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Two new species of *Piaroa* (Arachnida: Schizomida, Hubbardiidae) from Colombia, with comments on the genus taxonomy and the flagellar setae pattern of Hubbardiinae

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Abstract

Two new species of the genus *Piaroa* Villarreal, Tourinho & Giupponi, 2008, *P. escalerete* **sp. nov.** and *P. bacata* **sp. nov.** are described from Valle del Cauca, and Cundinamarca departments, Colombia, respectively. The female flagellum is fully illustrated for a *Piaroa* species for the first time; the generic diagnosis is also emended and the relationships of the new species with those previously described are discussed. New characters for *Piaroa* species, a new nomenclature for the chitinized arch and a reinterpretation of the Hubbardiinae flagellar setae pattern are proposed. A distribution map of the known species of *Piaroa* is provided.

Key words: Arachnida, schizomid, Pacific Region, Oriental Andes, Valle del Cauca, Cundinamarca

Resumen

Se describen dos nuevas especies del género *Piaroa* Villarreal, Tourinho & Giupponi, 2008, *P. escalerete* **sp. nov.** y *P. bacata* **sp. nov.**, provenientes de los departamentos de Valle del Cauca, y Cundinamarca, Colombia, respectivamente. Por primera vez se ilustra completamente el flagelo femenino de una especie de *Piaroa*; además, se enmienda la diagnosis del género y se analizan las posibles relaciones de las nuevas especies con las previamente descritas. Nuevos caracteres para especies de *Piaroa*, una nueva nomenclatura para el arco quitinizado y una reinterpretación del patrón setal flagelar de Hubbardiinae son proporcionados. Se aporta un mapa de distribución de las especies conocidas de *Piaroa*.

Palabras clave: Arachnida, esquizómido, Región Pacífica, Andes Orientales, Valle del Cauca, Cundinamarca

Introduction

The knowledge on the order Schizomida in the New World has increased considerably recently. Currently, 34 genera are known from the region, which is more than half of the genera known worldwide (61). The Neotropical region currently has 28 genera. Until now only three phylogenetic hypotheses have been proposed for Schizomida: Rowland's (1975) unpublished analysis of schizomid species groups; Cokendolpher & Reddell's (1992) phylogenetic analysis of Protoschizomidae, including a discussion on significant characters; and more recently, Harvey *et al.*'s (2008) morphological and molecular analyses of the genera *Draculoides* Harvey, 1992 and *Paradraculoides* Harvey, Berry, Edward, & Humpreys, 2008. In view of the increasing number of Hubbardiidae genera described, new phylogenetic hypothesis become necessary, including a survey of new characters, like new details of spermathecae, chelicerae, and those based on flagellar shape (male) and flagellar setation (both sexes) (Moreno-González & Villarreal 2012).

The presence of distolateral microsetae patches was detected in the male flagellum of several genera and species (Table 5) and appears to be a very common feature among Hubbardiinae. We consider that those distolateral microsetae patches can be homologous with those found ventrally in the male flagellum of most Protoschizomidae species; however a phylogenetic analysis is necessary to confirm this hypothesis. These microsetae patches present variable numbers even inside the same individual, species or genus, and we suggest that these numbers can be used to propose ranges that can be used as taxonomic characters.

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