CONTRIBUTIONS FROM THE RUBBER RESEARCH SCHEME (CEYLON)

DISEASES OF RUBBER IN CEYLON, 1931

R. K. S. MURRAY, A. R. C. Sc.

MYCOLOGIST,

RUBBER RESEARCH SCHEME (CEYLON)

1. FOREWORD

THIS article is the third of a series of annual reviews whose purpose is to keep planters in touch with the general position of Rubber diseases and pests in Ceylon, and to acquaint them briefly of any important developments during the year in question.

2. ROOT AND COLLAR DISEASES

There are no new developments to report for 1931. At the present time, when expenditure on all items must be reduced to the bare minimum, it is more than ever important that such money as is voted under "Pest and Disease" account should be utilized to the best advantage. On the great majority of estates in the main low-country districts the most dangerous disease is *Fomes lignosus*, and every effort should be made to prevent the spread of this fungus. Only the most thorough measures, involving the removal of all diseased roots and infected material, will prevent the spread of the disease, and it is emphasised that the treatment which eradicates the disease once and for all from any particular area is the cheapest in the long run. When once large areas become involved, the control of the disease is an exceedingly difficult and expensive undertaking.

The next most important fungus in mature areas is *Ustulina zonata*, and, inasmuch as this fungus develops to an alarming extent if neglected, it is important that the treatment of root, collar, and stem attack should receive adequate attention. In order to prevent fresh infection by the spores borne on the surface of young fructifications, it is advisable, before removing tissue on which whitish and light grey fructifications have formed, to paint these over with tar or disinfectant.

3. STEM DISEASES

In common with other *Phytophthora* diseases Bark Rot was somewhat severe in many districts during the protracted South-West Monsoon. Although present methods of controlling this

disease cannot be considered perfect, the measures adopted on most estates are effective in preventing the worst manifestations.

Canker can be safely neglected on the majority of estates except where the actual tapping panels are affected. During dry weather tappers should be encouraged to flake off the dead bark from any canker patches within reach of the ground.

Die-back of leading twigs and branches has been much in evidence on poor washed-out soils. In nearly all cases the dying-back is primarily due to lack of cultivation and measures for the conservation of water and surface soil. There is a host of weakly parasitic fungi which are unable to attack fully healthy twigs, but which can parasitise and kill back shoots whose water or food content is reduced below a certain level. The dying-back is often most marked on estates which made liberal applications of inorganic manure two or three years ago to soils deficient in humus, but which are now unable to continue manuring. The die-back may be regarded as the tree's natural efforts to restore the balance between the foliage and the mineral food substances coming from the roots. The soil having reverted to its former condition of comparative sterility, the additional foliage produced as the result of the manure can no longer be supported. Unless a virulent parasite gains entrance the die-back will continue until the quantity of foliage remaining is "balanced" by the nourishment derived by the root system.

It would be a counsel of perfection in such areas to recommend the removal of all dead branches, resume a regular manuring programme, and by the establishment of cover crops and silt-pits restore the fertility of the soil so that the application of artificial manures will be of more permanent benefit. At the present time, however, it is questionable to what extent the outlay involved in improving poor areas will ever be repaid.

4. LEAF DISEASES

Owing to the unusually protracted wet weather during the South-West Monsoon, secondary leaf-fall due to *Phytophthora palmivora* (*P. Faberi*) was comparatively severe in most districts. Although it is possible that with the cessation of manuring and other measures of cultivation the damage done by this disease during the next few years will be more severe than usual, there is at present no reason to fear that direct control measures will have to be adopted.

Oidium leaf disease is firmly established in all districts, but only at mid-country elevations is the defoliation serious. Experiments carried out in Matale have shown that both yield and bark renewal are seriously affected by intensive attacks over a number

of years, but that a high degree of control can be secured by sulphur dusting so that the yield is maintained at a normal level.

5. DISEASES AND PESTS IN NURSERIES

The possession by most estates of budwood nurseries for the multiplication of high-yielding clones has focussed attention on the various ailments to which young rubber plants are prone.

Although there are fortunately no new diseases or pests to report, considerable damage has been done by attacks of *Phytophthora palmivora* on green shoots. In common with other *Phytophthora* affections, this disease was favoured by the almost continuous wet weather experienced in most districts from May to September. The disease has been described in previous publications and the symptoms are now well known to most planters, but it is not out of place to reiterate the necessity for periodical applications of Bordeaux Mixture during wet weather, especially during the period of the South-West Monsoon. Attacks of this fungus on the woody portions of bud-shoots, causing a type of Canker, have also been reported. It is of interest to note that Clone B.D. 5 appears to be extremely susceptible to this disease.

Pests in nurseries include mites, slugs, and lizards.

6. DISEASES OF GREEN MANURES

Sclerotium Rolfsii was found attacking *Crotalaria usaramoensis* and *Crotalaria* (*angustifolia?*) on an estate in the Kalutara District. In both cases the plants were rapidly killed.