

DIAMOND-BACK MOTH AND WHITE BUTTERFLY

The larval parasite (*Apanteles glomeratus*) of the white butterfly is thoroughly established in Nelson; collections of it have been made and distributed to officers of the Department of Agriculture who are co-operating in the spread of the parasite into different parts of the country.

In the case of the parasites of the diamond-back moth, these are now well established in the Dominion and supplies are being reared for shipping to the authorities in Australia and Tasmania.

RED-LEGGED EARTH-MITE (*HALOTYDEUS DESTRUCTOR*)

This mite is well established in the vicinity of Napier and Wairoa and near Gisborne. It has been under investigation during the past few years, so that when it came into prominence during 1946, control measures could be advocated, and will be put into operation to meet any future outbreaks amongst early vegetable crops, under which conditions the mite can be economically controlled by insecticides, but any attempt to eradicate it would be fruitless. A detailed study of the mite is being continued to ascertain the extent of its possible distribution in New Zealand and to intensify control measures. It seems that its distribution tends to be limited by climatic conditions.

AUSTRALIAN SOLDIER-FLY (*METOPONIA RUBRICEPS*)

The deterioration of pasture land and maize in the Opotiki basin is associated with the presence of an extraordinarily high population of the larvæ of the Australian soldier-fly in the soils.

The larvæ of soldier-flies are not known to be destructive; they feed mainly on decaying vegetable matter as well as being carnivorous, and often occur in very large numbers. In this particular case, however, some, but by no means all, of the larvæ are found attached to the roots of grasses and maize. Work is proceeding in co-operation with the Department of Agriculture.

CRANE-FLY LARVÆ (*TIPULIDÆ*)

Unusually high populations of a native species of crane-fly larvæ were studied in areas of damaged pasture in the vicinity of Waimate. There is no evidence yet to show that these larvæ were responsible, since grass-grub and porina caterpillars were also present. However, there is a possibility of crane-fly larvæ being destructive to pastures, and the investigations are proceeding.

CLOVER INSECTS

The causes responsible for the comparatively low yield of red-clover seed are being investigated. Although clover thrips are very common on clover throughout the country, there is a possibility of their not being of major importance.

On the other hand, a survey of the humble-bees is being carried out in order to ascertain the species present in New Zealand, and their distribution and relative abundance as a basis upon which to decide what further species should be introduced.

INSECTS OF STORED PRODUCTS

In the case of the wartime project of cheese-mite control, work during the year has been centred upon the completion of researches into the physical ecology of mites.

Experiments have been carried out with fumigants and dusts for the control of insect pests of stored grains and hides.

INSECTICIDES

Experiments with D.D.T. indicate that this insecticide cannot be used indiscriminately in orchards; its detrimental influence upon bees can be avoided to a certain extent, but its destruction of natural enemies, especially those of woolly-aphis and red-mite, without affecting the pest will exclude D.D.T. from general orchard practice.