

SYSTEMATICS, MORPHOLOGY AND PHYSIOLOGY

A New Long-Horned Caddisfly in the Genus *Triplectides* Kolenati (Trichoptera: Leptoceridae) from the Itatiaia Massif, Southeastern Brazil

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ABSTRACT - *Triplectides itatiaia* sp. nov. is described from specimens collected on the Itatiaia massif, Mantiqueira mountain range, Rio de Janeiro state, Brazil. The new species can be distinguished by the presence of hind wing fork I petiolate, the long dorsal excision of segment X and the flat, apically rounded mesal lobes. Female and immature stages are unknown. A key to the Brazilian species in the genus is provided.

KEY WORDS: *Triplectides itatiaia*, new species, Triplectidini, Neotropical Region, Atlantic Forest, identification key

The long-horned caddisfly genus *Triplectides* Kolenati contains about 70 described species worldwide, making it the largest in the subfamily Triplectidinae (Holzenthal 1988, Malm & Johanson 2008). The genus shows a primarily southern hemisphere distribution, being most diverse in the Australian and Neotropical regions. Mosely (1936) provided the first comprehensive revision of the genus. More recently, Morse & Neboiss (1982) reviewed the Australian species, while Holzenthal (1988) reviewed the Neotropical ones. In the Neotropics there are 13 described species (Flint *et al* 1999) which are distributed from southern Chile and Argentina, through most of tropical South America, Central America to southern Mexico (Holzenthal 1988). Only five species of *Triplectides* were recorded from Brazil: *T. egleri* Sattler, *T. gracilis* (Burmeister), *T. misionensis* Holzenthal, *T. neotropicus* Holzenthal, and *T. ultimus* Holzenthal (Paprocki *et al* 2004). In the present work, we describe and illustrate the male of a new species collected on the Itatiaia massif, Mantiqueira mountain range, Rio de Janeiro state.

Material and Methods

The material was collected with Pennsylvania light traps and preserved in 80% ethanol. To observe genital structures, the abdomen was removed and cleared in 10% KOH. The illustrations were made under a stereomicroscope equipped with a camera lucida. The terminology used in the description follows that of Holzenthal (1988). The type specimens are deposited in the Coleção Entomológica Professor José Alfredo Pinheiro Dutra, Departamento de Zoologia, Universidade Federal do Rio de Janeiro, Brazil (DZRJ).

Triplectides itatiaia sp. nov. (Figs 1-7)

Triplectides itatiaia sp. nov. is similar to *T. gracilis* (Burmeister), being sympatric in the Mantiqueira mountain range of southeastern Brazil. They can be separated by wing venation, mainly by hind wing fork I being clearly petiolate in the former species (Fig 1b). In *T. gracilis*, the hind wing fork I is sessile or has a short petiole. In addition, in the new species the mesal lobes of the inferior appendages are apically flattened (Figs 5a, b), while in *T. gracilis* they are digitate, but never flattened (Figs 7a, b). *Triplectides itatiaia* sp. nov. is also similar to *T. flintorum* Holzenthal from

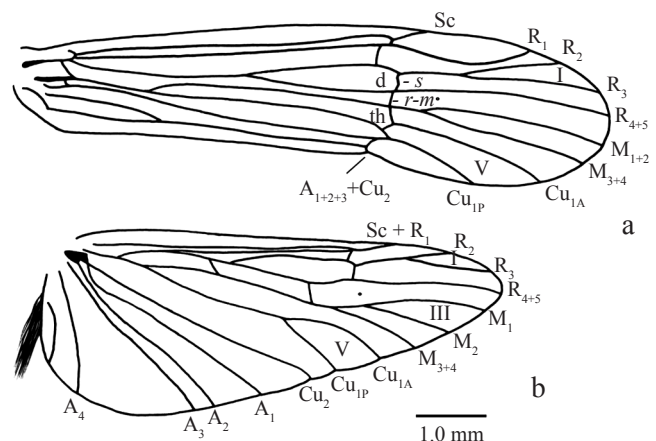
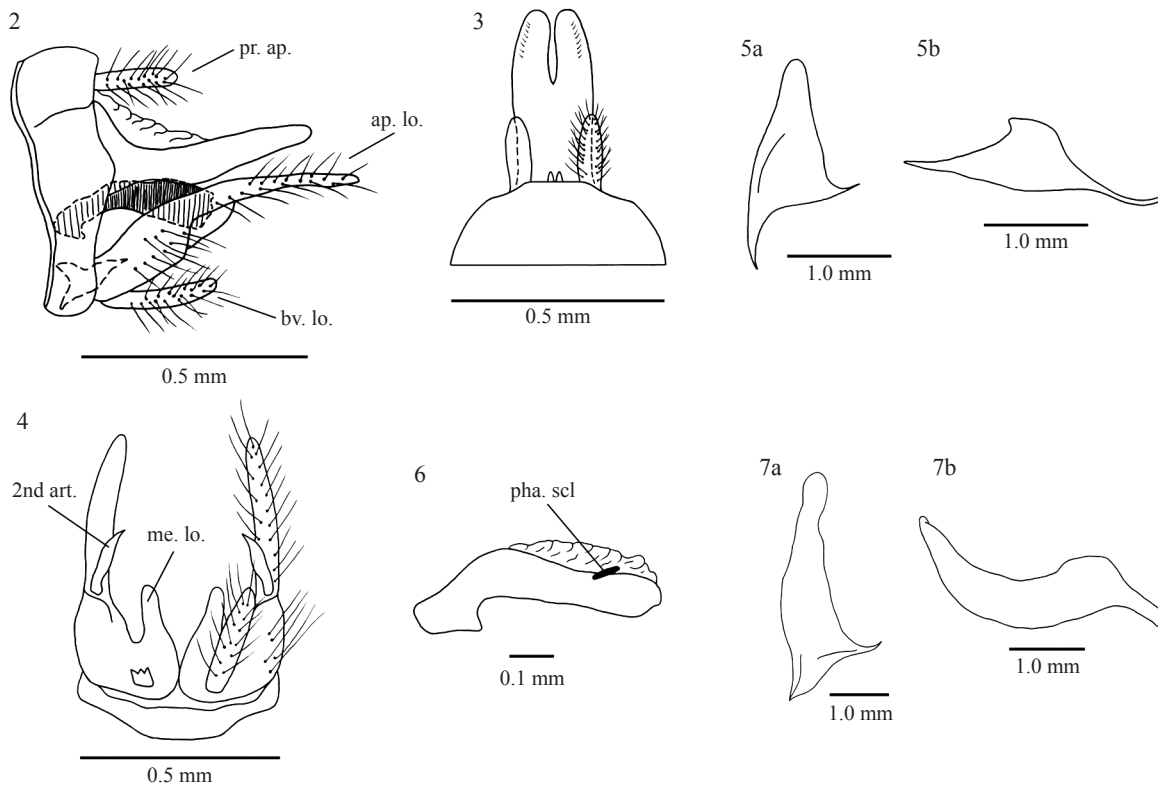


Fig 1 *Triplectides itatiaia* sp. nov. 1. Male wings: a) fore wing; b) hind wing. Abbreviations: d – discoidal cell; th – thyridial cell.



Figs 2-7 *Triplectides itatiaia* sp. nov. 2. Male genitalia, lateral view; 3. Male genitalia, dorsal view; 4. Male genitalia, ventral view; 5. Right mesal lobe: a) ventral view; b) lateral view. 6. Phallus, lateral view. *Triplectides gracilis* (Burmeister). 7. Right mesal lobe: a) ventral view; b) lateral view. Abbreviations: pr. ap. – preanal appendage; ap. lo. – apical lobe; bv. lo. – basoventral lobe; me. lo. – mesal lobe; 2nd art. – second article; pha. scl. – phallosclerite.

Central America. These species are distinguished by the preanal appendages (Figs 2, 3), which are longer and more apically pointed in *T. flintorum*, and by tergum X that is less protruded and more rounded in the new species (Figs 2, 3). Furthermore, Holzenthal (1988) pointed out the presence of a long, thin, sclerotized strip along the dorsal midline of the phallic apparatus in *T. flintorum*. This structure was not found in the new species.

Triplectides ultimus Holzenthal is also sympatric with the species here described; both are endemic to the Itatiaia massif. However, these species are easily distinguishable by the shape of mesal lobe of the inferior appendages and the long, bifurcate membranous process of the tergum IX present in *T. ultimus* (see figs 30b, c in Holzenthal 1988).

Description. Adult male (Figs 1-6): Forewing length: 10 mm ($n = 2$). Head mostly brown, with antenna and labial palp stramineous, maxillary palp dark brown; thorax reddish brown, legs stramineous. Fore wings light brown, with several small light maculae.

Head: Frontal setal wart present between the antennal base; one pair of small antennal setal warts present; one pair of large posterior setal warts present behind eyes; one pair of long and slender setal warts on postgenal area present. Maxillary palp long, with segment IV about 1/4 the length of segment V.

Thorax (Fig 1): Fore wings with dorsal dark setae along

costal and subcostal area, extending from base to near apex; forks I and V present in male; discoidal cell apically large; *s* slightly sinuous; *r-m* slightly shorter than *s*, almost touching. Hind wings broad, with forks I, III and V present; fork I with distinct petiole (Fig 1). Spur formula 2-2-4.

Male genitalia (Figs 2-7): Segment IX, in lateral view, with anterior margin slightly concave, enlarged dorsally, posterior margin almost straight, slightly protruded medially (Fig 2); tergum IX with posterior margin almost rounded, slightly protruded, with two small membranous digitate median processes (Fig 3). Preanal appendages short, digitate, bearing long setae (Figs 2, 3). Segment X in lateral aspect about two times the length of preanal appendages, wide at base, tapering from base to midlength, rounded at apex (Fig 2); dorsally with slight basal constriction, almost parallel side, with an apicomeral excision extending anteriorly to less than half the segment length (Fig 3); apical portion of segment X bearing very short, dorsal setae. Inferior appendages long, bearing long setae (Figs 2, 4); first article wide at base, constricted at 1/3 article length, narrow apical portion, with rounded apex; apicodorsal lobes long, extending beyond second article (Fig 2); basoventral lobes digitate, bearing stout setae; mesal lobes subequal in length to basoventral lobes; in lateral view, large at base, tapering apically, flattened at apex (Fig 5b); in ventral view, rounded apically (Figs 4, 5a); second article short, with sharp apex, directed mesally (Fig 4). Phallic apparatus simple, tubular, with phallosclerite

sclerite small, rod-like, poorly developed (Fig 6).

Female and larvae: Unknown.

Holotype male: BRAZIL, Rio de Janeiro, Itatiaia: Parque Nacional do Itatiaia, Rio Tapera, 22°26'59.64''S 44°36'19.39''W, 794 m, 13.iv.2007, J L Nessimian, L L Dumas, A P M dos Santos & N Ferreira Jr leg. (DZRJ 1654).

Paratype male: BRAZIL, Rio de Janeiro, Itatiaia: Parque Nacional do Itatiaia, Rio Campo Belo, Cachoeira Vêu da Noiva track, 22°25'42.03''S 44°37'11.19''W, 982 m, 16.iv.2007, J L Nessimian, A P M dos Santos, N Ferreira Jr & L L Dumas leg. (DZRJ 1655).

Etymology. The specific epithet, *itatiaia*, refers to Parque Nacional do Itatiaia, the national park where the type specimens were collected. Itatiaia, from the Tupi language, means pointed rock, in reference to Pico das Agulhas Negras, the highest peak of the Itatiaia massif.

Distribution. Southeastern Brazil (Rio de Janeiro state).

Key to the Known Brazilian Species of *Triplectides* Kolenati (modified from Holzenthal 1988)

1. Tibial spur formula 2-2-3 *T. eglerti* Sattler
- 1'. Tibial spur formula 2-2-4 2
2. Tergum IX with long bifurcate membranous process; mesal lobe of inferior appendage short, triangular (see Figs 30b, c in Holzenthal 1988) *T. ultimus* Holzenthal
- 2'. Tergum IX without, or with short, bifurcate membranous process; mesal lobe of inferior appendage long, digitate 3
3. Mesal lobe of inferior appendage with apex acute, pointed, with small, lateral point (see Fig 15c in Holzenthal 1988) *T. misionensis* Holzenthal
- 3'. Mesal lobe of inferior appendage with apex obtuse, rounded, without lateral point 4
4. Apex of mesal lobe of inferior appendage clearly capitate (see Fig 20c in Holzenthal 1988) *T. neotropicus* Holzenthal
- 4'. Apex of mesal lobe of inferior appendage rounded, not capitate 5

5. Hind wing fork I sessile or with very short petiole; mesal lobe of inferior appendage digitate, never flattened (see Figs 7a, b, 11b in Holzenthal 1988) *T. gracilis* (Burmeister)
- 5'. Hind wing fork I with distinct petiole; mesal lobe of inferior appendage flattened (Figs 1b, 6a, b) *T. itatiaia* sp. nov.

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