

DIAGNOSTIC CHARACTERS TO IDENTIFY THE SEXES OF THE ADULT MANGO PULP WEEVIL [*STERNOCHETUS FRIGIDUS* (FABR.)] (COLEOPTERA: CURCULIONIDAE)

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The mango pulp weevil [*Sternochetus frigidus* (Fabr.)] is a new pest of mango in Palawan that has been introduced from the Indo-Malayan countries (Basio *et al.*, 1994). It is considered as one of the serious problems of the mango industry because its presence brought about a quarantine restriction on Philippine mangoes, which prevented the opening of new markets for export. Aside from this constraint, the insect causes discolored feeding tunnels and pupation chambers in the fleshy part of the fruit that lowers the marketable yield of the crop significantly.

In order to develop effective strategies to eradicate the population of this insect, various research and development efforts have been carried out in recent years. The conduct of biological and ecological studies, however, has been restrained by the absence of reports describing male and female adult weevils. Only the immature stages were described in the various life history studies on this insect (Rahman & Ahmad, 1972, Kalshoven, 1981, Dey & Pande, 1988, De Jesus & Gabo, 2000). A simple method to distinguish the sexes of this insect would facilitate behavioral and ecological studies. This paper describes two diagnostic characters that could be easily used to identify a male from a female adult weevil.

The insects in this study were collected at random from ripe mango fruits. These were kept individually in glass vials for at least 10 days before the internal and external examination. The general form, size and shape of the whole insect as well as the different segments of the abdomen and thorax were examined to determine possible morphological difference between the sexes. Predicted males and/or females were confirmed by internal examination of the reproductive organs.

Two characters were found to effectively distinguish a male weevil from a female adult weevil. The metasternum (S III) of the thorax, which could be easily examined by holding the weevil on its back, provided the most readily observable difference. Male weevils have concave metasternum compared to the convex form of the female (Figure 1). The hairs on this particular sternite in the male are also narrower and more pointed than the hairs in the female, which are apparently set in an alveolar cavity (Figure 2). Researches to determine the functional reasons for these variations are underway.

The abdominal tergites of the weevils, which can be exposed by removing the elytra, also exhibit some basic differences between the sexes (Figure 3). Male weevils have eight (8) visible dorsal abdominal segments, the seventh (VII T) and eighth (VIII T) of which are sclerotized. Female weevils, in contrast, have seven (7) visible dorsal abdominal segments with the seventh segment (VII T) sclerotized.

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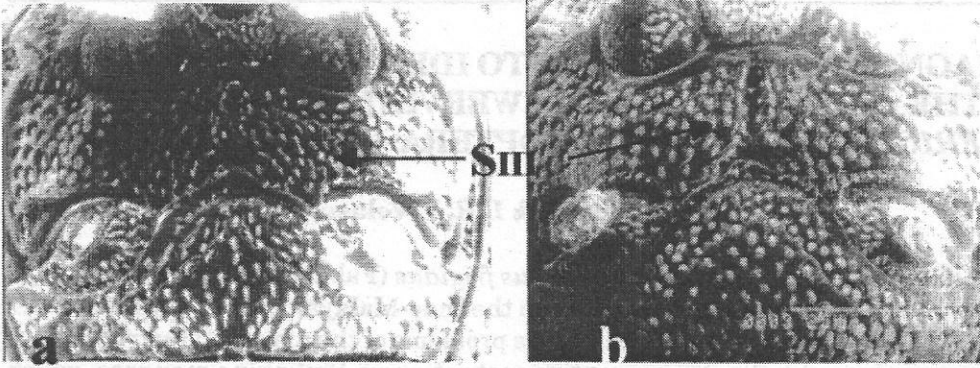


Figure 1. Metasternum of the male (a) and female (b) adult weevils.

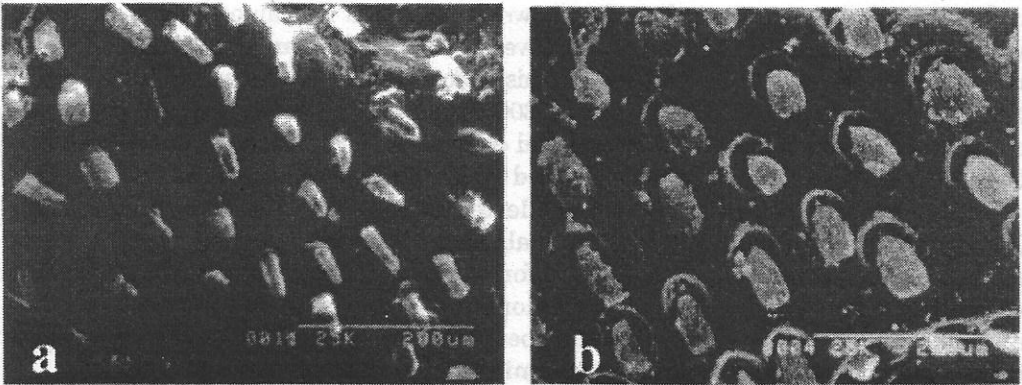


Figure 2. Hairs on the metasternum of the male (a) and female (b) adult weevils.

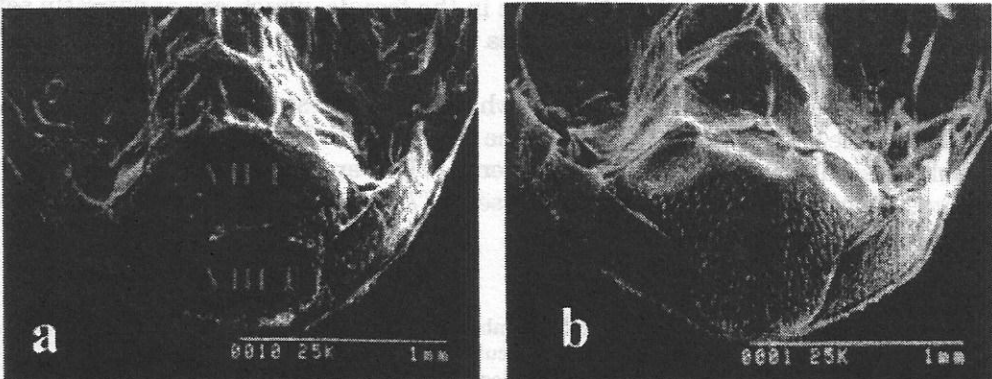


Figure 3. Abdominal tergites of the male (a) and female (b) adult weevils.

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