

# Revision of the Australian bee subgenus *Leioproctus* (*Euryglossidia*) Cockerell, 1910 (Hymenoptera: Colletidae: Neopasiphaeinae)

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**ABSTRACT.** The subgenus *Leioproctus* (*Euryglossidia*) is a large group of Australian Neopasiphaeinae bees in need of revision. Forty-five new species are described, bringing the number of recognised names to 60. Four new synonymies are proposed, one species is transferred to *Leioproctus* (*Colletellus*) and one remains *species inquirenda*. No change is required in the diagnostic characters of the group, which is recognised by the presence of two submarginal cells in the forewing and a short jugal lobe on the hind wing. The new species demonstrate continuous character variation from rough to polished integument, iridescent to non-iridescent colour, sparse to close scopal hair of females without distinct breaks between subgroups. Detailed molecular investigation will be required before further subdivision is contemplated. Illustrations of diagnostic characters and identification keys are included.

## Introduction

Australian bees included in the genus *Leioproctus* Smith, 1853 (Hymenoptera: Colletidae: Neopasiphaeinae) have long been recognised as a paraphyletic group (Michener, 2007; Almeida, 2008), though there have been different views about how the problem might be resolved (Almeida *et al.*, 2012; Maynard, 2013; Houston, 2018; Engel & Gonzalez, 2022). Michener (2007) was cautious about premature regrouping because he was aware that there are many undescribed species and many of the described species are known from only one sex. Proposals have been made for splitting the group into smaller genera based on molecular cladistics (Almeida *et al.*, 2012) or morphological novelties (Engel & Gonzalez, 2022), but new insights are expected to arise as species without obvious close relatives are still being discovered (Batley & Houston, 2023).

The name *Euryglossidia* was initially proposed for two colletid species with two rather than three submarginal cells

in the forewing. Michener (1965) added further species, reduced the group to a subgenus of *Leioproctus* and refined the definition by adding the additional character of a short jugal lobe on the hind wing to separate it from another subgenus, *L.* (*Colletellus*) Michener, 1965. Although Michener (1965) noted other features present in many species of *L.* (*Euryglossidia*), none was diagnostic. The subgenus *L.* (*Filiglossa*) shares the diagnostic characters of *L.* (*Euryglossidia*) but has, in addition, modified mouthparts with long hairs on the galea and filamentous labial palpi (Michener, 2007). More recently, Leijs *et al.* (2018) revised the subgenus *Colletellus* and added many additional species. The length of the jugal lobe of the hind wing was confirmed as a reliable character for subgeneric diagnosis of *Colletellus*. The aims of this revision were to provide names for a large number of undescribed *Euryglossidia* species and clarify morphological variation within the group, which could guide the choice of targets for future molecular study.

**Keywords:** Taxonomy, new species, new synonymies, new status

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