

## Notes on Potato Insects in Hawaii

BY O. H. SWEZEY

Experiment Station, H.S.P.A.

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The past few months have brought to a successful venture the raising of potatoes on a large scale on fallow cane lands at Oahu Sugar Co. and at Waialua Agricultural Co. on the island of Oahu. The former had some 130 acres in potatoes and the latter some 80 acres. Their plantings were timed so that the crop ripened over a period of two or three months, so as not to overstock the California markets, where they were shipped and sold as "new potatoes" at an advantageous season of the year—February and March. During the growth of these potato crops, some insects were found attacking the leaves and tubers not hitherto recorded on this plant in Hawaii. It is the purpose of these notes to place these on record.

### ***Laphygma exigua*** (Hub.).

This pest was breeding on weeds growing on waste land and along roadways in the vicinity of a large potato field. Their preferred host plant was amaranth, and they were feeding on this weed where it was growing in the potato field also. The caterpillars also fed on the potato plants to some extent. Control was brought about by Paris green included in the Bordeaux spray mixture which was being used to prevent blight.

### ***Agrotis ypsilon*** Rott.

The greasy cutworm was present to some extent, feeding on weeds, also on the potato plants, and when the potatoes were being harvested, frequently tubers were found considerably eaten by them. As a demonstration of their eating capacity, a full-grown cutworm when placed with an uninjured tuber over night ate a cavity as large as its own bulk.

### ***Lycophotia margaritosa*** (Haw.).

A few of the variegated cutworm were also found working similarly to the above.

***Plusia chalcites* Esp.**

The green looping caterpillars of this moth were common, producing ragged appearance of the leaves, but not numerous enough for distinct injury.

***Phthorimaea operculella* (Zell.).**

The potato tuber moth is perhaps the worst insect pest on potatoes in Hawaii, but none was observed at this time. The crop was to be harvested expeditiously and no doubt would escape being injured by this pest. It has caused considerable injury at times when the tubers were allowed to remain in the ground unduly, or stored where accessible to the moth.

***Pantomorus godmani* (Crotch).**

One larva of the Fuller's rose beetle was found boring into a tuber. No doubt if numerous in a field considerable injury might be done by them.

***Conoderus exsul* (Sharp).**

A larva of this elaterid beetle was found in a decaying tuber, but it was evidently not the cause of the rot. If numerous in a field this wireworm might cause some injury to tubers, though it is primarily predacious in habit.

***Empoasca solana* DeLong.**

An occasional leafhopper was found, not numerous enough for an infestation.

***Stictocephala festina* (Say).**

Two nymphs of this membracid were found on potato foliage, one of them reared to maturity. It is rather a general feeder, this apparently being the first record of it on potato in Hawaii.

***Aphis gossypii* Glover.**

In one large field there was a general infestation by the cotton aphid, causing the drying up of the foliage somewhat prematurely.

***Myzus persicae* (Sulzer).**

The peach aphid was present to some extent in the same infested field.

These are the first records of infestations by these aphids on potato in Hawaii. A number of the enemies of aphids were present but not numerous enough to control them. Those observed were the following:

Ladybeetles: *Coelophora inaequalis* (Fab.).

*Pullus kinbergi* (Boh.).

Syrphid flies: *Ischiodon scutellaris* (Fab.).

*Allograpta obliqua* (Say).

Predacious bug: *Reduviolus capsiformis* (Germ.).

Braconid parasite: *Lysiphlebus testaceipes* Cress.

Hyperparasite: *Aphidencyrthus aphidivorus* (Mayr).