



## Four new species of the microcaddisfly genus *Alisotrichia* Flint (Trichoptera: Hydroptilidae) from southeastern Brazil

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### Abstract

*Alisotrichia* Flint, 1964 is an exclusively New World genus of microcaddisflies (Hydroptilidae), currently assigned to Leucotrichiini. Until now, this genus contained 51 species, of which only 1 has been described from Brazil. In this paper, 4 new species are described from Southern Brazil, 3 in the *A. orophila* Group (*A. holzenthali* sp. nov., *A. macae* sp. nov., and *A. nessimiani* sp. nov.) and one in the *A. hirusopsis* Group (*A. ubatuba* sp. nov.). The new species are separated by features of the terminal abdominal segments and structures of the male genitalia.

**Key words:** microcaddisflies, *Alisotrichia holzenthali* sp. nov., *Alisotrichia ubatuba* sp. nov., *Alisotrichia macae* sp. nov., *Alisotrichia nessimiani* sp. nov., Atlantic Forest

### Introduction

The genus *Alisotrichia* Flint, 1964, is currently assigned to the exclusively New World tribe Leucotrichiini. Although originally described in this tribe, the genus shares some features with Stactobiini, e.g., the narrow and almost rectangular metascutellum, and the lack of a median complex on the phallus, therefore Harris & Holzenthal (1993) moved *Alisotrichia* to tribe Stactobiini. However, Bowles *et al.* (1999) moved the genus back to Leucotrichiini, based particularly on larval aspects. Because larvae of both Leucotrichiini and Stactobiini have morphological adaptations for madicolous and hygropetric habitats, it is difficult to recognize accurately the apomorphic characters of each. Only a rigorous phylogenetic analysis, using multiple data, can resolve this problem.

Harris & Holzenthal (1993) provided a phylogenetic analysis for *Alisotrichia*, dividing the genus into 8 groups, 3 of which were elevated to generic status (the *A. blantoni* Group became *Mejicanotrichia* Harris & Holzenthal, 1997; the *A. dominicensis* Group became *Cerasmatrachia* Flint, Harris & Botosaneanu, 1994; and the *A. quemada* Group became *Scelobotrichia* Harris & Bueno-Soria, 1993). Currently, *Alisotrichia* contains 51 described species, occurring from the United States to Argentina, with only 1 species previously known from Brazil, *Alisotrichia cacaulandia* Harris & Flint, 2002, from Rondônia State, in the northern region. In this paper, 4 new species are described from southeastern Brazil: 1 from Minas Gerais (*Alisotrichia holzenthali* sp. nov.), 1 from São Paulo (*A. ubatuba* sp. nov.), and 2 from Rio de Janeiro (*A. macae* sp. nov. and *A. nessimiani* sp. nov.).

### Material and methods

Specimens were collected manually on rocks and vegetation near water or with light traps and preserved in 80% ethanol. To observe genital structures, the abdomen was removed and cleared in a solution of 10% KOH heated for a few minutes. Pencil sketches were made using a compound microscope equipped with camera lucida, and then scanned and placed in an Adobe Illustrator (v. 13.0, Adobe Systems, Inc.) document. In this software, the pencil sketches were used to trace graphic vectors. The terminology used follows that presented by Marshall (1979) and Harris & Flint (2002).