



## Four new species of *Paraclius* Loew (Diptera: Dolichopodidae) from the Brazilian Atlantic Forest, and notes on the systematic position of *Cheiromyia* Dyte

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### Abstract

Four new species of *Paraclius* Loew from the Brazilian Atlantic Forest are described and illustrated: *P. ampliatheratus*, **sp. nov.**, *P. parenti*, **sp. nov.**, *P. sagittatus*, **sp. nov.**, and *P. dicrophallus*, **sp. nov.** The condition of their enlarged sperm pump, also seen in the Neotropical genus *Cheiromyia* Dyte, is briefly discussed. Comments on the phylogenetic position of *Cheiromyia* are presented in light of new data from female terminalia of that genus.

**Key words:** *Paraclius*, *Cheiromyia*, Diptera, Dolichopodidae, Dolichopodinae, Atlantic Forest, taxonomy

### Introduction

The Dolichopodidae have about 6,870 described species in the world, of which 1,195 are Neotropical (Yang *et al.* 2006). The Dolichopodinae are one of the most diverse dolichopodid subfamilies, recognized by the following combination of features: dorsal surface of scape setose, mid and hind femora bearing one or more anterior preapical bristles, male tergite 6 generally bare and hypopygium pedunculate (Brooks 2005). Dolichopodinae includes 33 genera and 1,750 described living species (Yang *et al.* 2006), representing about one fourth of the entire family diversity. Of the world dolichopodines only 201 species are known from the neotropics, placed in eight genera. These numbers suggest the need for further study of the subfamily in the region in order to gain a more realistic understanding of its biodiversity.

*Paraclius* Loew, with worldwide distribution, is one of the most speciose Neotropical genera of Dolichopodinae, with 55 described species (Yang *et al.* 2006). Nevertheless, only a smaller part of this diversity (18 species) is known from South America, most of the described species of the genus in the region being known from Central America. There are six species known from east South America (including northern Argentina, Uruguay, and Paraguay), only two of which occur in the Atlantic Forest, so this represents a considerable increase of the described diversity of the genus in this area of the neotropics.

The current definition of the genus, however, as made clear by Brooks (2005), is based on homoplastic and plesiomorphic features, so it most probably constitutes a polyphyletic assemblage of species. The division of this assemblage into natural groups requires a world-based revision of the genus, with detailed study especially of hypopygial characters. Nevertheless, some species-groups have been proposed within the genus based on putative synapomorphies (see Bickel & Sinclair 1997; Brooks 2005).

This paper contributes to the knowledge of the diversity of Neotropical Dolichopodinae with the description of four new species of *Paraclius* from the Brazilian Atlantic Forest. These new species are of particular interest because they show some notable male genitalic similarities with the Neotropical genus