



## A new species of *Alterosa* Blahnik (Trichoptera: Philopotamidae: Philopotaminae) from Espírito Santo State, southeastern Brazil

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The genus *Alterosa* was erected by Blahnik (2005) to include 20 new species, as well as two previously described species, *Dolophilodes (Sortosa) sanctipauli* Flint 1971 and *Dolophilodes (Sortosa) marinonii* Almeida & Duarte 2003 that Blahnik transferred into it. Currently the genus contains 38 species, all of them endemic to the Brazilian Atlantic Forest (Jardim & Dumas 2012; Dumas & Nessimian 2013; Dumas *et al.* 2013). The rapid increase in the number of species reflects a likelihood that much of the total diversity within *Alterosa* is unknown. Adults are usually encountered in pristine headwaters, rapids of streams, or small rivers, and are rarely collected near large rivers (Dumas *et al.* 2013). The immature stages are unknown. Although there are superficial similarities among the species within the genus, they can be easily identified by male genital features (Jardim & Dumas 2012). Recently, Dumas *et al.* (2013) provide an identification key based on characters of male genitalia.

In this paper, we describe and illustrate the adult male of a new species of *Alterosa* collected in a Pennsylvania light trap (Frost 1957) from an Atlantic Forest site in Espírito Santo State, southeastern Brazil. The terminology used in the description follows that of Blahnik (2005). In addition, we also include our new species in the identification key proposed by Dumas *et al.* (2103). The holotype is deposited in the Coleção Entomológica do Departamento de Zoologia—Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (DZRJ).

### *Alterosa polyacinata* sp. nov.

Fig. 1

**Diagnosis.** *Alterosa polyacinata* sp. nov. is similar to *Alterosa caparaonensis* Blahnik 2005 and *Alterosa ruschii* Dumas & Nessimian 2013, resembling these species in having highly modified, basally branched intermediates appendages, each heavily armed with coarse setae. Additionally, the basolateral projection on tergum X and the structure and lack of spines in the phallus are also similar. The new species can be distinguished from the others by the presence of a triangular dorsal projection on tergum X and by the structure of the mesal branches of the intermediate appendages, which are divided into superior and inferior arms, whereas in *A. caparaonensis* and in *A. ruschii* they are not divided.

**Description.** *Adult male.* Length of each forewing 5.5 mm (n=1). Color (in alcohol) brownish; legs, palps, and antennae pale brown, wings brownish-yellow.

*Male genitalia.* Tergum VIII with posteromesal margin slightly emarginate. Sternum IX with anterolateral margin strongly rounded, extending from dorsum; posteroventral margin greatly produced, forming broad expansion, subtruncate at apex (Fig. 1A). Tergum IX fused to base of tergum X. Tergum X, in dorsal view, broad at base, abruptly narrowed at apical second third; with mesal projection over base of tergum (Fig. 1D); projection triangular and broadest apically, with seven irregular stout spines, five apically and two subapically positioned, and one tiny apicomeral spine (Figs. 1C, 1D); basolaterally with scabrous cuticle broadly projecting ventrolaterad, bearing numerous long spine-like setae ventrolaterally (Fig. 1C); apex sensillate, rounded, moderately enlarged in lateral view (Figs. 1A, 1C). Intermediate appendages sclerotized, paired, moderately elongate, length subequal to preanal appendages, branched basally (Figs. 1A, 1B), both mesal and lateral branches of appendages covered with coarse setae; mesal branches each forked subbasally, its superior arm finger-like, slightly curved outward as viewed dorsally, its inferior arm capitate; lateral branches clavate

(Figs. 1A, 1B.). Preanal appendages setose, slender, moderately elongate, not greatly modified, slightly enlarged near mid length; apex with few short, spine-like setae (Figs. 1A, 1B). Inferior appendages setose, elongate, linear, flattened on mesal surface (Figs. 1A, 1E); first article, in lateral view, narrow, about three times longer than wide, slightly larger at base; second article shorter than first, its apex rounded, slightly enlarged with small pad of short, stiff apicomesal setae (Figs. 1A, 1E). Phallobase tubular, elongate, narrow, weakly curved at midlength; endotheca without evident spines or phallostremal sclerites (Figs. 1F, 1G).

**Holotype male.** BRAZIL, Espírito Santo: Fundão (Hotel Fazenda Monte Sião, 19°56'02.0"S 40°24'45.0"W), 02.xii.2010, E.A. Raimundi, F.F. Salles, F.C. Massariol, P. Barcelos-Silva, Y.S. Feitosa legs.; in alcohol (DZRJ).

**Etymology.** The composite epithet of the specific name, *polyacinata*, is a combination of the Greek prefix *πολύ-* or *poly-* and Greek adjective *ἄκαινατος*, *-α*, *-ου* or *acinatus*, *-a*, *-um*, which means "many spined." This name refers to the presence of seven stout spines on the apicomesal projection of tergum X and to the many coarse, spine-like setae on intermediate appendages and on the basal ventrolateral projections of tergum X.

**Habitat.** The specimen described here was collected in a narrow stream with dense vegetation cover within a small remaining of Atlantic Forest. The little stream has a weak water flow with stony bottom and many leaves deposited.

**Comments.** Despite the fact that we have observed only a single specimen of the new species, we feel confident to describe it as new for science based on its numerous, dramatic diagnostic characters. *Alterosa polyacinata* **sp. nov.** differs from all other species of *Alterosa* in the dorsal triangular projection of tergum X, the unique structure of the intermediate appendages with mesal branches bearing dorsal and ventral arms, and the pair of basal ventrolateral projections of tergum X with numerous long spine-like setae on their ventral margins.

In order to include this species in the identification key provided by Dumas *et al.* (2013) we propose here an addendum to it, with some modifications to couplet 18, where *Alterosa polyacinata* **sp. nov.** would be included.

18. Intermediate appendages each with lateral branch greatly enlarged, lobe-like or capitate; endotheca without spines.. ..... 18'
- Intermediate appendages each with lateral branch not or only moderately enlarged, rod-like; endotheca with tracks of small spines..... 19
- 18' Tergum X with apicodorsal crest-like Y-shaped expansion; with small, cylindrical, ventrolateral projection on each side basally, and digitate protuberance covered by coarse setae; preanal appendages short, not surpassing lateral branches of intermediate appendages; mesal branches of intermediate appendages simple, not branched (see figs. 11A, 11B in the key of Dumas & Nessimian 2013)..... *Alterosa ruschii* Dumas & Nessimian
- Tergum X forming mesodorsal triangular projection over base of tergum; with large, flattened, subquadrangular, ventrolateral projection on each side basally; preanal appendages long, almost same length as lateral branches of intermediate appendages; mesal branch of each intermediate appendage forked, with superior and inferior arms (Figs. 1A, 1B) ..... *Alterosa polyacinata* **sp. nov.** Barcelos-Silva, Dumas & Pes

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