

ABSTRACT

An Introduction to the Study of Insects of Forensic Importance in Jamaica

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The purpose of this study was to introduce and build a database of insect species of forensic importance in Jamaica. The study used two 50 kg pigs (*Sus scrofa*) as models to identify carrion insects, determine the succession of carrion insects and identify the stages of carrion decomposition in Jamaica.

Insects of forensic importance belonging to the following orders and families were collected: Diptera: Calliphoridae, Sarcophagidae, Muscidae, Piophilidae, Ulidiidae Stratiomyidae; Coleoptera: Histeridae, Staphylinidae, Carabidae, Dermestidae, Cleridae, Tenebrionidae; Hemiptera; Blattaria; Dermaptera; Hymenoptera: Formicidae. The study shows the presence of several species of known forensic importance (*Chrysomya rufifacies*, *Chrysomya megacephala*, *Cochliomyia macellaria*, *Piophila casei*, *Dermestes maculatus*) that have been used worldwide to aid legal investigations.

Five decomposition stages (fresh, bloated, active, post decay, skeletonization) and three guilds of carrion insects (necrophages, predators and omnivorous species) were observed. During the fresh stage, the first insects that appeared were flies of the Sarcophagidae and Calliphoridae and members of Formicidae (Hymenoptera). In the bloated stage, species of Calliphoridae were predominant. The active stage showed the dominance of predatory beetles such as Histeridae and Staphylinidae along with dipteran groups such as Calliphoridae, Sarcophagidae and Muscidae. In the post decay stage, the dominant families were Dermestidae and Cleridae beetles. No insect groups were present on the carcass in the final stage of decomposition (Skeletonization).

A few species found associated with pig carcasses during this study are the first reported in Jamaica. These findings may provide data for further use in legal investigations in Jamaica.

Keywords: Latoya Amoi Foote; forensic insects; Jamaica; carrion entomofauna.