The Contribution to Agriculture in Malaya by the Singapore Botanic Gardens

By a Malayan Agriculturist

A garden: A piece of ground where flowers, etc. are cultivated. A pleasant spot. (Chambers's Dictionary).

The Singapore Botanic Gardens are a very pleasant spot indeed and a good place to relax. So much so, that the casual visitor would have no idea of their importance to Malayan agriculture and the valuable scientific research that is carried on there.

It has been said* that the experimental and scientific work in a botanic garden “cannot by its very nature be directly remunerative but may indirectly repay its cost many times by establishing new industries, by saving old ones from losses by disease or otherwise, introducing new and improved methods and so on”. The validity of this statement is well demonstrated by development of the rubber industry in Malaya, but even if this were not so, even if rubber had failed to grow here at all, the Botanic Gardens have made many other less spectacular but nevertheless notable contributions to Malayan Agriculture.

In the first place it should be recalled that when the Gardens were taken over by Government in 1875, it was intended that they should be concerned with agriculture and the economic development of the Straits Settlements and not merely a pleasure garden or a base for collecting material for the Botanic Gardens at Kew in England. The Director of the Gardens was also the Director of the Forest Department and regarded, by the Government at least, as the pre-eminent authority in Malaya on anything whatever concerned with plants.

Starting in 1891 a Bulletin dealing with Agri-Horticulture, and other cognate subjects, was published by the Gardens and this was issued as a monthly journal from 1901 to 1911. (Agricultural Bulletin of the Straits and Federated Malay States), Opening Volume I of this Journal at random one may find articles on rubber cultivation, a series on the Timbers of the Malay Peninsula, Trade and Market Reports and, among the correspondence, a letter from Mr. Carey claiming that coconuts will yield well on the coastal clay soils of the West Coast. Even today, the scientific reports are of

* J. C. Willis, 1907.
value and although the price of opium (11s. 6 d. per lb., spot) and Mr. Carey's well justified optimism are only of historical interest, one can appreciate how this Journal must have made up for the lack of communications and expert advice to which we are now accustomed.

The Bulletin continued to be published even after a Department of Agriculture for the Federated Malay States was set up in 1905, but its name was changed to the Gardens Bulletin in 1912 when the F.M.S. started to produce its own agricultural magazine. In 1919, the Department of Agriculture, F.M.S., also took over the responsibility for agriculture in the Straits Settlements, and the Gardens Bulletin gradually began to put less emphasis on practical agriculture until 1924 when this aspect of the Garden's work finally came to an end.

This is not to say that the Gardens' staff were no longer interested in agriculture. The Economic Gardens of 102 acres had been opened in 1879 and used as a preliminary trial area for numerous local and introduced plants which were considered to have some potential value. In addition to rubber, it is worth noting that the first oil palms in Malaya were planted there about 1875 and an excellent review of the possible value of these palms in Malaya was published in the Bulletin in 1907. The Economic Gardens were unfortunately closed in 1925, but despite this I. H. Burkhill was able to publish his Dictionary of the Economic Products of the Malay Peninsula, which is still in every-day use as a reference book at the Department of Agriculture in Kuala Lumpur and all over the world. Other books which have been invaluable to agricultural research and have an international reputation include the floras by Ridley, Holttum and Henderson and the well illustrated two volumes on Wayside Trees of Malaya by Corner.

It is our good fortune that the work of the Gardens has been so well documented but no library, however comprehensive, could replace the collection of living and preserved material which is available there. The value of these specimens to the teacher, the student and amateur gardener need not be mentioned here, but to the scientist from tropical and sub-tropical countries, the herbarium type specimens and the easily accessible living material, form an invaluable point of reference. For instance, when the Department of Agriculture was recently anxious to learn the types and distribution of citrus trees growing in Malaya in order to prepare a scheme to improve the planting material of this crop, the Plant Breeder first visited the herbarium at the Gardens and was not only able to gather much of the information he required but was also able to clear up some difficulties over citrus taxonomy in general.
Difficulties are, in fact, quite frequently encountered by anyone concerned with taxonomy and since this is a science in itself there is a small traffic of specimens from Kuala Lumpur to the Gardens for identification.

It would perhaps be appropriate to emphasise here how useful it is for the agriculturist to know the correct botanical name for a plant he is growing. It would be useless for anyone wanting oil palm seed to write to West Africa asking for seed of “kelapa bali” or “kelapa sawit” but if the palm were given its accepted botanical name, *Elaeis guineensis*, the type of seed required would be clearly understood. Similarly root-disease of fruit may be due to a number of causes, but if the plant pathologist can isolate and identify, say, the fungus *Phytophthora citrophthora* from the diseased roots, he can at once be almost certain that he has found the cause of the trouble, and can consult the literature describing methods for controlling this same fungus in other parts of the world.

Until, perhaps, electronic translating machines are invented, it is too much to hope that scientists throughout the world will publish all their works in a universal language. For the moment we must be thankful that Linnaeus invented his binomial system for naming plants and animals. Without this system, and the support of institutions such as the Singapore Botanic Gardens, which are mainly responsible for its propagation, there is no doubt that agriculture would be immeasurably the poorer.