



## Review of *Xenochironomus* Kieffer, 1921 (Diptera: Chironomidae) with description of six new species

LÍVIA MARIA FUSARI<sup>1,4</sup>, FABIO DE OLIVEIRA ROQUE<sup>2</sup>, NEUSA HAMADA<sup>3</sup>

<sup>1</sup>Universidade de São Paulo, Museu de Zoologia—MZUSP, Laboratório de Diptera, São Paulo, SP, Brazil.

E-mail: liviafusari@gmail.com

<sup>2</sup>Universidade Federal do Mato Grosso do Sul —UFMS, Campo Grande, MS, Brazil. E-mail: roque.eco@gmail.com

<sup>3</sup>Instituto Nacional de Pesquisas da Amazônia—INPA, Coordenação de Biodiversidade- CBio, Manaus, AM, Brazil.

E-mail: nhamada@inpa.gov.br

<sup>4</sup>Corresponding author

### Abstract

The genus *Xenochironomus* Kieffer is reviewed. Five new species are described from Brazil, *X. alaidae*, *X. amazonensis* and *X. martini* as male; *X. grini* and *X. mendesi* as male, pupa and larva, and *X. ethiopsensis* from Ethiopia is described as adult male. *X. canterburyensis* (Freeman) is redescribed as male, pupa and larva; *X. trochanteratus* (Thompson), *X. trisetosus* (Kieffer), *X. ugandae* (Goetghebuer) and *X. tuberosus* Wang as males; notes on *X. xenolabis* (Kieffer), *X. flaviventris* (Kieffer), *X. longicrus* (Kieffer), *X. lacertus* Dutta et Chaudhuri and *X. ceciliae* Roque et Trivinho-Strixino are also given. The species *X. nigricaudus* Hashimoto is recognized as *nomen dubium*. Keys to males, pupae and larvae are presented.

**Key words:** Diptera, Chironomidae, *Xenochironomus*, new species, biodiversity, ecology, Porifera

### Introduction

Chironomidae larvae in freshwater sponges have been studied by several authors (Steffan 1967; Roback 1968; Tokeshi 1993, 1995; Matteson & Jacobi 1980; Melão & Rocha 1996; Roque *et al.* 2004, 2010; Fusari *et al.* 2008, 2009, 2012). Although representatives of many genera of Chironomidae were found in sponges, the associations were recognized only in some species of *Xenochironomus* Kieffer, 1921, *Demeijerea* Kruseman, 1933 and *Oukuriella* Epler, 1986.

The genus *Xenochironomus* was proposed by Kieffer in 1921, with *Xenochironomus xenolabis* (Kieffer, 1916) as type species. Roback (1963) recognized two subgenera [*X. (Xenochironomus)* and *X. (Anceus)*] and later Roback (1980) renamed *X. (Anceus)* as *X. (Axarus)* by junior homonymy. Pinder and Reiss (1983) elevated *Axarus* to the generic category.

*Xenochironomus* has a wide zoogeographical distribution (Ashe *et al.* 1987; Cranston *et al.* 1989; Spies & Reiss 1996). Eleven species are recognized in the genus, however five of which have insufficient descriptions and, in some cases, no illustrations: *X. flaviventris* (Kieffer, 1911), *X. longicrus* (Kieffer, 1911), *X. trochanteratus* (Thomson, 1969), *X. trisetosus* (Kieffer, 1922) and *X. ugandae* (Goetghebuer, 1936), and types of species *X. nigricaudus* Hashimoto, 1981 were reported as lost.

The immatures of *Xenochironomus* can be found in freshwater sponges with the exception of *Xenochironomus canterburyensis* (Freeman, 1959), which has been reported in association with Mollusca (Forsyth & McCallum 1978b). According to Roque *et al.* (2010), chironomids associated with freshwater sponges are a priority group for taxonomic and ecological studies and for conservation strategies due to many red-listed freshwater sponges.

Over the last decade, we have surveyed insects living in freshwater sponges in several biomes in Brazil, which has resulted in the description of one *Xenochironomus* species (Roque & Trivinho-Strixino 2005), two *Oukuriella* species (Fusari *et al.* 2008, 2009) and one *Ablabesmyia* species (Fusari *et al.* 2012). Here, we revise the genus