**DESCRIPTIOINS OF FEMALE MYRMECOLACIDAE (STREPSIPTERA) PARASITIC IN ORTHOPTERA (TETTIGONIIDAE) IN PAPUA NEW GUINEA**

Strepsiptera are obligate entomophagous parasites, with free-living male adults and totally endoparasitic females (except in the family Mengenillidae). In all the eight extant families but one, the male and female parasitise (stylopise) the same host species. However, the family Myrmecolacidae is unusual, not only for Strepsiptera but for insect parasitoids in general, as the males and females parasitise different host orders (males parasitise Hymenoptera – ants, and female grasshoppers, crickets and mantids) (Kathirithamby & Hamilton 1992). Consequently, hosts of only a few myrmecolacid males and females are known: hosts of eight males and five females out of a total of 98 myrmecolacid species described so far (Kathirithamby 1998) (tables 1-3). A majority of the 98 species described are free-living males that have flown into traps. The hosts of only a few males are known as wandering stylopised ants are never encountered in the field, although ants are the most numerous of all known invertebrate species groups in any given ecosystem. Stylopised Hymenoptera or Homoptera, however, are frequently encountered, the reason being that, when stylopised, ants remain in the nest and only come out to the open just before the emergence of the male myrmecolacid. To investigate stylopisation in Formicidae, therefore, whole nests have to be brought into the laboratory and individual specimens dissected for the presence of the parasitic strepsipteran. The female myrmecolacid is found in situ in the host, and, unlike other strepsipterans, the female cephalothorax in this family lies close to the host cuticle, and is not easily visible. The neotenic, totally endoparasitic, females do not have any outstanding morphological characters either, so that separation at the species level is impossible.

**Female Stichotrema dallatorreanum** Hofeneder (Strepsiptera) is a parasite of Sexava nubila Stål, Segestes decoratus Redtenbacher and Segestidea novaeguineae (Brancsik) (Orthoptera: Tettigoniidae) in Oro Province, Papua New Guinea. S. decoratus, S. novae-
Figs 1-4. *Stichotrema dallatorreanum* Hofeneder, morphology.  — 1, Scanning Electron Micrograph of cephalothorax. Scale bar = 1 mm; 2, Cephalothorax. Scale bar = 0.5 mm; 3, Macrophotography of lateral view of neotenic female, after extrusion of cephalothorax (arrow) with apron (arrow head). Scale bar =5 mm; 4, 5 µm section (stained with Haemotoxylin) of apron in neotenic female with microvillate cells (arrow), (note irregular branches), ×15.