



## A new species of *Miroculis* Edmunds, 1963 (Ephemeroptera: Leptophlebiidae) from Northeastern Brazil

LUCAS R. C. LIMA<sup>1,3</sup>, ERIKSEN A. RAIMUNDI<sup>2</sup>, ULISSES PINHEIRO<sup>1</sup> & FREDERICO F. SALLES<sup>2</sup>

<sup>1</sup>Centro de Ciências Biológicas, Departamento de Zoologia, Laboratório de Porifera, Universidade Federal de Pernambuco, Brazil, CEP 50670-420, Recife, Pernambuco. E-mail: [uspinheiro@hotmail.com](mailto:uspinheiro@hotmail.com)

<sup>2</sup>Laboratório de Sistemática e Ecologia de Insetos, Universidade Federal do Espírito Santo, Brazil, CEP 29933-415, São Mateus, Espírito Santo. Email: [ffsalles@gmail.com](mailto:ffsalles@gmail.com)

<sup>3</sup>Corresponding author: E-mail: [lucalima\\_86@hotmail.com](mailto:lucalima_86@hotmail.com)

### Abstract

*Miroculis stenopterus*, **sp. nov.**, is described based on material from State of Pernambuco, Northeastern Brazil. The imago of the new species can be distinguished, among other characteristics, by an uncommon forewing shape, long and narrow, similar to species of genus *Microphlebia*. The tentatively associated nymph can be distinguished from other species of the genus mainly by the abdominal color pattern and the ratio of labial palp segment 2 to segment 1 (1.01–1.04 x).

**Key words:** leptophlebiids, Neotropical, taxonomy, mayflies

### Introduction

The genus *Miroculis* was established by Edmunds (1963) for the species *Miroculis rossi* Edmunds, 1963 from Peru. The genus is currently composed of 17 described species, ranging from Trinidad to Northeastern Argentina (Edmunds 1963; Savage & Peters 1983; Savage 1987; Domínguez 2007; Peters *et al.* 2008; Salles & Lima 2011; Costa & Mariano 2013; Gama Neto & Hamada 2013).

The genus is distinguished by several apomorphies. In the imago, the most notable are the tent-shaped costal projection of the hind wing and the finger-like projection on the male fore claw. In the nymph, the combination of a long distal filament and lateral lobes on the gills, glossae curved over ventrally and a thick row of pectinate setae on the maxillae (Savage & Peters 1983). Based mainly on the male's eyes, Savage and Peters (1983), with later modifications by Savage (1987) and Peters *et al.* (2008), divided the genus into four subgenera: *Miroculis*, *s.s.* (long dorsally-directed stalks with length greater than width, 5–20 facets in longest row of dorsal portion), *Yaruma* Savage & Peters, 1983 (short wide stalks), *Ommaethus* Savage & Peters, 1983 (without stalks), and *Atroari* Savage & Peters, 1983 (upper portion of compound eye large, without stalk, and with 30–40 medium facets in longest row).

In Brazil, *Miroculis* is one of the Leptophlebiidae genera with the greatest number of species, currently with eleven recorded (Salles *et al.* 2014). The genus, however, has been considered poorly studied in the country because most of these records are based on the original description, and only *M. (M.) caparaoensis* Salles & Lima, 2011, *M. (M.) fazzariensis* Costa & Mariano, 2013, and *Miroculis (M.) tepequensis* Gama Neto & Hamada, 2013 have been described since Savage & Peters (1983). Including Brazil and beyond, the majority of species of the genus (nine) are known only based on the adult stage; two are based only on the nymph; and six are based on both nymphs and imagoes. In the present paper, as part of an effort to study the mayfly fauna of the State of Pernambuco, we describe a new species of *Miroculis* (*Miroculis*) based on the male imago and nymph stages.

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