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Male secondary sexual characters resolve taxonomic uncertainty: five new species and a review of the formerly monotypic rove beetle genus *Mimosticus* Sharp (Coleoptera: Staphylinidae: Staphylininae)

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Abstract

The hitherto poorly known Neotropical rove beetle genus *Mimosticus* is reviewed. Five new species are described from the Andes, *Mimosticus aeneipennis* **sp. n.**, *Mimosticus latens* **sp. n.**, *Mimosticus pseudosharpi* **sp. n.**, *Mimosticus sharpi* **sp. n.** and *Mimosticus tenuiformis* **sp. n.** The widely distributed type species of the genus, *Mimosticus viridipennis* Sharp, 1884, is redescribed. Aedeagal characters traditionally used to delimit species in Staphylinidae exhibited only subtle interspecific differences in *Mimosticus* but were corroborated by distinct differences in male secondary sexual characters. A modern description and morphological diagnosis of the genus are provided, distribution and bionomic data are summarized, and the placement of *Mimosticus* in the Staphylinini subtribe Amblyopinina is justified in the context of recent, character-based phylogenetic hypotheses.

Key words: Staphylinini, Amblyopinina, Quediina, Neotropical Region, Andes, biodiversity

Introduction

The genus *Mimosticus* Sharp, 1884 (Staphylinidae: Staphylininae: Staphylinini) was erected for a single female specimen from Volcán Chiriquí (=Baru Volcano), Panama, described as *Mimosticus viridipennis* (Sharp 1884) (Fig. 1A). Since then, *Mimosticus* has been cited only in catalogues as a monotypic genus from the tribe/subtribe Quediini/Quediina from either: Panama, based on the original description (Bernhauer & Schubert 1916; Blackwelder 1944, 1952; Herman 2001); or from Costa Rica, Panama and Bolivia (Newton *et al.* 2005; Newton & Thayer 2005), based on some additional material identified by A. Fauvel that is currently located in M. Bernhauer's collection at the Field Museum. Recently, we have assembled a large sample of *Mimosticus* specimens from an area ranging from Costa Rica, south to the Andes as far as Bolivia. With even a preliminary examination of this material, it was clear that the true diversity of this genus was significantly underestimated. At the same time, relatively subtle variation in external and genitalic characters that are traditionally emphasized in Staphylinini species concepts prompted us to seek additional evidence from morphology among less traditional characters. In addition to describing previously unrecognized species in *Mimosticus*, the genus was redescribed in the context of similar taxa in Amblyopinina for an on-going generic revision of this subtribe (as newly defined in Chatzimanolis *et al.* 2010 or Solodovnikov 2012). In this new sense, Amblyopinina comprise a large group that is consistently recovered as monophyletic (Solodovnikov 2006; Solodovnikov & Schomann 2009; Chatzimanolis *et al.* 2010; Brunke & Solodovnikov 2013) and includes *Mimosticus*, several other genera moved from Quediina, and its original members (*Amblyopinus* Solsky, 1875 and related taxa), which are highly specialized mammal symbionts (Seevers 1955). Among the New World Amblyopinina, *Mimosticus* is one of the few lineages that have dispersed north to Central America, whereas the majority of genera are south temperate in distribution.

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Paratype: 1 female, same data as in the holotype, but 1°38' N; 76°6'W,1980 m, 2–5.XII.2001 (SEMC).

Description. Measurements: HL 1.0–1.1; HW 1.1–1.2; PL 1.6–1.7; PW 1.9–2.2; EL 2.3–2.4; EW 2.2–2.4. Total body length 10.5–11.5 mm.

Black, with distinct golden iridescence on head and pronotum; elytra bright, metallic bluish purple; abdomen, strongly iridescent. Last two antennomeres visibly paler: pale brown to brown.

Head in dorsal view with nuchal ridge distinct laterally. Eyes moderately large, in dorsal view 2.2–2.3 times as long as tempora, the latter about as half as long as an eye. Antennae as in Fig. 2D, with relatively long antennomeres: antennomere 4 about 2.3 times as long as wide.

Pronotum slightly transverse.

Elytra slightly wider and longer than pronotum.

Male: tergite VIII slightly notched at apex (Fig. 5A), sternite VIII with broadly rounded apical margin and only indistinct, apical emargination (Fig. 4F); sternite IX obtuse basally, gradually widening apicad and not forming a distinct basal stalk (Fig. 6F); tergite X without long dark macrosetae, with only smaller setae and with very shallow notch on the apical margin (Fig. 7F). Aedeagus with weakly developed small copulatory sclerite in internal sac (Fig. 9G) but otherwise very similar to that of *M. aeneipennis*: paramere dilated apically (Fig. 8F), without sensory peg setae-like structures; internal sac with strongly sclerotized, densely packed, spine-like structures that are grouped in fields that differ in their size and degree of sclerotization.

Comparison. *Mimosticus latens* can be easily distinguished from *M. viridipennis* and *M. tenuiformis* by the nuchal ridge that is visible in dorsal view. From *M. aeneipennis* it can be distinguished externally by the larger eyes, bluish-purple elytra and more slender antennomeres 7–10. Among males of the sharpi species complex, *M. latens* can be distinguished by the slightly notched apical margin of tergite VIII, the broad basal portion of sternite IX and the extremely weakly developed copulatory sclerite of the internal sac of the aedeagus, the latter of which is difficult to observe in less-than-ideally prepared specimens.

Distribution and bionomics. *Mimosticus latens* is known only from the type locality in the Andes of Colombia based on two specimens collected by Malaise trap at 2100 m elevation.

Etymology. The name of the new species is a Latin adjective that means “hidden” or “secret”. It refers to the high degree of superficial similarity between this new species and others of the sharpi species complex.

Mimosticus sp.

Material examined: female, “Peru Centr.” [specimen from S.M. Solsky collection] (ZISP).

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