



<http://dx.doi.org/10.11646/zootaxa.3895.4.4>

<http://zoobank.org/urn:lsid:zoobank.org:pub:3B26216E-84B7-4B7A-AAD8-B292E9486FA2>

Revision of the Australian species of *Gonatopus* group 5 (Hymenoptera: Dryinidae), with description of a new species from the Society Islands, French Polynesia

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Abstract

Eleven Australian species of *Gonatopus* Ljungh, 1810 group 5 are revised. A new species is described from the Leeward Islands: *G. perraulti* Olmi, Marletta & Guglielmino, **sp. nov.** (French Polynesia: Society Islands). New combination is proposed for *G. levis* (Olmi, 1991), **comb. nov.** (from *Dicondylus*). A new key to the Australian species of *Gonatopus* group 5 is presented.

Key words: Gonatopodinae, *Gonatopus perraulti*, key, parasitoid, Delphacidae, Auchenorrhyncha, Pacific Ocean islands, French Polynesia, Society Islands

Introduction

Dryinidae (Hymenoptera: Chrysidoidea) are parasitoids of Auchenorrhyncha (Hemiptera) (Guglielmino *et al.* 2013). One of the most common genera is *Gonatopus* Ljungh, 1810, known to parasitize Acanaloniidae, Cicadellidae (except Typhlocybinae, Idiocerinae, Macropsinae), Delphacidae, Flatidae, Issidae, Lophopidae, and Tropiduchidae (Guglielmino *et al.* 2013).

The most part of the *Gonatopus* species are characterized for having apterous females and macropterous males. Because of the female apterism, the main responsables of species diffusion are the parasitized macropterous hosts (Xu *et al.* 2013). In some cases, they can migrate for long distances crossing the oceans (Mita *et al.* 2012) and transporting cysts containing larvae of dryinids.

The Australian species of *Gonatopus* were studied mainly by Ashmead (1901), Perkins (1905, 1906a, b, 1907, 1912), Fouts (1935), Gourlay (1954) and more recently by Olmi (1984, 1987, 1990, 1991, 1993, 1998, 2001, 2005, 2007a) and Olmi & Villemant (2009).

Olmi (1993), followed by Xu *et al.* (2013), divided the genus *Gonatopus* into 11 groups. More recently, Olmi & Virla (2014) added a twelfth group. The above groups are based on female characters, mainly the palpal formula and shape of pronotum and enlarged claw. Males cannot be divided into groups. Species of group 5 (formerly attributed to the genus *Dicondylus* Haliday in Curtis, 1829, now considered junior synonym of *Gonatopus* (Olmi 1993)) have apterous females with enlarged claw provided of one large subapical tooth; pronotum not crossed by a deep transverse furrow; labial palpi 2-segmented. Australian species of group 5 were studied mainly by Ashmead (1901), Perkins (1906a), Fouts (1935), Olmi (1984, 1990, 1991) and Olmi & Villemant (2009).

Thanks to the precious information of Mr Thibault Ramage (Concarneau, France), in 2014 a new species of *Gonatopus* group 5 from the Leeward Islands has been found in George Perrault's collection, now housed in the Museum of Natural History of Paris, France. It is described in this paper. This discovery has provided the opportunity to review and update the entire group 5 of Australian species.

Species of *Gonatopus* group 5 usually are not endemic. Though the females are apterous, they can parasitize macropterous hosts transporting their cysts very far. For example, in the Palaearctic region the common *Gonatopus bicolor* (Haliday in Curtis, 1828) is spread from United Kingdom to the Kuril Archipelago (Russia) (Olmí 1999). In the Neotropical region, *Gonatopus nigrithorax* (Ogloblin, 1953) has been collected in Peru and in the Juan Fernandez Islands, situated in the Pacific Ocean about 670 km off the coast of Chile (Olmí & Virla 2014). However, in the Australian region, there are *Gonatopus* species of group 5 apparently endemic. Apart *G. flavifemur*, broadly spread in the Oriental region from India to Japan and reaching also Queensland (Australia), and *G. levis*, known only in Australian Capital Territory probably for lack of research, the other species are apparently endemic in very far islands of the Pacific Ocean: *G. alpinus* (Gourlay, 1954), in New Zealand; *G. dubius* (Olmí, 1984) and *G. kiefferi* (Perkins, 1906), in the Fiji Islands; *G. oceanicus* (Olmí, 1984), in Lord Howe Island (Australia); *G. perkinsi* Ashmead, 1901, in the Hawaii Islands; *G. perraulti* Olmí, Marletta & Guglielmino **sp. nov.** in Huahine (Leeward Islands, Society Islands); *G. primitivus* (Olmí, 1984) in Vanuatu; *G. rufus* (Fouts, 1935), in the Marquesas Islands; *G. tahitianus* (Olmí, 1991), in Tahiti (Windward Islands, Society Islands). The reason of the above apparent endemism can be related to the lack of research or the large distance among the islands, that makes difficult the transport of cysts by macropterous hosts, in spite of well known cases of long distance migrations in the Oriental and Eastern Palaearctic regions (Mita *et al.* 2012).

Acknowledgements

Many thanks to Miss Agnièle Touret-Alby (Museum of Natural History, Paris, France) for sending on loan the specimen of *Gonatopus* described as new species (*G. perraulti*). We are indebted also to all other curators sending on loan the specimens studied in the present paper. We are particularly grateful to Mr Thibault Ramage (Concarneau, France), for his precious information about George Perrault's collection. The authors are particularly grateful to the subject editor, Arkadiy S. Lelej, and an anonymous reviewer for their valuable suggestions and comments that substantially improved this contribution.

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