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Fungus-feeding phlaeothripine Thysanoptera in the genus *Holothrips* from Australia and New Caledonia, with a structurally similar new genus, *Holoengythrips*

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Abstract

Ten species of *Holothrips*, including seven new species, are recognized from Australia, with one further new species from New Caledonia. A new genus, *Holoengythrips*, is described from Australia, with nine new species that look similar to *Holothrips* species in having elongate maxillary stylets that are close together medially for the full length of the head. In contrast to species of *Holothrips*, the species of *Holoengythrips* are strongly sexually dimorphic, with antennal segment VIII separated from VII and the maxillary stylets more slender, and the males have a pore plate on the eighth sternite. *Holoengythrips* is therefore considered to be more closely related to *Hoplandrothrips*.

Key words: *Holothrips*, *Holoengythrips* **gen.n.**, fungus-feeding, maxillary stylets

Introduction

Holothrips is a worldwide genus of fungus-feeding thrips, with the vast majority of species from the tropics and subtropics (Okajima 1987). The stylets of these species are relatively broad, about 3 to 6 microns in diameter (Figs 1–9). This is wider than the 2 to 3 microns of typical Phlaeothripinae, but narrower than the 5 to 10 microns of Idolothripinae (Mound & Palmer 1983). The maxillary stylets of *Holothrips* species are particularly long, being retracted into the head to the level of the compound eyes and close together medially for the full length of the head. In some species these stylets are so long that there is a small recurved portion, or even a loop, within the prothorax. The purpose of this paper is to give an account of the 10 species of *Holothrips* that have been found in Australia, including seven new species together with a further new species from New Caledonia. During the course of these studies, a second genus has been found widespread mostly in eastern Australia with the species remarkably similar in general appearance to those of *Holothrips*. This new genus is therefore described here, together with a further nine new species, but reasons are provided for considering this group of Australian species as probably only distantly related to *Holothrips* species.

Distribution and collecting methods

The distribution patterns of some of the species considered here are rather surprising. One of the smallest, wingless, species has been taken both from Tasmania and Cairns, and a similar species from southern New South Wales and Brisbane. Apparently, the wind systems in eastern Australia can effect long-distance dispersal of some thrips species, particularly those fungus-feeding species that live in relatively moist forest. Curiously, most of the larger species of *Holothrips* discussed here have more restricted distributions, with some species found only in dry sclerophyll *Eucalyptus* forests of southern Australia but others only in the rainforests of more northern areas. Two very different collecting methods have been used to acquire the species discussed here. The most commonly used

flattened, recurved apices; mouth cone not extending to ferna. Antennal segment III with 3 sensoria, IV with 4; VI–VII with parallel-sided pedicel, VIII slightly constricted at base. Pronotum transverse, with median apodeme but no sculpture, 4 pairs of major blunt to weakly capitate setae, am minute. Fore femora slightly swollen, fore tibia with minute ventro-apical tubercle, also with subapical rounded tubercle bearing a seta on inner dorsal margin; fore tarsal tooth as long as tarsal width; fore coxae with short stout setae. Mesonotal setae small, mesothoracic spiracular area protruding laterally (Fig. 49); metanotum with one pair of small major setae, without sculpture medially. Fore wing lobe small, without major setae. Prosternal ferna scarcely meeting medially; mesoeusternal margin narrow, mesopresternum of three small sclerites; metathoracic sternopleural sutures weak. Pelta with rounded anterior margin and short lateral wings; tergites weakly sculptured, with two pairs of short straight wing-retaining setae; major setae bluntly pointed to weakly capitate; tergite IX setae S1 bluntly pointed, setae iS longer than short stout S2. Anal setae shorter than tube. Sternites with one row of about 12 small discal setae; sternites III–IV with paired areas of scarcely visible reticulation; VIII with transverse pore plate across middle of sclerite (Fig. 70).

Measurements (holotype male in microns). Body length 2000. Head, length 270; median width 170; postocular setae 105. Pronotum, length 135; median width 250; major setae: am 6, aa 50, ml 35, epim 50, pa 30. Fore wing lobe 35. Tergite IX setae: 100, iS 50, S2 30. Tube length 135. Antennal segments III–VIII length 70, 60, 55, 50, 45, 30.

Female microptera: Similar to male in colour and structure except, fore tarsal tooth absent; postocular setae capitate and straight; coxal stout setae smaller; mesoeusternal margin transverse; tergite IX setae S1 and S2 bluntly pointed; sternites without reticulate areas or pore plate.

Measurements (paratype female in microns). Body length 2200. Tergite IX setae: S1 85, iS 60, S2 100.

Material studied. Holotype male microptera, **Queensland**, Mt Bartle Frere, from bark spray, 19.xi.2009 (Monteith & Turco).

Paratypes: 4 female micropterae taken with holotype.

Non-paratype: Bulburin, [120km NW of Bundaberg], 1 female macroptera, from bark spray, 11.vii.2012.

Comments. The macropterous female listed from Bulburin is possibly this species, but has a very tiny fore tarsal tooth, and the pelta lacks posterolateral wings.

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