A new species of the genus *Alterosa* (Trichoptera: Philopotaminae) from Southeastern Brazil

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Abstract: Philopotamidae is a large caddisfly family with 20 extant genera comprising about 1 000 described species worldwide. *Alterosa* contains 22 described species distributed in South and Southeastern Brazil. Adults of the genus are very similar in general structure, but are remarkable for their wide variation in male genitalic morphology. The specimens were collected with Pennsylvania light traps and preserved in 80% ethanol. *Alterosa nessimiani* sp. nov. is described and figured from male specimens collected in streams of Rio de Janeiro state, Southeastern Brazil. The new species is closely related to *A. jordaensis* Blahnik 2005, from which it can be distinguished by the presence of two spines on the intermediate appendages and by the shape of tergum X. Rev. Biol. Trop. 60 (2): 577-580. Epub 2012 June 01.

Key words: *Alterosa nessimiani*, Atlantic Forest, caddisfly, Neotropical region, taxonomy.

Philopotamidae is a large caddisfly family with 20 extant genera comprising about 1 000 described species worldwide (Holzenthal *et al*. 2007). The family is currently divided into three subfamilies: Rossodinae Özdikmen & Darilmaz 2008, Chimarrinae Rambur 1842 and Philopotaminae Stephens 1829 (Holzenthal *et al*. 2007, Özdikmen & Darilmaz 2008). *Alterosa* Blahnik 2005 is placed in the subfamily Philopotaminae, and is restricted in distribution to South and Southeastern Brazil. The genus was recently erected by Blahnik (2005) to include two described species, *Dolophilodes* (*Sortosa*) *sanctipauli* Flint 1971 and *Dolophilodes* (*Sortosa*) *marinonii* Almeida & Duarte 2003, and 20 new species, totaling 22 species included within the genus. The two described Brazilian species of *Dolophilodes* (*Sortosa*) (as recognized by Ross 1956) share more similarities with *Alterosa* than with the Chilean genus *Sortosa* Navás 1918, where they were previously inserted (Blahnik 2005).

Adults of *Alterosa* are very similar in general structure, but are remarkable for their wide variation in male genitalic morphology. They are usually found in Atlantic Forest pristine headwaters, in rapids of streams or small rivers. However, there is a lack of knowledge of most aspects of the biology, ecology and distribution of the species, including their immature stages, which are unknown.

A new species of *Alterosa* was collected in the Atlantic Forest, Rio de Janeiro state, Southeastern Brazil. Herein, we describe and illustrate the male of this species. The female and the immature stages are unknown.

MATERIAL AND METHODS

The material was collected with Pennsylvania light traps (Frost 1957) and the specimens were preserved in 80% ethanol. In order to observe the genitalic structures, the abdomen

was removed and cleared in 10% KOH. The illustrations were made under a stereomicroscope and an optical microscope, both equipped with a camera lucida. The terminology used in the descriptions follows that of Blahnik (2005). The type specimens are deposited in Coleção Entomológica Professor José Alfredo Pinheiro Dutra, Departamento de Zoologia, Universidade Federal do Rio de Janeiro (DZRJ), Rio de Janeiro state.

Alterosa nessimiani, new species

Figs. 1-5

Alterosa nessimiani sp. nov. can be considered a member of *A. falcata* Group, as defined by Blahnik (2005), by possessing arched, curved intermediate appendages and a small number of large phallic spines. While the other species of the group have unarmed intermediate appendages, the new species bears a pair of small spines on each intermediate appendage. Among the species of the *A. falcata* Group, the new species is most similar to and closely related to *A. jordaensis* Blahnik 2005, sharing arched and apically curved intermediate appendages, and short preanal appendages, bearing an abruptly narrowed, subacuminate projection at its apex. *Alterosa nessimiani* sp. nov. can be distinguished by the presence of two spines on the intermediate appendages, the shape of tergum X, which is clavate apically, the wide 2nd article of inferior appendages, and the smaller number of phallic spines. Additionally, the intermediate appendages of *A. nessimiani* sp. nov. are nearly half the length of tergum X, whereas on *A. jordaensis* they are about 2/3rd the length of tergum X.

Description. Adult: Color (in alcohol) brown; legs, palps and antennae pale brown, wing pattern not discernable, but costal margin with some paler areas. Male forewing 5.1-6.4mm (n=3).

Male genitalia: Tergum VIII with posteromesal margin deeply emarginate, emargination V-shaped and extending more than half way to anterior margin, almost completely divided (Fig. 1). Sternum IX narrow, with anterolateral margin weakly rounded; posteroventral margin greatly produced, extending sinuously from dorsum (Fig. 2). Tergum IX reduced or partially fused to base of tergum X, dorsally folded into a small mesal projection over base of tergum X, hood-like in dorsal view (Fig. 2 and 3). Tergum X, in dorsal view, subtriangular, tapered from base, slightly expanded at midlength, rounded at apex (Fig. 3); in lateral view, slightly constricted subapically, with apex slightly enlarged, rounded (Fig. 2). Intermediate appendages heavily sclerotized, elongate, extending past preanal appendages, rod-like, arched, apex curved downward, with two small spines, one subapical and one apical (Fig. 2 and 3). Preanal appendages short, narrow, constricted basally, not greatly modified, with scant small setae; apex abruptly narrowed, forming subacuminate projection (Fig. 2 and 3). Inferior appendages elongate, linear, flattened on mesal surface, setose; 1st article, in lateral view, short, robust, nearly as wide as long; 2nd article longer than 1st, relatively broad, nearly uniform in width; apex rounded, with small pad of short, stiff apicomesal setae (Fig. 2 and 4). Phallobase tubular, short, slightly curved near base; endotheca with 1-3 large phallic spines (holotype with a single spine); phallotremal sclerite indistinct (Fig. 5).

Holotype male: BRAZIL: Rio de Janeiro: Nova Friburgo, Cascata, Rio Macaé, Cachoeira da Fumaça, 22°21'56.1" S - 42°15'13.1" W, 368m, 08.iii.2009, JL Nessimian, GA Jardim & BHL Sampaio leg. (DZRJ 3416).

Paratypes: BRAZIL: Rio de Janeiro: Nova Friburgo, Lumiar, Rio Boa Vista, Cachoeira Indiana Jones, 22°19'02.1" S - 42°17'28.5" W, 900m, 14.xi.2008, JL Nessimian, GA Jardim & IC Gonçalves leg., 1 male (DZRJ 3417); Nova Friburgo, Lumiar, 2nd order tributary of Rio Santiago, 22°21'05.6" S - 42°22'31.6" W, 790m, 29.x.2010, FA Capistrano leg., 1 male (DZRJ 3418).

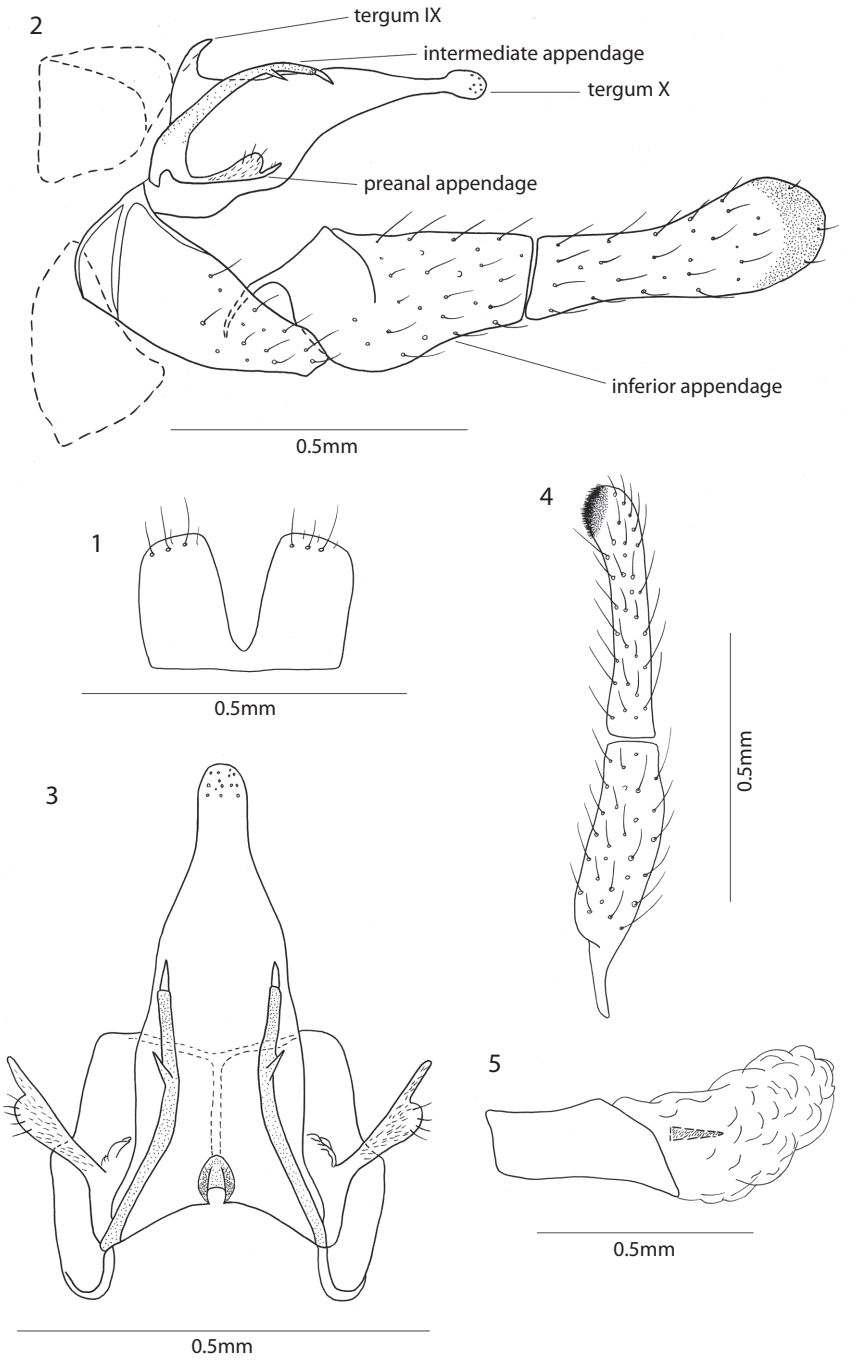

Fig. 1-5. *Alterosa nessimiani*, new species. Male genitalia. 1. Dorsal view of segment VIII; 2. Lateral view; 3. Dorsal view of segments IX and X; 4. Inferior appendage, dorsal view; 5. Phallic apparatus, lateral view.

Distribution: Southeastern Brazil (Rio de Janeiro state).

Etymology: It is with great pleasure that we dedicate this species to Prof. Dr. Jorge Luiz Nessimian, in recognition of his significant contributions to Brazilian entomological studies.

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RESUMEN

Philopotamidae es una familia grande de tricópteros la cual está actualmente compuesta por 20 géneros y cerca de 1 000 especies descritas en todo el mundo. El género *Alterosa* posee 22 especies descritas y están distribuidas en el sur y sureste de Brasil. Los adultos del género son muy similares en su estructura general, pero se diferencian por su amplia variación presente en la morfología de la genitalia masculina. Los ejemplares fueron recolectados en trampas luminosas Pennsylvania y conservados en etanol al 80%. *Alterosa nessimiani* sp. nov. es descrita e ilustrada basada en ejemplares machos recolectados en el estado de Río de Janeiro, sureste de Brasil. La nueva especie es similar a *A. jordaensis* Blahnik, 2005, pero puede ser diferenciada por la presencia de dos espinas en los apéndices intermediarios y por la forma del tergo X.

Palabras clave: *Alterosa nessimiani*, región Neotropical, selva Atlantica, taxonomía, tricópteros.

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