

## Revision of the Australian Bee Genus *Trichocolletes* Cockerell (Hymenoptera: Colletidae: Paracolletini)

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**ABSTRACT.** The endemic Australian bee genus *Trichocolletes* is revised. Forty species are recognised, including twenty-three new species: *Trichocolletes aeratus*, *T. albigenae*, *T. avialis*, *T. brachytomus*, *T. brunilabrum*, *T. capillosus*, *T. centralis*, *T. dundasensis*, *T. fuscus*, *T. gelasinus*, *T. grandis*, *T. lacaris*, *T. leucogenys*, *T. luteorufus*, *T. macrognathus*, *T. micans*, *T. nitens*, *T. orientalis*, *T. platyprosopis*, *T. serotinus*, *T. simus*, *T. soror* and *T. tuberatus*. Four new synonymies are proposed: *Paracolletes marginatus lucidus* Cockerell, 1929 = *T. chrysostomus* (Cockerell, 1929); *T. daviesiae* Rayment, 1931 = *T. venustus* (Smith, 1862); *T. marginatulus* Michener, 1965 = *T. sericeus* (Smith, 1862); *T. nigroclypeatus* Rayment, 1929 = *T. venustus* (Smith, 1862). *Trichocolletes rufus* (Rayment, 1930) is moved to *Leioproctus* and *T. rufopilosus* (Rayment, 1935) to *Anthoglossa*. Descriptions are given for new species and redescriptions for species described before 1965, including first descriptions of males of *T. aureotinctus* (Cockerell), *T. burnsi* Michener, *T. latifrons* (Cockerell) and *T. maximus* (Cockerell) and the females of *T. dowerinensis* Rayment and *T. rufibasis* (Cockerell). Lectotypes are designated for *Lamprocolletes venustus* Smith and *Anthoglossa plumata* Smith. Keys to species are provided for both sexes, as are distribution maps and a summary of recorded floral visitation.

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The monobasic genus *Trichocolletes* (Cockerell, 1912) was erected for the species *Lamprocolletes venustus* Smith by virtue of its conspicuously hairy eyes. Rayment (1929, 1931) added four additional species so that Cockerell's 1934 survey of the family Colletidae in Australia, listed five names in the genus *Trichocolletes*. When Michener (1965) revised the genera of Australian bees, he recognized that species without hairy eyes, previously placed in *Anthoglossa* and *Paracolletes*, belonged in a more broadly defined genus. At the same time Michener created a separate subgenus for the species *T. pulcherrimus* Michener, a decision he recently suggested (Michener, 2007) might merit reexamination. Since 1965, two new species have been added (Houston, 1990), but there has been no revision of the genus. This is, therefore, the first

species-level revision of the genus *Trichocolletes*.

A recent molecular phylogeny of the family Colletidae (Almeida & Danforth, 2009) concluded that the Australian and South American genera traditionally included in the tribe Paracolletini (Michener, 2007), excluding *Callomelitta* and *Paracolletes s. str.*, form a monophyletic group and it has been proposed (Almeida *et al.*, 2012) that the name Neopasiphaeinae should be used for this group. The phylogenetic analysis suggested that the genus *Anthoglossa* is sister to all other Neopasiphaeinae and the genus *Trichocolletes* is, in turn, sister to all Neopasiphaeinae other than *Anthoglossa*. Until morphological clarification of the status of *Paracolletes* is available, we have opted to follow Michener's (2007) family-level names.

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