

Heteragrion gorbi sp. nov. (Odonata: Heteragrionidae) from southeastern Brazil

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Abstract

Heteragrion gorbi sp. nov. (Zygoptera: Heteragrionidae) is described and diagnosed based on six ♂♂ and one ♀. The specimens were collected in a stream in a Neotropical savannah fragment in São Carlos, São Paulo, Brazil. We present pictures of the holotype and the female. This is a species with blue coloration pattern, rare among its congeners.

Key words: dragonfly, damselfly, taxonomy, biodiversity, Cerrado, new species

Introduction

Selys established the genus *Heteragrion* in his seminal work (Selys 1862) with the description of 12 species organized in four different groups according to their distinct taxonomic features (Group 1: *H. flavovittatum* Selys, 1862; Group 2: *H. aurantiacum* Selys, 1862; Group 3: *H. chrysops* Selys, 1862; and Group 4: *Oxystigma petiolatum* (Selys 1862)). Since then, a great deal of research on the genus has been published, and many species have been described (e.g., Lencioni 2013; Bota-Sierra & Novelo-Gutiérrez 2017; Vilela *et al.* 2019). Lencioni (2013) provides specific terminology for the morphology of the cerci, and new taxonomic groups for the genus based on male appendages and female genital valves (Group A: Selys's group 1 and 2; Group B: Selys's group 3).

Heteragrion is exclusively distributed in the Neotropics (Garrison *et al.* 2010), with 54 species hitherto being recognized (excluding *nomina dubia*) (Paulson & Schorr 2020), of which 29 species are found in Brazil (Lencioni 2005, 2017; Vilela *et al.* 2019). The majority of males of *Heteragrion* exhibit black/yellow/orange/red color patterns, with only four species known so far that present shades of blue (*H. obsoletum* Selys, 1886; *H. azulum* Dunkle, 1989; *H. cyane* Machado & Souza, 2014; and *H. denisye* Vilela, Koroiva & Guillermo-Ferreira, 2019).

Here we describe and diagnose *Heteragrion gorbi* of Lencioni's (2013) Group A from southeastern Brazil, a remarkable species with a distinct blue coloration pattern, rare among its congeners.

Material and methods

The specimens were collected in the Espraiado stream (Fig. 6), which is approximately 1m wide and surrounded by riparian vegetation in a Neotropical savannah fragment near the Federal University of São Carlos (UFSCar), São Carlos, São Paulo, Brazil (-21.981569, -47.873922), in October 2019 and September 2020. The regional climate is categorized as Cwa (Köppen-Geiger subtropical / tropical of altitude climate) with dry season from April-September followed by a wet season from October-March (Alvares *et al.* 2013).

The genus of our undescribed species was identified based on Garrison *et al.* (2010) and Lencioni (2013, 2017). We also refer the recent publication (including the holotype of *Heteragrion denisye*) of Vilela *et al.* (2019).

For taxonomic terminology of the body, we followed Garrison *et al.* (2010), while for specific terminology of the cerci, we followed Lencioni (2013). Photographs were taken with a Canon 70D digital camera attached to a Leica MZ95 stereomicroscope. Measurements were made using *ImageJ2* software (Rueden *et al.* 2017).