



Revision of the genus *Macrostomus* Wiedemann (Diptera, Empididae, Empidinae). III. The *limbipennis* species-group

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Abstract

All species of *Macrostomus* Wiedemann allied with *Macrostomus limbipennis* (Bezzi), are treated in the *limbipennis* species-group, which is defined on the basis of characters of the male and female terminalia, and a relatively wide female frons. Three currently recognized species and two new species are included, namely *M. inflatus*, **sp. nov.** from Brazil (Federal District), *M. limbipennis* (Bezzi, 1909), *M. nigriventris* (Macquart, 1846), *M. nitidus*, **sp. nov.** from Brazil (Goiás and Mato Grosso states) and *M. penai* Rafael & Cumming, 2006. All primary types were examined and a lectotype is designated for *M. limbipennis* (Bezzi, 1909). A key to the species is presented along with the geographical distribution pattern exhibited by the *limbipennis* species-group.

Key words: Neotropics, Amazon Basin, Atlantic Forest, Empididae, *Macrostomus*, taxonomy

Introduction

The genus *Macrostomus* Wiedemann currently includes 29 species, which are mostly distributed in the Amazon Basin (Rafael & Cumming 2004, 2006, 2009, 2010). This paper is the third in a series by the authors that will treat each of the six species-groups in the genus. The first paper (Rafael & Cumming 2009) dealt with the nine species in the *M. ferrugineus* species-group and the second paper (Rafael & Cumming 2010) dealt with the seven species belonging to the *M. pictipennis* species-group. Here we treat the species allied with *Macrostomus limbipennis* (Bezzi), redescribing three species and describing two new species in the *M. limbipennis* species-group, which is diagnosed herein. Revision of the remaining species of *Macrostomus*, including descriptions of several new species, will be published in the near future, individually for the three remaining species-groups. The last paper in the series will include a key to the species-groups and a phylogenetic analysis.

The *M. limbipennis* species-group appears to be a monophyletic lineage based on males with a short tergite 8 and distal sinus, cerci divided into an anterior and posterior cercus with a distinct median membranous lobe, the anterior cercus wide or narrowly connected anteriorly and extensively connected medially by a large flat cercal expansion, and on females that have a frons distinctly wider than the anterior ocellus, and a genital fork with short to indistinct lateral arms. A key to the included species for males is presented. The species-group is distributed throughout a large area surrounded by the Southwestern Amazonia region (SWAm), Southeast Amazonia region (SEAm) and Atlantic Forest region as defined by Amorim and Pires (1996) and Amorim (2009), and depicted in Rafael and Cumming (2009, 2010).

Material and methods

This study is based on the examination of specimens housed in the following institutions: American Museum of Natural History (AMNH), New York, USA; California Academy of Sciences, (CAS), San Francisco, USA; Cana-