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Revision of *Beardius* Reiss *et* Sublette, 1985 (Diptera: Chironomidae), with the description of twenty new species

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Abstract

The genus *Beardius* Reiss *et* Sublette, 1985 is revised and twenty new species, *Beardius abbadi* sp. n., *B. arawak* sp. n., *B. bizzoii* sp. n., *B. bucephalus* sp. n., *B. curticaudatus* sp. n., *B. dioi* sp. n., *B. hirtidorsum* sp. n., *B. krenak* sp. n., *B. kumadueni* sp. n., *B. longicaudatus* sp. n., *B. mileneae* sp. n., *B. nebularius* sp. n., *B. neusae* sp. n., *B. novoairensis* sp. n., *B. phoenix* sp. n., *B. sapiranga* sp. n., *B. tupinamba* sp. n., *B. vanessae* sp. n., and *B. yperoig* sp. n. from Brazil and *Beardius chapala* sp. n. from Mexico are described and figured. Further, the female, pupa and larva of *B. urupeatan* Pinho, Mendes *et* Andersen and the female and larva of *B. crithinae* Trivinho-Strixino *et* Siqueira are described, and new records of Brazilian species are provided. Emended diagnoses for all stages and sexes are given. The phylogeny of the genus is outlined and seven tentative species groups, the *parvus* group, the *truncatus* group, the *tupinamba* group, the *triangulatus* group, the *bucephalus* group, the *xylophilus* group, and the *roquei* group, are proposed. Keys to males, females, pupae and larvae are provided.

Key words: Diptera, Chironomidae, *Beardius*, systematics, new species, Brazil

Introduction

The genus *Beardius* was erected by Reiss & Sublette (1985) based on three new species, *B. parvus* from Venezuela and Brazil, *B. breviculus* from Panama, and *B. truncatus* from Texas, U.S.A. Andersen & Sæther (1996) described *B. aciculatus* from Costa Rica and Mexico, and *B. lingulatus* and *B. triangulatus* from Costa Rica. Jacobsen & Perry (2000) revised the genus, and described *B. reissi* from Florida, U.S.A. Later, six new Brazilian species have been added. Trivinho-Strixino & Strixino (2000) described *B. phytophilus* and *B. xylophilus*; Trivinho-Strixino & Siqueira (2007) described *B. crithinae* and *B. roquei*; and finally Pinho *et al.* (2009) described *B. fittkai* and *B. urupeatan*. The larvae are associated with macrophytes or submerged wood in both standing and flowing waters (Jacobsen & Perry 2000; Trivinho-Strixino & Strixino 2000).

During the last few years, by combination of sorting through unidentified museum material and fieldwork in Brazil, we have encountered twenty new Neotropical *Beardius* species, all described below. The genus thus comprises 33 species, distributed in the Neotropical and southern Nearctic regions. Emended diagnoses for all stages and sexes are given, the phylogeny of the genus is outlined and seven tentative species groups are proposed. Keys to the males, females, pupae and larvae are provided.

Material and methods

The specimens were mounted on slides in Euparal following the procedure outlined by Sæther (1969). The general terminology and abbreviations follow Sæther (1980). Measurements are given as ranges, followed by the mean when more than three specimens were measured, followed by the number of specimens measured in parenthesis. Types will be housed in the following collections, as stated in each description:

INPA—Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil.

MZSP—Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil.

MZUFBA—Museu de Zoologia da Universidade Federal da Bahia, Salvador, Brazil.

ZMBN—Department of Natural History, University Museum of Bergen, Norway.

ZSM—Zoologische Staatssammlung München, Munich, Germany.

Beardius Reiss *et* Sublette

Beardius Reiss *et* Sublette, 1985: 175.

Beardius Reiss *et* Sublette; Andersen & Sæther (1996: 34), Jacobsen & Perry (2000: 130).

Type species: *Beardius parvus* Reiss *et* Sublette, 1985: 183, by original designation.

Other included species: *Beardius abbadi* sp. n.; *B. aciculatus* Andersen *et* Sæther, 1996; *B. arawak* sp. n.; *B. bizzoii* sp. n.; *B. breviculus* Reiss *et* Sublette, 1985; *B. bucephalus* sp. n.; *B. chapala* sp. n.; *B. crithinae* Trivinho-

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