



Species of *Euglossa* (*Glossura*) and *E. (Glossuropoda)* (Hymenoptera: Apidae: Euglossina) occurring in the Amazon, including new records for Brazil

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Abstract

Species of *Glossura* Cockerell, 1917 (genus *Euglossa* Latreille, 1802) are among the most common orchid-bees in inventories carried out in the Brazilian Amazon. Nevertheless, recent re-definitions of the subgenus, as well as recently described species, made recognition of individual species more difficult. In this study we review all species belonging to the subgenus occurring in the Amazon Basin, as well as those species belonging to the closely related subgenus *Glossuropoda* Moure, 1989, and report new records of *Euglossa (Glossura) lugubris* Roubik, 2004 and *Euglossa (Glossura) occidentalis* Roubik, 2004 for Brazil. Additionally, an illustrated identification key for all fifteen species of both subgenera recorded for the Amazon Basin is provided.

Key words: euglossine bees, *Glossura*, *Glossuropoda*, orchid bees, taxonomy

Introduction

After the discovery of the attractiveness of male orchid bees by floral fragrances (Vogel 1966, Dodson *et al.* 1969) these bees became a favorite in ecological studies in the Neotropics (*e.g.* Janzen 1971, Ackerman *et al.* 1982, Roubik & Ackerman 1987, Nemésio & Silveira 2006a, b, 2010), resulting in an increase of our knowledge of orchid-bee diversity in nature, with recognition of many previously unknown species (*e.g.* Moure 1968, 1969, 1970, 1989, 1996, Kimsey 1977, Dressler 1978a, 1982a, b, c, Rebêlo & Moure 1996, Roubik 2004, Ramírez 2005, 2006, Nemésio 2006, 2007, 2009a, 2010, Bembé 2007, 2008, Nemésio & Bembé 2008). The first raise of species recognition rapidly led taxonomists to propose new arrangements to accommodate the ever growing number of known species (*e.g.* Dressler 1978a, b, 1982a, b, c, Kimsey 1979, 1982, Moure 1989). More recently, however, this effort has received two different approaches in an attempt to establish the actual identity of the recognized species and the relationships among them: alpha-taxonomy and solution of the taxonomic impediments (*e.g.* Nemésio 2009a, b) and phylogenetic studies (*e.g.* Cameron 2004, Michel-Salzat *et al.* 2004, Oliveira 2006, Bembé 2007, Ramírez *et al.* 2010).

The genus *Euglossa* Latreille, 1802 is the most speciose group of orchid bees and, also, one of the most problematic concerning its taxonomy, since several species are very similar and taxonomists found few reliable relevant taxonomic characters, in particular for the female sex. Six subgenera have been traditionally recognized within *Euglossa*, but the recent study by Ramírez *et al.* (2010) suggests that two of them are paraphyletic: *Glossura* Cockerell, 1917 and *Glossurella* Dressler, 1982b. If the results found by Ramírez *et al.* (2010) are correct, the paraphyly of *Glossurella* remains as a matter to be further investigated, but *Glossura* (*sensu* Moure *et al.* 2007) would become a monophyletic group by simply synonymizing *Glossuropoda* Moure, 1989 under *Glossura*.

Species belonging to *Glossura* and *Glossuropoda* were recently reviewed by Roubik (2004), who provided diagnoses to all species. Nevertheless, Moure *et al.* (2007) transferred some species from *Glossurella* to *Glossura*, a position acknowledged by Ramírez *et al.* (2010) and followed here, but these species were not considered as