



## A new species of *Asthenopus* (Ephemeroptera: Polymitarcyidae: Asthenopodinae) from Brazil and Colombia

CARLOS MOLINERI<sup>1</sup>, PAULO VILELA CRUZ<sup>2</sup> & DANIEL EMMERICH<sup>3</sup>

<sup>1</sup>CONICET, Instituto de Biodiversidad Neotropical, Facultad de Ciencias Naturales e IML, M. Lillo 205, San Miguel de Tucumán, 4000, Tucumán, Argentina, UNASUR. E-mail: cmolineri@csnat.unt.edu.ar

<sup>2</sup>Universidade Federal do Amazonas - UFAM, Av. General Rodrigo Octávio Jordão Ramos, 3000, Campus Universitário, Coroado I, Manaus, Amazonas, Brasil. Programa de Pós-graduação em Entomologia, Instituto Nacional de Pesquisas da Amazônia (INPA), CEP 69060-001, Manaus, Amazonas, Brazil. E-mail: pvilelacruz@gmail.com

<sup>3</sup>Sección Entomología, Facultad de Ciencias, PEDECIBA, Universidad de la República, Montevideo, Uruguay. E-mail: danielommerich07@gmail.com

### Abstract

A new species of *Asthenopus*, *A. crenulatus* sp. nov. is described from adults of both sexes from Brazil and Colombia. The new species is diagnosed by: male foreleg length 0.7–0.9 times the length of fore wing, marginal intercalary veins on the entire margin of fore and hind wings generally shorter than distance between longitudinal veins, forceps and penes long and slender, penes with many subapical spines. This new species is closely related with *A. picteti* (Hubbard). A key to the male adults of *Asthenopus* is included.

**Key words:** burrowing mayfly, Ephemeroidea, *Asthenopus picteti*, taxonomy

### Introduction

*Asthenopus* is the only Neotropical member of Asthenopodinae (Polymitarcyidae), and currently three species are known in this genus (Domínguez *et al.* 2006): *A. curtus* (Hagen) known from adults of both sexes and nymphs from Brazil, *A. gilliesi* Domínguez and *A. picteti* (Hubbard) both known from male imagoes from Uruguay. Before 1988, species in *Asthenopus* were included in two genera: *Asthenopus*, established by Eaton and *Asthenopodes*, established by Ulmer. Both genera were distinguished by length of legs, wing venation and shape of the male genitalia (Ulmer, 1924; Traver, 1956). In 1988, Domínguez described *A. gilliesi*, with intermediate characters between *Asthenopus* and *Asthenopodes*, raising questions about their taxonomic status. Hubbard & Domínguez (1988) synonymized these genera since no clear generic distinction could be observed in the adults and all the Neotropical nymphs known at this moment presented a very similar morphology.

The nymphs of Asthenopodinae are characterized by their stout mandibular tusks, used to burrow in submersed wood and other plant tissues. *Asthenopus* nymphs had been reported in rotten wood and in soft tissues of live *Thypha* and *Eichornia* (Sattler 1967, Berner 1978).

The aim of the present contribution is to describe a very distinctive new species, from adults of both sexes, collected in the Amazonas state in Brazil and Colombia.

### Material and methods

Morphological terms and descriptions follow standard methodology for the group (Domínguez *et al.* 2006). Material is preserved in 96° alcohol, dissected parts are mounted on Canada Balsam except wings, mounted dried. Pictures were taken with an Axion Vision Camera (AxioCamICc1) coupled to a Zeiss stereomicroscope (Discovery V12) and Olympus DP72 Camera coupled to a Olympus microscope BX51, the pictures were combined by free