

A further difficulty encountered on the plantations devoted to cacao is in the disposal of the empty pods, especially in the rainy season. If left about in heaps the pods attract the rhinoceros-beetle in large numbers, while if spread about the blocks there is a great danger of the spread of bark-disease. On the other hand, excepting in very dry seasons, it is very difficult to destroy the pods by burning, and, alternatively, if buried in shallow trenches they provide a favourite breeding-place for the beetle. The Department has suggested a form of trench, provided with a shelter, in which the pods may be burned in the green state, irrespective of weather conditions; or should the pods be required for manure, they may be treated with a fungicide and spread on the ground. Some of the plantation-managers have been accustomed to spread their pods over the blocks, and the Department has considerable difficulty in persuading them of the danger associated with this practice. Under adverse conditions it has been thought advisable to make a more lenient application of the provisions in the Ordinance relating to the cleaning-up of lands until the outlook brightens. There have been no applications during the past year for permission to open up new cultivations. This is no doubt accounted for by the high cost of labour in Samoa, which places our planters at a great disadvantage in competing with the products of those countries where labour is both cheaper and more plentiful.

SAVAII.

In September last an official visit of inspection was made to Savaii. This comprised a complete circuit of the coast, inspecting all the Native plantations along the route. The visit amply demonstrated the need for more stringent measures to cope with the beetle pest, as the position in Savaii is as not so satisfactory as in Upolu. The standard of cultivation in Savaii is inferior to that of Upolu, in fact which is sufficient to account for the serious ravages of the beetle in many places. During the inspection the system followed in Upolu of cleaning up *en bloc* one day in each week was introduced, and instructions were also issued on the spot for certain areas to be cleaned up forthwith.

The trouble in Savaii is due entirely to neglect to clean the cultivations, and the first step towards effecting an improvement is that of training the Pulefaatoagas, who at present are largely ignorant of their duties. In order to expedite this, the appointment of an additional European Inspector is recommended. Additional Pulefaatoagas have also been appointed. Savaii must be brought up to the Upolu standard, and to do this it will be necessary to have closer European supervision. There is, of course, the further difficulty to contend with due to the distance of Savaii from Upolu.

SUGGESTED METHODS OF CONTROL.

While the Department depends on clean cultivations and organized searching as the surest method of controlling the pest, some proposals for dealing with it from outside sources may be mentioned here. It was suggested that the weka be imported from New Zealand. The proposal received the Department's careful consideration, but the objections to the weka outweighed any advantage likely to occur, and no action was taken.

It is stated that the flame-tree (*Poinciana regia*) has a great attraction for the rhinoceros-beetle, and that the latter falls an easy prey owing to its legs and wings becoming involved in the exuding sap. Some six months ago the Department made inquiries regarding the tree, but the communications received from competent authorities were not encouraging. However, as the claim for the efficacy of the flame-tree is stated in some detail, further inquiries are being made, and seeds of it are being procured. It is worth mentioning that Samoa already has a species of the flame-tree which is believed to be *Poinciana regia*, but it is not found that it has any attraction for the rhinoceros-beetle, and it is probable that the beetle attracted by the flame-tree in other countries is not *O. nasicornis*.

Scoliid Wasps.—The value of these wasps as a means of beetle-control in Samoa is a matter for future investigation and consideration.

DISEASES AND PESTS.

Apart from the rhinoceros-beetle, diseases and pests affecting the coconut-palms in other countries are either comparatively negligible or entirely absent in Western Samoa.

Canker (Bark-disease).—There is some canker among the cacao-trees in a few plantations, but there have been no undue developments during the past year.

Pink Disease (Limumea).—An outbreak occurred of pink disease on one of the large plantations, and it was successfully dealt with. A few cases of limumea have been noticed, but this disease is usually confined to new clearings.

Lantana.—This prolific weed is very troublesome in places, particularly in the Aleipata district. The weed is also giving much trouble on the various partly abandoned European plantations.

Asclepius.—There have been several instances in which cattle have mysteriously died, and it is thought that their death has been due to this weed. A specimen of the weed has recently been forwarded to Fiji for analysis and report.

Flying-foxes.—The flying-foxes are a formidable nuisance, and constitute a difficult problem to deal with. Communications have lately been received from the authorities in New South Wales and Queensland on the subject. The Director of the New South Wales Department of Agriculture states: "A considerable amount of attention has been given to combating the pest, but so far with practically no success." A similar conclusion has been arrived at in Queensland, where various methods, including liquid fire and mustard-gas, have been used to destroy the foxes. The use of a virus has been suggested, but the Medical Officer of Health is apprehensive of the danger that might arise to human beings through infection.

Rats.—No special complaints have been received during the year of the rat nuisance in the plantations.