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Review of the Australian *Apiocera minor* Norris species-group (Diptera: Apioceridae) with a revised key to species

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Abstract

The Australian *Apiocera minor* species-group is reviewed. We provide a key to the species groups of Paramonov (1953) in *Apiocera* Westwood and all described species in the *A. minor* species group: *A. mackerrasi* Paramonov, *A. cerata* Paramonov, *A. australis* Paramonov, *A. newmani* Norris, *A. minor* Norris, *A. vespera* Paramonov, *A. macrocerata* **sp. n.**, *A. evansi* **sp. n.**, *A. rieki* **sp. n.**, *A. collessi* **sp. n.**, *A. mullewa* **sp. n.** and *A. microeremia* **sp. n.** This brings the total number of species in the group to 12. Habitus, wing, abdomen and genitalic images and distribution maps are provided. All species in the *A.minor* group are diagnosed. Our studies have revealed a number of undescribed species in the ANIC that are represented by few and/or poorly preserved specimens.

Key words: Asiloidea, *Apiocera*, Apioceridae, *A. macrocerata* **sp. n.**, *A. evansi* **sp. n.**, *A. rieki* **sp. n.**, *A. collessi* **sp. n.**, *A. mullewa* **sp. n.** and *A. microeremia* **sp. n.**

Introduction

Apioceridae are a family of relatively large, nectar-feeding flies often associated with arid and semi-arid habitats. Larvae are often found in dry sandy soil, sometimes in coastal dunes (English 1947; Daniels 1989). Phylogenetically, current morphological and molecular evidence suggest that apiocerids are closely related to Mydidae and Asilidae (Woodley 1989; Yeates & Irwin 1996; Irwin and Wiegmann 2001; Dikow 2009; Wiegmann *et al*. 2011). The distribution of the family is unusual, with most (130) species being found in western North America (Cazier 1982) and Australia (Yeates & Irwin 1996), four in South America (Artigas 1970) and three also in southern Africa (Yeates 1994). The Australian fauna was last revised by Paramonov (1953, 1961), who showed that there is considerable species diversity in the semi-arid woodlands of Western Australia in particular.

The genus *Apiocera* Westwood is divided into four monophyletic subgenera, the nominal subgenus *Apiocera* for the Australian species, *Pyrocera* Yeates & Irwin for the North American and *Ripidosyrma* Hermann and *Anypenus* Philippi for the South African and South American species, respectively (Yeates & Irwin 1996). The Australian *Apiocera* species were divided into 13 species groups by Paramonov (1953). Many specimens have accumulated in Australian collections since that time, and many of these specimens represent new species. The *A. minor* group is here reviewed, with an addition of six new species; *A. macrocerata* **sp. n.**, *A. evansi* **sp. n.**, *A. collessi* **sp. n.**, *A. rieki* **sp. n.**, *A. mullewa* **sp. n.** and *A. microeremia* **sp. n.** We present a key to species-groups, modified from Paramonov (1953), that clearly distinguishes the *A. minor* group, as well as a key to all the species of the *A. minor* group. Wings, abdominal patterns and male genitalia of the new species are illustrated and their distributions are mapped.

Methods

In total 201 specimens were examined, sourced from the Australian National Insect Collection (ANIC), the Australian Museum (AM), the Western Australian Museum (WAM) and the National Museum of Natural History,

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