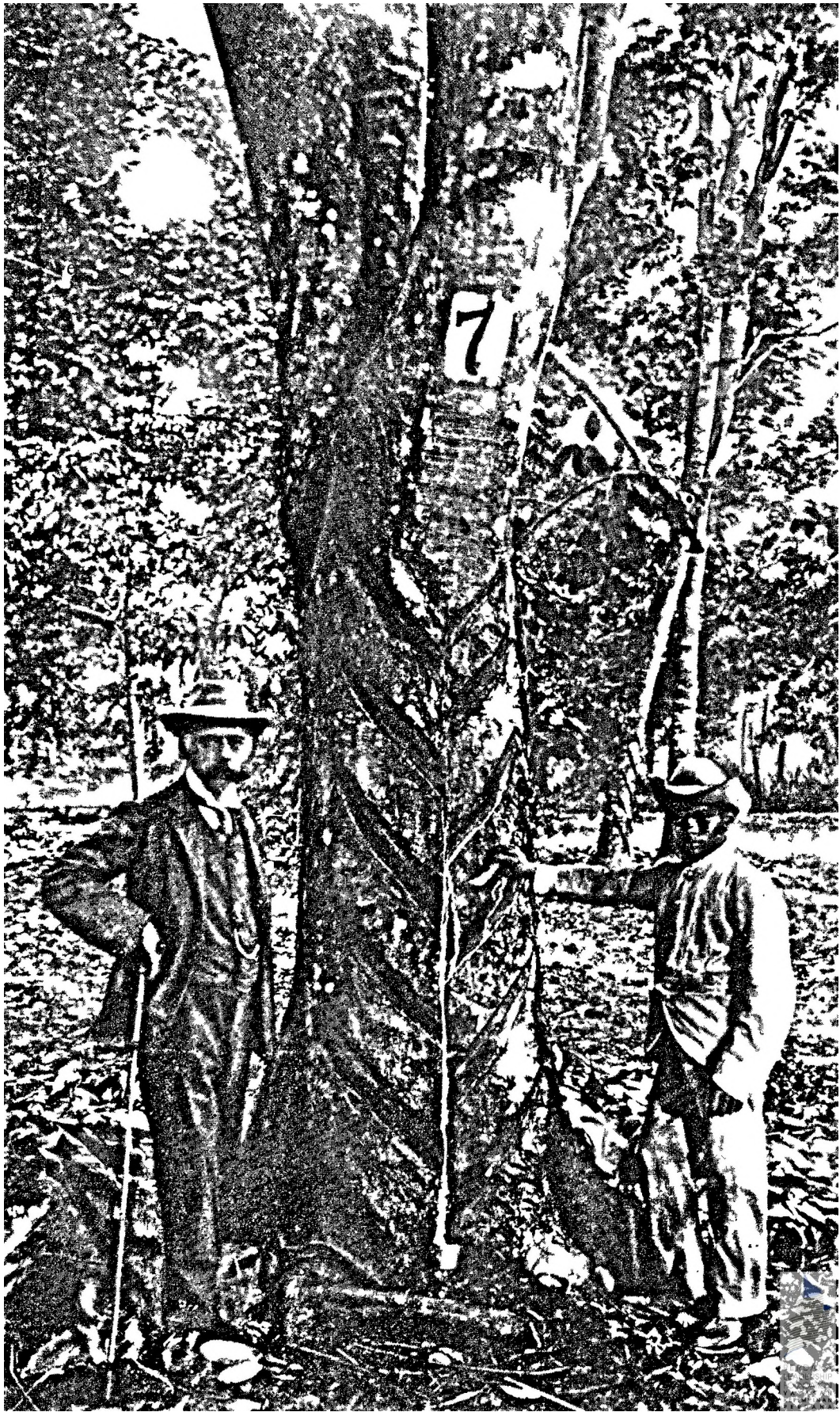
While the central theme of the study is the growth of the industry in Malaya, some account is also taken of its development in other rubber-producing countries—in particular, Ceylon and the former Netherlands East Indies—together with world channels of distribution; the development of rubber-manufacturing industries in consumer countries; and international political-economic conditions.

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Jacket photograph reproduced by kind permission of the Rubber Research Institute of Malaya

H.N. Ridley, with assistant, and rubber tree in the Singapore Botanic Gardens,
c. 1905. (Reproduced from the *Gardens Bulletin Straits Settlements*, Vol. 1.

p. 262.)



RUBBER IN MALAYA

1876-1922

The Genesis of the Industry

J. H. DRABBLE



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To my Wife

PREFACE

RUBBER is one of the major raw materials upon which the development of modern industries has been based, and the establishment of an extensive rubber-growing industry in South and South-East Asia to serve this development has with the passage of time acquired something of an aura of romance — as is often the case with notable enterprises. The collection and transfer (some say smuggling) of rubber seeds from South America via London to the East, the initial scepticism among planters, H. N. Ridley's experiments, the price booms and subsequent planting 'mania' of the early twentieth century, have been recounted in many general contexts. More analytical studies by economists (P. T. Bauer, J. W. F. Rowe, C. R. Whittlesey) have concentrated on the restriction schemes of the 1920s and 1930s. J. N. Parmer has examined the estate labour force in Malaya up to 1941, K. S. Sandhu the subject of Indian immigration 1786-1957, and J. C. Jackson devotes a section to the industry in his geographical study of commercial agriculture in Malaya 1786-1921.¹ Without in any way detracting from these works, each with its own particular approach, from the historical viewpoint there has been a tendency to emphasize the peaks and troughs of development at the expense of the central element of continuity.

It is the aim of the present study, using primary sources wherever possible, to trace the establishment of rubber cultivation in Malaya in the period up to 1922, bringing together the factors of capital, labour, entrepreneurial activity, Government policy, technical research etc., in a combination of description and such analysis as the sources will bear. Rather than abstract each factor in turn for examination, an attempt will be made to show their continuous interaction.² As befits an historical survey, the study rests upon a strictly chronological treatment of events. This is

¹The various works mentioned are listed in the bibliography at the end of this study.

²This methodology is modified, principally for the treatment of the technical side of the industry, which occupies much of the first chapter and the final section of each subsequent chapter, and which is related to the commercial aspects through the economic implications of research. A glossary of the main commercial and technical terms is provided. Relevant statistics appear throughout the text, and for ease of reference are gathered into composite tables, together with a discussion of the problems raised by statistical material, at the end of the volume.

necessary if any real impression of development through time is to be conveyed (i.e. the 'dynamics' of the industry); moreover, considerable narrative work is required to lay the basis for subsequent analysis. Such an arrangement may not altogether suit readers wishing to follow through any one aspect, e.g. capital, nor those preferring studies which adopt as a prior guideline some major hypothesis in economic theory. For the former, it is hoped that the index will be of assistance. On the latter point, comment will be made at various stages in the text upon particular concepts which are relevant, e.g. smallholder response to falling prices, and in the Conclusion consideration will be given to the significance of the industry for the economic development of Malaya.

The study closes at 1 November 1922, the day upon which the Stevenson restriction scheme came into operation. The choice of this date was governed partly by the availability of official documents during the period when the bulk of my research was carried out. But just as importantly it may be said that 1922 marked the close of the initial phase of the industry's development; one in which the capital foundation was established and in which all the main economic characteristics, which have typified it subsequently, became evident. Whilst it would undoubtedly have been profitable to have extended the study to cover the inter-war official restriction schemes, such a project would have been over-large. I hope to undertake this work in due course.

It would be gratifying to be able to say that the estate and smallholding sectors of the industry are examined to the same extent and depth, but unfortunately the sources relating to the latter are fragmentary. Smallholders at this time (and indeed the larger Asian owners) were neither as organized nor as vocal as the estate interests, thus it has only been possible to give periodic insights at times of intense speculative activity (e.g. 1909-10) and market depression (e.g. 1920-22), when these producers came within the official purview.

Whilst the main aim is to show the growth of the industry within Malaya,¹ some account has also to be taken of other rubber-producing countries (notably Ceylon and the Netherlands East Indies), the world channels of distribution, the development of the rubber-manufacturing industries in consuming countries, and world political/economic conditions. Therefore the range of the narrative becomes increasingly international from the first world war onwards.

My personal interest in the rubber industry originated from a period of some four years employment in one of the principal British rubber estate agency groups in Malaya. Upon returning to academic life I had the good fortune to undertake postgraduate studies at the School of Oriental and African Studies, London University, which provided financial support

¹i.e. the Straits Settlements, Federated, and Unfederated Malay States, which will also occasionally be referred to as the Malay Peninsula.

during the research leading to the presentation of my Ph.D. thesis (1968), of which the present work is a revised version. A six-month period of research in Malaya during 1966-7 was made possible by the London-Cornell Project for East and South-East Asian Studies, financed jointly by the Carnegie Corporation of New York and the Nuffield Foundation. I am much indebted to Professor C. D. Cowan, at whose suggestion I first investigated the scope for research on the rubber industry, and to Dr. J. A. M. Caldwell who acted as my supervisor. I have also benefited from comments by Dr. J. C. Jackson, Dr. P. J. Drake and Mr. Khoo Kay Kim.

This study has gained immeasurably from the generous access to commercial records granted by the Rubber Growers Association Incorporated, London; Messrs. Guthrie and Co. Ltd., London and Singapore; the Guthrie Corporation Ltd., London; Messrs Edward Boustead Ltd., London; Messrs. Harrisons and Crosfield Ltd., London; Messrs. C. F. Gomes and Co., Malacca; the States of Malaya Chamber of Commerce, Penang. Mr. H. B. Roper-Caldbeck of Edward Boustead and Co. Ltd. very kindly made available the private letter books and other documents of Mr. Jasper B. Young and Mr. Arthur Young, partners in this firm in the late nineteenth and early twentieth century. The Director of the Royal Botanic Gardens, Kew, London, sanctioned the use of original correspondence including the personal papers of H. N. Ridley, Esq. (copyright of Her Majesty's Stationery Office). The Director of the Singapore Botanical Gardens permitted me to consult the Gardens archives. For Government records, I enjoyed the facilities of the Public Record Office, London, and the National Archives of Malaysia, Kuala Lumpur. I am also grateful to the Secretary to the Government of Selangor, Tuan Haji Megat Mahmud bin Haji Megat Ismail for permission to visit and examine the records of several District Offices in that State. Professor K. G. Tregonning, late of the University of Singapore, allowed me to consult unpublished B.A. Honours Exercises of the Department of History. The figures in Appendix XI are reproduced from K. S. Sandhu, *Indians in Malaya: Immigration and Settlement 1786-1957* (Cambridge University Press, 1969), and those in Appendix XII from J. N. Parmer, *Colonial Labour Policy and Administration: A History of Labour in the Rubber Plantation Industry in Malaya, C. 1910-1941* (J. J. Augustin, 1960) by kind permission of the respective authors and publishers.

The excellent libraries maintained by the British Museum; the Royal Commonwealth Society, London; the Malaysia-Singapore Commercial Association (formerly the British Association of Malaysia), London; the National Library of Singapore and the Rubber Research Institute of Malaya, Kuala Lumpur, provided me with much of the published source material. I am also most grateful to the Information and Publications Section of the Rubber Research Institute for assistance with the reproduction of photographs for this volume.

Much valuable help at all stages of my work was given unstintingly by individuals in the rubber industry, as well as academic colleagues and others, in addition to those already mentioned. I have tried to acknowledge their contributions in the course of the text. I should also mention the unfailing support from my wife, who aided in the transcription of the statistical material. To all these helpers I owe a great deal, but for the form and content of this study I alone am responsible.

University of Malaya,
Kuala Lumpur,
August 1971

J. H. DRABBLE

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Frontispiece H. N. Ridley and rubber tree in the Singapore Botanic Gardens, c. 1905

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 - VI Workers' quarters and hospital on estates in Perak
 - VII New-clearings and factory, Lanadron estate, Johore
 - VIII New-clearings and bungalow, Third Mile estate, Negri Sembilan

ABBREVIATIONS

A.R.	Annual Report
A.R. and A/Cs	Annual Report and Accounts
Agr. Bull. S. and F.M.S	Agricultural Bulletin Straits and F.M.S.
B. of T.	Board of Trade
C.O.	Colonial Office
Dir. Agr. F.M.S.	Director of Agriculture F.M.S.
D.M.B.	Directors' Minute Book
D.O.	District Office(r)
E.M.R.	Entries in Mukim Register
E.P.D.	Excess Profits Duty
F.O.	Foreign Office
F.M.S.	Federated Malay States
G.G.	Government Gazette
Gov.	Governor Straits Settlements
H.Com.	High Commissioner F.M.S.
H.C.O.F.	High Commissioner's Office file
JMBRAS	Journal Malayan (or Malaysian) Branch Royal Asiatic Society
K.G.C.	Kew Gardens Correspondence
M. of C.	Memorandum of Charge
M. of T.	Memorandum of Transfer
M.T and R.J.	Malayan Tin and Rubber Journal
N.E.I.	Netherlands East Indies
N.S.S.F.	Negri Sembilan Secretariat file
P.A.M.	Planters Association of Malaya
Proc. Fed. Co.	Proceedings of the Federal Council F.M.S.
Proc. Leg. Co.	Proceedings of the Legislative Council Straits Settlements
R.G.A.	Rubber Growers Association (London)
----- Bull.	„ Bulletin
----- C.M.	„ „ „ Council Minutes

	ABBREVIATIONS	xviii
-----M.R.F.	Rubber Growers Association Malaya Research Fund	
-----M.R.B..	Rubber Growers Association Malaya Research Branch	
R.P.A.M.	Rubber Producers Association of Malaya	
R.T.A.	Rubber Trade Association (London)	
S.S.F.	Selangor Secretariat file Straits Settlements	

Currency

Monetary references in dollars are in Straits currency at \$1 = 2/4d sterling, unless otherwise indicated.



Map of Malaya circa 1922

I

A NEW RAW MATERIAL

ONE of the major consequences of the progressive exploration of the world by the peoples of Western Europe from the fifteenth and sixteenth centuries was the discovery of many new commodities which could be introduced into the growing network of trade. The natural resources of numerous areas came under intensive exploitation and this did not consist merely of using them *in situ*. 'As commercial connections between the various continents were formed, there began an interchange of domestic animals, fruit trees, and vegetable seeds that has continued to the present day....'¹ The practice of transference, conditions of soil and climate permitting, was thus early established. Moreover, as the West began to revolutionize its productive techniques in an ever-widening variety of directions from the second half of the eighteenth century, there arose a concomittant demand from industry for raw materials. Products such as cotton began to be cultivated on an estate basis to ensure adequacy and regularity of supplies.

However, it was not always possible to utilize a new commodity immediately following the initial discovery. In order to realise a commercial potential, it was first necessary to develop the appropriate manufacturing technology and for a range of economic uses to emerge. In the case of rubber this was a lengthy process. Thus the earliest European visitors to Central and South America in the late fifteenth century found the Indians there already able to extract latex from rubber-yielding trees, and to use it for waterproofing garments etc.² But rubber in an untreated form was unable to retain its natural property of elasticity³ under changes of temperature, and although samples were sent to Europe in the seventeenth and eighteenth centuries, the earliest investigators could not find a satisfactory solution. Despite these drawbacks rubber was used by manufacturers for certain purposes such as inserting into garters, mittens and waistbands of clothing. Thomas Hancock had one such factory in London and in 1820 devised a 'masticator' for dealing with the scrap rubber.⁴ This was followed by a decisive advance by Charles Goodyear in America,

¹S. B. Clough and C. W. Cole, *Economic History of Europe* (Boston, 1952), p. 123.

²W. H. Chaloner, *People and Industries* (London, 1963), p.131.

³See Glossary below, p.232.

⁴Chaloner, op.cit. p.132. See 'mastication' in Glossary below, p.232.

who between 1839 and 1844 discovered and perfected the process of vulcanization, which prevented rubber from being affected by changes in temperature.¹ In England, Hancock learnt of this invention and worked on it himself. In 1851 Goodyear listed over 600 articles which he felt could be made out of rubber,² and by the mid-nineteenth century a rubber-manufacturing industry was beginning to emerge in Britain and America.

By this time, botanical observations in many tropical areas of the world were revealing an increasing number of plants and trees which yielded a liquid with rubber-like properties, some of these in South and South-East Asia. But the main source of raw rubber was South America, in particular Brazil. The trees were not cultivated, but were tapped wherever they occurred in the jungle. The method of extracting latex was the traditional Indian one of making numerous incisions in the bark with an axe. This technique, as was to become clear in due course, was wasteful since it destroyed relatively quickly the ability of the tree to yield latex and necessitated ever-longer journeys to seek fresh trees. As early as 1857, Thomas Hancock suggested the possibility of cultivating the best types in the East and West Indies, not only as a profitable plantation venture but also as insurance against interruption of the current sources of supply.³ However, he did not appear to envisage the actual transfer of plants between these areas. During the 1860s the consumption of rubber increased very noticeably, and new uses were discovered such as solid tyres for wheeled vehicles. In 1870 the United Kingdom imported 152,118 hundredweights (approximately 7,600 tons) of rubber from all sources, valued at nearly £1,600,000,⁴ a substantial proportion of which was re-exported to America.

The main initiative in the transfer of strains of rubber from South America to the East came from the India Office in London. A member of the staff, Sir Clements Markham, is generally credited with the original concept, having previously been concerned with a similar project for introducing the *cinchona* tree to India in the 1860s. In later years he wrote that, 'After visiting the forests in South America and reflecting on the great demand, I came to the conclusion that the best caoutchouc yielding trees should be cultivated and ... introduced into our Eastern possessions'.⁵ Since little formal knowledge existed about the varieties of rubber-yielding trees, their preferred habitats, and the methods of extracting and coagulating the latex, James Collins, Curator of the Pharmaceutical Society Museum, was commissioned to collect information on these points. His

¹G. D. Babcock, *History of the United States Rubber Company* (Indiana, 1966), pp. 10-13. See 'vulcanization' in Glossary p.232 below.

²Babcock, op.cit. p.18, n.18.

³T. Hancock, *Personal Narrative of the Origin and Process of the Caoutchouc or India Rubber Manufacture in England* (London, 1857), p.76-7.

⁴W. Woodruff, *The Rise of the British Rubber Industry During the Nineteenth Century* (Liverpool, 1958), Appendix IV, p.202.

⁵Letter dated 17 October 1907, printed in *R.G.A. Bulletin*, Vol.9 (1927), p.674. 'Caoutchouc' derived from the South American Indian term for rubber.

report¹ was published in 1872 and a copy sent by the India Office to Dr. (later Sir) Joseph Hooker, Director of the Royal Botanic Gardens at Kew, near London. Hooker replied that 'It appears ... very desirable to introduce into India the *Hevea* yielding the Para rubber which is stated to be the best commercial kind'.² In June 1873 a shipment of 2,000 *Hevea* seeds procured by a Mr. Farris in Brazil arrived in England and were sent to Kew for germination. Twelve plants were raised from these, of which six were despatched to the Botanic Gardens at Calcutta in the same year, from where cuttings were later sent up to Sikkim, but the experiment was a failure largely due to climatic conditions.³

Shortly after the Farris consignment, Mr. Henry Wickham was asked to obtain further supplies of seed, but because of the seasonal nature of the seedfall and some bargaining over the price to be paid, it was early in 1876 before he was able to make a collecting expedition. In addition, the India Office had also decided to send Mr. Robert Cross to South America for the same purpose. Kew Gardens were advised that in view of the failure at Calcutta, the Government of India desired rubber plants to be sent to the Botanic Gardens at Peradeniya, Ceylon, which was to serve as a distribution centre for the west coast of India, Burma and Assam.⁴ Wickham gathered 70,000 seeds of the *Hevea Brasiliensis* variety,⁵ out of which Kew Gardens germinated about 2,700 plants. As the India Office wished, the bulk of these went to Ceylon, 1,919 being despatched there in August 1876, of which 90 per cent arrived in good condition. But fifty plants were also sent to the Botanic Gardens, Singapore, the reason given by Kew being that 'Dr. Hooker was anxious to give the *Hevea* plants an additional chance of becoming established in the East by sending a portion ... to the Straits Settlements'.⁶ Due to delay in payment of freight on this consignment, the plants were detained for a month in the Singapore docks. There is some doubt as to whether any survived permanently, but H. J. Murton, Superintendent of the Gardens there, reported that five were saved and flourishing a year later.⁷

Robert Cross made two visits to South America. In 1875 he brought back specimens of the *Castilloa Elastica* rubber tree, and in 1876 he obtained 1,000 *Hevea* plants together with a few of the *Ceara (Manihot*

¹J. Collins, *Report on the Caoutchouc of Commerce* (London, 1872).

²Letter to India Office, 15 May 1873, K. G. C.: Caoutchouc, Vol. 1 (1873-1905). The tree referred to was *Hevea Brasiliensis*, found in the Para district of Brazil. Hereafter referred to as *Hevea(s)*.

³T. Petch, 'Notes on the Plantation Rubber Industry in the Far East', *Annals of the Royal Botanic Gardens, Peradeniya*, Vol.5 (1911-14), p.439.

⁴Sir C. Markham to Dr. J. Hooker, 1 April 1876, K.G.C.: Caoutchouc, Vol.1.

⁵A recent researcher concludes that there is no substance in the story that Wickham had to smuggle these seeds out of Brazil. P. R. Wycherley, 'Introduction of *Hevea* to the Orient', *The Planter* (March 1968), pp.1-11.

⁶Assistant Director, Kew, to India Office, 12 August 1876, K.G.C.: Caoutchouc, Vol. 1.

⁷H. J. Murton to Dr. J. Hooker, 15 November 1876 and 6 September 1877, K.G.C., Vol.166.

Glaziovii) variety. The *Castilloas* and *Cearas* were successfully established at Kew, and subsequently distributed overseas, but division of opinion exists as to whether any of the *Heveas* survived the seedling stage to reach the East.¹ The original records are conflicting,² however the controversy is only of marginal relevance to the later development of the plantation industry. Whether from the Cross or Wickham collections, 22 *Heveas* were sent to Singapore in September 1877 and arrived in good condition. Cross advised that from his observations in South America, *Hevea* thrived best in low-lying areas subject to annual flooding, that the trees could not be over-tapped provided the inner wood below the bark was not penetrated, and that tapping should be confined to the dry season.³

Once specimens of trees had been transferred safely to the East, the initiative in further investigations passed to the Botanic Gardens in Singapore and Ceylon. The first requirements were to observe the reaction to the new environment and to increase the stocks of trees. Since seeds would not be produced for a number of years, propagation by means of cuttings was tried. Both places reported initial success, but encountered increasing difficulty as the parent-trees became older. At Singapore, Murton had far fewer trees than Ceylon with which to experiment, and soon after the arrival of the second consignment of plants in 1877 he took specimens of each of the South American varieties to Perak/There they were planted in the Residency garden at Kuala Kangsar and subsequently supervised by the Resident, Hugh Low. The *Heveas* grew well but neither the *Castilloas* nor the *Ceara* were very successful. The growth of the *Heveas* at Singapore slowed down after they were transferred to low swampy ground in the new Economic Garden in 1878.⁴ Murton also started investigations of rubber-yielding plants indigenous to the Malay Peninsula. This work was continued by his successor, N. Cantley, who took over in 1880. In 1883 some of the *Heveas* were transferred back to better-drained ground, where they made quicker progress. But by 1885 Cantley held the view that their ultimate success was not certain and that indigenous varieties offered a more sure potential.⁵ A local paper commented that 'the exotics do not after all possess a very absorbing interest'.⁶

During these years the possibility of commercial exploitation of the imported rubber trees had thus received rather desultory attention, in-

¹See Petch, op.cit. p.442; I. H. Burkill, *Dictionary of the Economic Products of the Malay Peninsula*, 2 Vols., (London, 1935), Vol.1 p.1150; *Agr. Bull. S. and F.M.S.*, Vol.9 (1910), pp.208-10.

²Assistant Director, Kew, to India Office, 8 September 1877, K.G.C.: Caoutchouc, Vol.1; memorandum, n.d., Ibid; Report by H. J. Murton, 6 August 1877, Singapore Botanic Gardens Archives: Early Reports, 1868-80.

³Report dated 29 March 1877, reprinted in J. Ferguson, *All About Rubber* (Colombo, 1899), pp.cxxi-cxxxviii.

⁴*A.R. Botanic Gardens Singapore*, 1878, pp.3-4, 1879, p.4.

⁵Ibid. 1885, p.11.

⁶*Straits Times*, 5 July 1886.

vestigations being conducted largely by men in official circles. In 1883 Frank Swettenham (later Resident-General and High Commissioner F.M.S.), then in Selangor, sent specimens of a latex-yielding creeper to Singapore,¹ and later stated that the following year in Perak he planted out 400 *Hevea* seeds from the Kuala Kangsar trees,² which had first seeded in 1881. Doubt exists as to the date of the first attempts at tapping in Malaya, but Hugh Low sent rubber samples to England in 1883,³ possibly from *Ceara* trees, which were not well-received.⁴ Indications of private interest in rubber are few. Martin Lister, who later joined the government service in Malaya, was anxious to obtain seeds in 1881 for Linsum Estate in Negri Sembilan.⁵ He was associated with a Mr. Hill, doubtless the prominent pioneer planter T. H. Hill, who put out some rubber trees on this estate and at Weld Hill in Selangor between 1883 and 1885, though his intention does not seem to have been an immediately commercial one.⁶ As the evidence relating to the transfer of rubber from South America has already indicated, the prime official purpose had been to set up only planting material supply-centres in Ceylon and the Straits Settlements for a rubber industry in the Indian sub-continent. The resources of the planting community in the Malay Peninsula were already engaged in other avenues of development. Beginning from the early nineteenth century, Chinese pepper and gambier-growers had progressively extended their interests from Singapore and Johore into Malacca, Negri Sembilan and Selangor. From about 1850, largely in Malacca and Negri Sembilan, they had also developed the tapioca industry. The earliest European planters had experimented with a number of crops but after the mid-1830s an increasing amount of attention was devoted to sugar-growing, concentrated in the Province Wellesley and north Perak areas; an industry which was also attracting substantial Chinese participation. These were the principal commercial crops at the time of the advent of rubber.⁷ Both labour and capital were in relatively short supply. The expansion of planting enterprise was further influenced by the political situation in the western parts of the Peninsula, which in the 1880s was in a state of transition.⁸ British influence had not long been formally extended to Perak and Selangor, and it was to be some years before conditions in these and neighbouring states, for example transport facilities and land regulations, could be made more attractive to commercial agriculturalists.

¹Copy, letter of 15 May 1883, in Singapore Botanic Gardens, Plants and Seeds Register: Inwards, 1881-7, p.85.

²Sir F. Swettenham, *British Malaya* (revised edition, London, 1948), p.263.

³*A. R. Perak*, 1883, p.5.

⁴P. R. Wycherley, 'The Singapore Botanic Gardens and Rubber in Malaya', *Gardens Bulletin, Singapore*, Vol.XVII, Pt. 2, December 1959, p.178.

⁵Sir C. Markham to Sir J. Hooker. 6 July 1881, K.G.C., Vol.165.

⁶J. C. Jackson, *Planters and Speculators* (Kuala Lumpur, 1968), pp.213-14.

⁷Survey based on Jackson, *op.cit.* parts I and II.

⁸See C. D. Cowan, *Nineteenth Century Malaya* (London, 1961).

