

spread to justify legislative interference by way of prohibition ; nor has the state of public opinion on the question reached the stage of rendering a policy of prohibition desirable or practicable.

The Government very wisely adopted these recommendations, and are still carrying them out.

BOTANIC GARDENS AND ECONOMIC NOTES

By Dr. Gilbert E. Brooke

If Singapore were famous for nothing else, its intimate pioneer connection with two of the most useful substances of modern life—gutta-percha and india-rubber—would endow it with a good claim to immortality.

For many years the inhabitants of certain districts in Malaya had used gutta to make moulded handles of krises, etc. ; and in the early 'Forties a Malay trader introduced it to Singapore in the form of riding whips. It was at once investigated by Dr. Montgomerie, the Senior Surgeon, S.S., and by the Naval Surgeon d'Almeida, who was so well known as a merchant in Singapore for many years. The latter was the first to bring it to the notice of scientific men in England when on a visit in April 1843, but the Asiatic Society, to whom he gave it, did not evince any enthusiasm, and contented themselves with sending a letter of thanks. At or about the same time Montgomerie sent some to the Bengal Medical Board, suggesting a possible use for surgical purposes. Whether they took it up does not transpire, but in 1845 he sent further samples to the Society of Arts in London, and was promptly given their gold medal. It was only six years later that Professor Wheatstone first used gutta-percha for coating submarine cables.

Singapore's connection with rubber was no less remarkable. Dr. Collins, who from 1874 to 1875 was in charge of Museum, Library, and Gardens, was already distinguished by having published the first complete report on the rubber industry of Brazil ; and had been the first

available, and the work had to be completed by Chinese coolies.

Up to this time the Society had had two Secretaries: firstly Mr. J. E. Macdonald, and secondly Mr. E. S. Leveson. The third Secretary, in 1867, Mr. C. H. H. Wilsone, was less fortunate than his predecessors, and left the Gardens with a debt of over \$700 on the contract for the Superintendent's house. When their financial position was realised, the Committee prevailed on the Government to increase their monthly grant from \$50 to \$100; but Governor Sir Harry Ord only sanctioned this on the understanding that living economic plants should be exhibited for the benefit of enquiring travellers. At the same time he suggested the formation of a Zoo as an educational attraction, and offered to present some animals.

Dr. Little, however, stated in Council on the 24th December 1874 that the Society had not grown economic plants as required by their compact, and that their interest was dying. That this was indeed the case was proved by a resolution forwarded to Government on the 13th August 1874, asking that the Gardens might be taken over by Government, which was finally effected on the 7th November.

For a short time the Garden was placed under the control of the Committee of Raffles Museum and Library, which Institution had also been taken over by Government not long before. The Curator had arrived that year. He was a Dr. James Collins, who had been Curator of the Museum of the Pharmaceutical Society, and had been chosen by Sir Joseph Hooker. He was an expert on rubber, and had been responsible for introducing the first rubber seed to England through Clements Markham in 1873. He started a journal in July 1875, the *Journal of Eastern Asia*, which was intended to appear quarterly and take the place of *Logan's Journal*, long defunct; but only one number appeared. His idea of a local commercial museum was carried out only forty-four years later, and then by Japanese.

Dr. Collins left Singapore about 1877, but his temporary control of the Gardens had ceased two years previously, when Henry James Murton had come out from Kew Gardens (at the age of only twenty) to take charge as Superintendent. The latter brought many plants from Ceylon, and with later supplies from Kew, Mauritius, Brisbane, etc., the Agri-Horticultural Society's Park was at last converted into a proper Botanic Garden. Mr. Niven was retained with the title of Manager, but died when on leave shortly afterwards. A man named William Krohn was employed by the Committee to build up the collection of animals. Mr. Murton was the first to plant para-rubber trees in Singapore and Perak, and published reports on native rubbers and gutta-perchas. He left the Gardens in 1879, and obtained an appointment under the King of Siam in 1881, but died the same year by falling from a window in the palace. Niven was replaced by a head gardener from England, named George Smith, but he died in about a year.

Walter Fox was appointed in June 1879 as Assistant Superintendent to Murton, and did most excellent work in the Garden for many years, retiring only in 1910 when the appointment he then held, Superintendent of Forests and Gardens at Penang, was abolished.

Meanwhile the story of the Zoo must not be omitted. Immediately it was generally known that the Government would maintain a collection of animals in the Gardens, gifts poured in. Sir Andrew Clarke presented a two-horned rhinoceros, Sir Ernest Birch a sloth bear, Captain Kirk two orang-utans, the Acclimatisation Society in Melbourne an emu, one great kangaroo, three red kangaroos, and a bushy-tailed wallaby, all in 1875. In 1876 the King of Siam gave a leopard, and the Sultan of Trengganu a tiger. By 1877 they had 144 exhibits, and the expenditure far exceeded the Government grant. At first two privates of a regiment stationed in Singapore were employed as keepers; then, in 1876, a Mr. Capel, for whom a small house was

built below the aviary, but he was dismissed because he wanted more pay. Chinese were next employed as keepers, and then Javanese.

There were big losses amongst the animals. For instance, one night in 1876 some reprobate killed the emu, a bear, and a cassowary. In 1877 the rhinoceros and two kangaroos died, and in 1878 both of the leopards. This decided the Committee to keep only birds and small animals. So they sent the tiger and orang-utan and other animals to Calcutta in exchange for some Indian birds.

The shrivelled Zoo kept up a precarious existence until 1905, when the last occupant was sold. Its fame was not realised until after its abolition, when, in the following year, nearly 2,000 globe-trotters are said to have visited the Gardens to see it, and left in disgust, as there was nothing else to see in Singapore !

Nathaniel Cantley succeeded Murton as Superintendent of the Garden in November 1880. He had been attached to Kew Gardens, and had also been Assistant Superintendent of the Botanic Gardens in Mauritius. He was not strong, but got through an immense amount of work. The Economic Gardens were founded by him on ground formerly belonging to the military authorities, which had been the site of the camp of a West Indian regiment. He originated the Forest Department, and made the first proper herbarium in Singapore. At the end of 1887 his health broke down, and he died in Australia when on leave.

He was succeeded by Mr. H. N. Ridley, M.A. (Oxon), F.L.S., in November 1888. The services of Mr. Ridley, who retired in 1911, are too recent to be reviewed at length. Suffice it to say that his fine herbarium and his indefatigable literary contributions to botanical science throughout a career of practically a quarter of a century in Singapore were recognised by an F.R.S. in 1907, a C.M.G. in 1911, and the gold medal of the Rubber Growers' Association in 1914.

The present holder of the post is Mr. I. H. Burkill,

M.A. (Cantab.), F.L.S., late of the Botanic Gardens in Calcutta, and formerly a Principal Assistant at Kew Gardens, who assumed his duties in the Straits Settlements in October 1912.

BIBLIOGRAPHY

Anecdotal History of Singapore, C. B. Buckley, 1902.
Journ. Str. Br. Roy. Asiatic Soc. : No. 33, Jan. 1900 ; No. 65, Dec. 1913.
Gardens Bulletin S.S., vol. ii, No. 2, Aug. 1918 ; vol. ii, No. 3, Nov. 1918.
Journ. Ind. Archip., vol. i, 1847 ; vol. iii, 1849 ; vol. ix, 1855.
Early Col. Records, vols. 93, 101, 103, 195, 220, 229, 310, 334, 671, 751, 911.
Proc. Leg. Co., 1878, App. 32.
Dict. Nat. Biography LIX.

MR. HENRY NICHOLAS RIDLEY, C.M.G., F.R.S.

The work of Henry Nicholas Ridley in the Colony extends from the 25th September 1888, when he was appointed to be Director of Forests and Gardens, to 1911, when he retired. Born the 10th December 1855, he was educated at Haileybury and Exeter College, Oxford, taking his M.A. degree and winning the Burdett-Coutts Geological Scholarship. From 1880 to 1888 Mr. Ridley was assistant in the Botanic Department, British Museum, and his connection with the Museum, keeping touch with the work there and its personnel, has been of the greatest benefit to the Colony. In 1886 he undertook a trip to Brazil for the Royal Society, and came out to the Straits in 1888. He received the C.M.G. in 1911.

Mr. H. N. Ridley's work for the Royal Asiatic Society, Straits Branch, is contemporaneous with his becoming a member in 1890. The time was critical for the Society, as the early interest had died out and new members had not come forward. Mr. Ridley's interesting personality and wide scientific sympathies soon gave birth to a new order of things. He was Honorary Secretary from 1890 to 1893, and again from 1897 to 1911, when he retired and was made an honorary member. Writing fluently