

ENTOMOLOGY DIVISION

SUBTERRANEAN OR PORINA CATERpillARS

During dry weather conditions from spring onwards caterpillar populations were greatly reduced, particularly on lighter soils. In the absence of sufficient pasture, the caterpillars will migrate on the surface day or night. Irrigation, although not harming the caterpillars, stimulates the pasture growth and maintains it in spite of attack. As soon as irrigation ceased (or on non-irrigated areas) the pasture was eaten bare. Poisoned wheat germ with chaff and sawdust has proved a good substitute for poisoned bran.

GRASS-GRUB

Soil moisture is the important factor influencing the abundance of grass-grub. There is a low grub population in dry seasons and dry soils. Experiments with insecticides have resulted in a valuable control of the beetles. D.D.T. was used with excellent results. In any extension of this on a wide scale, serious consideration of the influence upon honey and humble bees must be given, especially in honey and clover-seed regions. Attempts are being made to find a reliable means by which farmers can be notified when to expect flights of beetles, upon which depends their sowing of cruciferous crops.

Researches are being carried out by a New Zealand officer in Australia on the natural enemies of the grass-grubs, because none exist in New Zealand. So far one such parasite has been successfully reared on New Zealand grubs, indicating that Australian parasites will attack the New Zealand grass-grubs. It has now been possible to narrow the field of research.

ADVISORY WORK

Advisory work has been undertaken for different Government Departments, public bodies, farmers, and the general public. The field covered agriculture, horticulture, forestry, timber industry, and public health.

OTHER ACTIVITIES

The main results of the experiments on the red-legged earth-mite are not yet to hand.

It has been demonstrated that the larvæ of the Australian soldier-fly cause severe stunting of maize. The population is reduced by cultivation.

A survey of the fertilization of red clover indicated the need for humble-bees. It was found impossible to bring in bees from England because of the possibility of disease infection. The possibility of obtaining bees from North America is now being investigated. This project is operated conjointly with Canterbury Agricultural College.

The possibility of the blackberry-mite attacking raspberries is being followed closely.

Insects in relation to cocksfoot stem-borer, yellow leaf of phormium, manuka disease, crane-fly larvæ in pastures, and wireworms have been studied.

FATS RESEARCH LABORATORY

Detailed investigations of the composition of butterfat have been continued with increasing success. Techniques developed in the Laboratory are in advance of those used in other parts of the world.

The production of the fish-liver-oil industry (based originally on work done by officers of the Laboratory) has now reached the vicinity of two billion units of vitamin A per annum, derived mainly from sharks. Research on molecular distillation of fish-oils has been maintained and has led to further development of this relatively new industry.