INTRODUCTION

This work was taken up as an introduction to the ant-mealybug problem on sugar cane. In Barbados the presence of an ant (Acropyga marshalli Craw.) and a mealybug (Neorhizoecus sp. near N. colombiensis Hamb.) is correlated with considerable stunting of the cane. An outbreak of mealybugs of comparable severity has been recorded (Fennah 1954) in Trinidad, but at the present time they are of no economic importance. It was decided, therefore, to investigate a similar association between the ant Acropyga rutgersi Bunzli and a mealybug which occurs at the roots of Savannah grass (Axonopus compressus)on the College Savannah. The mealybug was identified in 1950 by Dr. W.J. Hall at the Commonwealth Institute of Entomology as 'belonging to the group of genera typified by Rhizoecus Kunckel'. It is probably an undescribed genus and species.

DESCRIPTIONS

The Ant

Acropyga rutgersi Bunzli belongs to the subfamily CAMPONOTINAE, most of whose genera are associated with Coccids and Aphids. The genus Acropyga has a tropical distribution, and is said (Nixon 1951) to feed probably only upon the honey-dew secreted by Aphids and Coccids.

Acropyga rutgersi is described in great detail in Bunzli's (1935) paper. The eggs, which are about 0.25mm in length, are found singly or in small groups in the chambers, either amongst ant larvae and pupae, amongst mealybugs, or entirely on their own. The larva hatches in about fourteen days. It is then hairless and slightly wrinkled, and is more or less incapable of moving any part of its body except the mouthparts. The next instar is very hairy, and is likewise incapable of movement. It is not known whether there are more than two larval instars. The pupa is naked, having no cocoon.

The workers are small, averaging 2.8mm long, and are yellowish, sometimes dull white, in colour. The queens are much larger, averaging 4.1mm in length, are the same colour as the workers, and have a very

distinct eye-spot. The males are much smaller than the females, about 2.9mm long, and are dark brown.

The Mealybug

The genus Rhizoecus belongs to the subfamily DACTYLOPIINAE, a group characterised by the absence of degeneration among the females, and which is often associated with ants.

The mealybug egg is very similar to the ant egg, having a hyaline appearance, but may be distinguished by its smaller size. Unlike most mealybugs the nymph does not hatch for a long time, the egg stage lasting about thirty days. There are four instars, all very similar except in size, the first instar nymph being about 0.15mm in length, and the third 0.8mm. The nymphs, especially those of the first and second instars, have the tip of the abdomen turned upwards in a very characteristic manner. The adult female varies in size depending on the number of eggs in the abdomen, but is normally about 1.0mm long and 0.5mm broad. When all the eggs have been laid it has a very withered and flaccid appearance. The male (fig. 12) is completely wingless and can be distinguished from the female (fig. 13) by its smaller size (0.5mm), by the thicker antennae, and by the distinct chitinised downwardly projecting sheath which encloses the aedeagus. The immature males may be distinguished from the females by the thicker antennae and the aedeagus sheath, which although not fully developed is readily apparent. No pseudopupal stage of the male was seen.