

ABSTRACT

The Jamaican "fiddler" beetles being studied in this project have been allocated to 2 genera, Exophthalmus (5 species) and Pachnaeus (1 species). Both larvae and adult stages feed on citrus, the latter on the young, tender leaves, and the former on the roots.

The classification of the beetles of the genus Exophthalmus has been based primarily on colour patterns of the elytra, and because these vary considerably from one region of the island to another, this character has proved to be rather unreliable and inadequate.

In this project an attempt is made to clarify this classification using morphological structures (especially the mouth parts) of the immature stages, particularly the larvae which occupy most of the life cycle.

An investigation of the biology was also undertaken, with special emphasis on the effects of loam, sand and clay soils, using differing degrees of wetness and dryness, on the penetrability of the first instar larvae as they search for food. Also included in the biological investigation was the effect of different temperatures and relative humidities on the incubation period and percentage mortality of the eggs.

To facilitate observation throughout larval growth and development, caging and larval transfer techniques were employed.

Finally, an attempt was made to investigate the effect of 3 common soil insecticides on the first instar larvae and to use any information obtained from the study of the biology of the immature stages to suggest possible control measures.