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## Gerromorpha (Hemiptera: Heteroptera) of eastern Mato Grosso State, Brazil: checklist, new records, and species distribution modeling

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### Abstract

The infraorder Gerromorpha comprises semiaquatic bugs, most of which spend much of their lifetime on the water surface, between floating plants, or on the margins of water bodies. Based on literature and collections made on streams and lakes on municipalities of eastern Mato Grosso, Brazil, a list has been elaborated with 52 species, including several new records. Out of the recorded species, 26 belong to the family Veliidae, 20 to Gerridae, three to Hydrometridae, two to Mesoveliidae, and one to Hebridae. The modeling of the potential geographical distribution is also presented for the 20 species that have been recorded for the first time from the state.

**Key words:** Aquatic insects, biogeography, semiaquatic bugs, taxonomy

### Resumo

A infraordem Gerromorpha é composta por percevejos semiaquáticos, a maioria dos quais vive grande parte do tempo sobre a água, entre plantas flutuantes ou nas margens de corpos d'água. Com base em literatura e coletas realizadas em córregos e lagos de municípios do leste do Mato Grosso, Brasil, foi elaborada uma lista de 52 espécies para a região, incluindo diversos novos registros. Das espécies registradas, 26 pertencem a família Veliidae, 20 a Gerridae, três a Hydrometridae, duas a Mesoveliidae e uma a Hebridae. Também é apresentada a modelagem de distribuição geográfica potencial das 20 espécies que foram registradas pela primeira vez no estado.

**Palavras-chave:** Biogeografia, insetos aquáticos, percevejos semi-aquáticos, taxonomia

### Introduction

The aquatic and semiaquatic Heteroptera (Insecta: Hemiptera) are distributed worldwide and occupy a wide variety of habitats, including lentic and lotic water bodies, perennial or temporary (Nieser & Melo 1997). These insects are divided on the infraorders Nepomorpha (truly aquatic), Gerromorpha, and Leptopodomorpha (both mainly semiaquatic), and total approximately 4.700 freshwater species, 28% of which occur on the Neotropical Region. Among the more than 2.100 described Gerromorpha, 206 species and subspecies have been recorded from Brazil

When the distributional maps are analyzed, it becomes clear that the fauna of Gerromorpha from the Southeast is well-known and that there is a great gap of records from areas on the north drainage of the Amazon River (specially Amapá and Roraima), the *Caatinga* biome (interior of the Northeast region), humid areas of the Chaco on the extreme south of the country, and the *Pantanal* (Mato Grosso and Mato Grosso do Sul). This result corroborates with what is known as Wallacean deficit (Whittaker 2005), where the geographical distributions are still unknown and there are gaps for many taxonomic groups (Bini *et al.* 2006). This is a reflect of the spatial discontinuity of collections, and can only be solved with an increase of the studies in such regions, which will also provide a better view of the degree of endemism in each biome and the distribution of rare species.

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