

# New records of Gerromorpha (Insecta: Hemiptera: Heteroptera) from Brazil

Higor Daniel Duarte Rodrigues<sup>1\*</sup>, Alan Lane de Melo<sup>2</sup> and Ruth Leila Ferreira-Keppler<sup>1</sup>

1 Instituto Nacional de Pesquisas da Amazônia, Coordenação de Biodiversidade. Avenida André Araújo, 2936, Aleixo. CEP 69060-001. Manaus, AM, Brasil.

2 Universidade Federal de Minas Gerais, Instituto de Ciências Biológicas, Departamento de Parasitologia. Avenida Antônio Carlos, 6627, Pampulha. CEP 30123-970. Belo Horizonte, MG, Brasil.

\* Corresponding author. Email: [higorddr@gmail.com](mailto:higorddr@gmail.com)

**ABSTRACT:** New records are presented for twenty-four species of Gerromorpha belonging to Gerridae (*Brachymetra furva*, *B. lata*, *Cylindrostethus palmaris*, *Halobatopsis platensis*, *Limnogonus aduncus aduncus*, *L. ignotus*, *L. profugus*, *L. recurvus*, *Ovatametra minima*, *O. obesa*, *Tachygerris adamsoni* and *Neogerris lubricus*), Mesoveliidae (*Mesovelvia zeteki* and *Mesoveloidea williamsi*) and Veliidae (*Microvelia longipes*, *Oiovelia brasiliensis*, *O. cunucunumana*, *Paravelia bullialata*, *P. capixaba*, *Platyvelia brachialis*, *Rhagovelia tenuipes*, *Stridulivelia astralis*, *S. quadrispinosa* and *S. tersa*). These new records are distributed among the four administrative regions of Brazil, and the known geographical distribution of these species in the country is presented.

Among the Gerromorpha, Gerridae and Veliidae are the families with the greatest number of genera and species recorded for the Neotropical region (Polhemus and Polhemus 2008). In Brazil, 13 genera and 56 species of Gerridae, and 10 genera and 105 species of Veliidae have been recorded. Together these families represent 86% of the fauna of Gerromorpha known from the country. Unlike these two families, Mesoveliidae has the fewest species of Gerromorpha occurring in Brazil, with only four genera and seven species (Moreira *et al.* 2011c). These insects are found in all freshwater ecosystems and some species live in marine environments, such as estuaries, mangroves, seas and open oceans (Andersen 1982). In Brazil, studies on the aquatic Heteroptera (Gerromorpha and Nepomorpha) were concentrated mainly in the North and Southeast regions, a fact that impairs the understanding of the geographical distribution patterns of the semiaquatic bugs.

Recently, a work published by Moreira *et al.* (2011c) as a review of the records these insects in the five Brazilian regions, listed 187 species of Gerromorpha, out of which 85 occur in the North Region (N), 8 in Northeast (NE), 38 in Central-West (CW), 89 in Southeast (SE) and 44 in South (S). These regions are subdivided into 26 states, plus the Federal District. Some states, such as Alagoas, Piauí, Paraíba and Sergipe, in the Northeast Region, have literally no records of Gerromorpha mentioned in the literature. It is remarkable that the Northeast Region is the poorly studied in relation to its fauna of semiaquatic Heteroptera, especially when compared to others regions. Future studies may elucidate which species occur in this region, as well as their distributions.

This study deals with new records for 24 species of Gerromorpha (eleven species and one subspecies of Gerridae, two species of Mesoveliidae and ten species of Veliidae) from eleven states in Brazil. Out of these species, eleven are recorded from the North Region (Amapá,

Amazonas, Rondônia and Roraima states), eleven to the Northeast Region (Bahia, Maranhão, Pernambuco, Piauí and Rio Grande do Norte states), five to the Southeast Region (Minas Gerais state) and two to the South Region (Paraná state). Some of these species occur in two or more regions of the country, whereas others have been collected only in the same region from where they were described. The current geographic distribution of these species in Brazil is summarized and presented by state and region. The voucher specimens (fixed in alcohol 80%) studied have been deposited in the Invertebrate Collection of the Department of Parasitology, Universidade Federal de Minas Gerais, Belo Horizonte (DPIC) and the Invertebrate Collection of the Instituto Nacional de Pesquisas da Amazônia, Manaus (INPA).

## GERRIDAE

### *Brachymetra furva* Drake, 1957

**Geographic distribution in Brazil:** SE – Minas Gerais (Drake 1957; Nieser and Melo 1997; Vianna and Melo 2003; Melo and Nieser 2004; Pelli *et al.* 2006; Souza *et al.* 2006) and Rio de Janeiro (Drake 1957; Moreira *et al.* 2011d).

**Material examined:** NE – 1 apterous female, 1 nymph (DPIC), **Bahia**, Parque Nacional do Descobrimento, 30.VII.2009, M.A.P. Horta col.; 1 apterous male, 1 macropterous male, 1 macropterous female (INPA), **Maranhão**, Timon, Estrada do Portal da Amazônia (05°03'03,3" S, 43°01'52,2" W), 09.VI.2011, N. Hamada, P.V. Cruz and R.B. Querino col.; 1 apterous male, 1 macropterous male, 1 macropterous female (INPA), **Piauí**, Piracuruca, Parque Nacional de 7 Cidades, 29.V.2011, N. Hamada, P.V. Cruz and R.B. Querino col.; 1 apterous male, 2 apterous females (INPA), **Rio Grande do Norte**, Parnamirim, 09.IX.2011, R. Boldrini col.; S – 5 apterous males, 4 apterous females (DPIC), **Paraná**, Foz do Iguacu,

Rio Tamanduá, 24.VIII.2000, A.L. Melo col.

**Remarks:** Heretofore known in Brazil only from the Southeast Region. Herein it is recorded for the first time from the Northeast and South regions.

### ***Brachymetra lata* Shaw, 1933**

**Geographic distribution in Brazil:** N – Amapá (Moreira *et al.* 2011d), Amazonas (Shaw 1933; Nieser 1970; Pereira and Melo 2007; Moreira *et al.* 2011d; Moreira and Campos 2012), Pará (Nieser 1970; Sampaio and Py-Daniel 1993; Moreira *et al.* 2011d) and Rondônia (Moreira *et al.* 2011d); CW – Mato Grosso (Fernandes and Wanzeler 2010; Moreira *et al.* 2011d).

**Material examined:** N – 1 apterous male, 3 apterous females (INPA), **Roraima**, Área Indígena Yanomami, Serra de Surucucu, 27.XI.1991, V. Py-Daniel and U. Barbosa col.; 2 apterous males, 3 apterous females, 1 nymph (INPA), **Roraima**, Área Indígena Yanomami, Parque Xitei/Xidéa, Igarapé das Irmãs, 23.VI.1997, V. Py-Daniel and U. Barbosa col.

**Remarks:** This species is common in North Brazil and was also verified in the Central-West Region. Herein it is recorded for the first time from Roraima state.

### ***Cylindrostethus palmaris* Drake and Harris, 1934**

**Geographic distribution in Brazil:** N – Amapá (Moreira *et al.* 2011d), Amazonas (Drake and Harris 1934; Kuitert 1942; Nieser 1970; Pereira and Melo 2007; Moreira *et al.* 2011d), Pará (Drake and Harris 1930; Kuitert 1942; Nieser 1970; Sampaio and Py-Daniel 1993; Moreira *et al.* 2011d) and Rondônia (Sampaio and Py-Daniel 1993); CW – Mato Grosso (Nieser 1970; Fernandes and Wanzeler 2010; Moreira *et al.* 2011d; Moreira and Campos 2012); SE – Minas Gerais (Nieser and Melo 1997; Melo and Nieser 2004; Souza *et al.* 2006), Rio de Janeiro (Moreira *et al.* 2011d) and São Paulo (Castanhole *et al.* 2010, Moreira *et al.* 2011d).

**Material examined:** N – 2 apterous males (INPA), **Roraima**, Área Indígena Yanomami, Parque Indígena Xitei/Xidéa, Rio Parima, 08.X.1997, V. Py-Daniel and U. Barbosa col.; NE – 1 apterous male, 1 apterous female (INPA), **Bahia**, Wenceslau Guimarães, Rio Samambaia (13°31'51,2" S, 39°42'37,5" W), 09.X.2010, D. França col.; 1 apterous male, 1 apterous female (DPIC), **Bahia**, Camacan, RPPN Serra Bonita, Fazenda Paris, D. França col.; 1 apterous male, 4 macropterous males, 7 macropterous females (INPA), **Maranhão**, Timon, Estrada do Portal da Amazônia (05°03'03,3" S, 43°01'52,2" W), 09.VI.2011, N. Hamada, P.V. Cruz and R.B. Querino col.; 2 apterous males (INPA), **Rio Grande do Norte**, Parnamirim, 09.IX.2011, R. Boldrini col.

**Remarks:** From the six species of the genus that occur in Brazil, five have been recorded only from the North Region, and *C. palmaris* is the only species recorded from the Southeast so far. We present the first records from Roraima state and from the Northeast Region. Given the record of this species from Argentina (Mazzucconi *et al.* 2008), it is likely to occur also in South Brazil.

### ***Halobtopsias platensis* (Berg, 1879)**

**Geographic distribution in Brazil:** CW – Distrito Federal (Nieser 1970) and Mato Grosso (Nieser 1970); SE – Minas

Gerais (Drake and Harris 1938; Drake and Harris 1941; Nieser and Melo 1997, 1999; Pelli *et al.* 2006; Souza *et al.* 2006; Moreira *et al.* 2011d), Rio de Janeiro (Jurberg and Gomes 1983; Ribeiro *et al.* 2010; Moreira *et al.* 2011d) and São Paulo (Castanhole *et al.* 2010; Moreira *et al.* 2011d; Moreira and Campos 2012); S – Paraná (Moreira and Campos 2012) and Rio Grande do Sul (Nieser 1970).

**Material examined:** NE – 1 apterous male (DPIC), **Bahia**, Parque Nacional do Descobrimento, 30.VII.2009, M.A.P. Horta col.; 6 apterous females (INPA), **Piauí**, Piracuruca, Parque Nacional de 7 Cidades (04°05'57,1" S, 41°40'46,8" W), 30.V.2011, N. Hamada, P.V. Cruz and R.B. Querino col.; 2 macropterous females, 8 nymphs (INPA), same data, except Riacho Lajeado (04°06'00,7" S, 41°42'53,5" W).

**Remarks:** This genus has four described species, all of which are recorded from Brazil. *Halobtopsias platensis* is the species with the largest geographic distribution, but it is recorded for the first time from the Northeast Region.

### ***Limnogonus aduncus aduncus* Drake and Harris, 1933**

**Geographic distribution in Brazil:** N – Amazonas (Drake and Harris 1935; Kuitert 1942; Nieser 1970; Pereira and Melo 2007; Moreira *et al.* 2011d) and Pará (Nieser 1970; Moreira *et al.* 2011d; Moreira and Campos 2012); CW – Mato Grosso (Mazzucconi and Bachmann 1993; Heckman 1998; Fernandes and Wanzeler 2010; Moreira *et al.* 2011d) and Mato Grosso do Sul (Moreira and Campos 2012); SE – Espírito Santo (Nieser and Melo 1997; Moreira and Campos 2012), Minas Gerais (Nieser and Melo 1997; Melo and Nieser 2004; Souza *et al.* 2006; Moreira *et al.* 2011d), Rio de Janeiro (Drake and Harris 1933; Jurberg and Gomes 1983; Moreira *et al.* 2011d; Moreira and Campos 2012) and São Paulo (Castanhole *et al.* 2008; Moreira *et al.* 2011d); S – Paraná (Moreira and Campos 2012) and Santa Catarina (Moreira *et al.* 2011d).

**Material examined:** N – 1 apterous male (INPA), **Roraima**, Área Indígena Yanomami, Parque Xitei/Xidéa, Lagos, 08.VII.1996, V. Py-Daniel and U. Barbosa col.; NE – 1 apterous male, 1 apterous female, 1 nymph (DPIC), **Pernambuco**, Goiana, Carne de Vaca, water reservoir, 28.XI.2006, M.A.A. Souza col.; 1 apterous male, 1 apterous female, 1 macropterous female (DPIC), same data, except 23.IV.2007; S – 2 macropterous males, 2 apterous females, 1 macropterous female (DPIC), **Paraná**, Foz do Iguaçu, Rio Tamanduá, 24.VIII.2000, A.L. Melo col.

**Remarks:** In Brazil, this species has previous records from the North, Central-West, Southeast and South regions. In this study, it is recorded for the first time from Roraima state and from the Northeast Region, extending its area of occurrence to all regions of the country.

### ***Limnogonus ignotus* Drake and Harris, 1934**

**Geographic distribution in Brazil:** N – Pará (Moreira *et al.* 2011d); CW – Distrito Federal (Nieser 1970), Mato Grosso (Nieser 1970; Heckman 1998; Cabette *et al.* 2010) and Mato Grosso do Sul (Drake and Harris 1934); SE – Minas Gerais (Nieser and Melo 1997; Pelli and Barbosa 1998; Melo and Nieser 2004; Moreira *et al.* 2011d) and Rio de Janeiro (Moreira and Campos 2012); S – Santa Catarina and Rio Grande do Sul (Moreira *et al.* 2011d).

**Material examined:** NE – 1 macropterous female (DPIC), **Pernambuco**, Goiana, Carne de Vaca, Riacho Doce,

19.III.2007, M.A.A. Souza col.

**Remarks:** This species has been recorded from four regions of Brazil. Here it is newly reported from the Northeast Region, expanding its area of occurrence to all regions of the country.

#### *Limnogonus profugus* Drake and Harris, 1930

**Geographic distribution in Brazil:** NE – Paraíba (Moreira and Campos 2012); CW – Goiás (Moreira *et al.* 2011d), Mato Grosso (Drake and Harris 1930; Cabette *et al.* 2010; Fernandes and Wanzeler 2010) and Mato Grosso do Sul (Drake and Harris 1930); SE – Minas Gerais (Nieser and Melo 1997; Vianna and Melo 2003; Souza *et al.* 2006; Moreira and Campos 2012), Rio de Janeiro (Kuitert 1942; Ribeiro *et al.* 2010; Moreira *et al.* 2011d) and São Paulo (Kuitert 1942; Moreira *et al.* 2011d; Moreira and Campos 2012).

**Material examined:** NE – 1 apterous female (DPIC), **Pernambuco**, Goiana, Carne de Vaca, water reservoir, 15.X.2007, M.A.A. Souza col.; 1 apterous male, 3 macropterous females, 4 nymphs (DPIC), **Pernambuco**, Ipojuca, Porto de Galinhas, 12.VIII.2006, A.L. Melo col.

**Remarks:** In Brazil, this species has been previously recorded from Central-West and Southeast regions. The records from Argentina and Venezuela presented by Mazzucconi and Bachmann (1993) suggest that this species also occurs in South and North regions of Brazil, respectively. Here it is newly reported from the Northeast Region.

#### *Limnogonus recurvus* Drake and Harris, 1930

**Geographic distribution in Brazil:** N – Amazonas (Moreira *et al.* 2011d), Pará (Kuitert 1942; Nieser 1970; Sampaio and Py-Daniel 1993) and Rondônia (Kuitert 1942); CW – Mato Grosso (Drake and Harris 1930; Fernandes and Wanzeler 2010; Moreira *et al.* 2011d); SE – Minas Gerais (Nieser and Melo 1997) and São Paulo (Moreira and Campos 2012).

**Material examined:** NE – 2 apterous males, 1 apterous female, 1 nymph (DPIC), **Pernambuco**, Goiana, Carne de Vaca, 23.VII.2007, M.A.A. Souza col.

**Remarks:** This species has been previously recorded from three regions of the country. Here it is reported for the first from the Northeast Region.

#### *Neogerris lubricus* White, 1879

**Geographic distribution in Brazil:** N – Amazonas (White 1879; Drake and Harris 1935; Moreira *et al.* 2011d), Pará (Kuitert 1942; Nieser 1970; Moreira *et al.* 2011d; Moreira and Campos 2012) and Rondônia (Kuitert 1942; Moreira *et al.* 2011d); CW – Mato Grosso (Nieser 1970; Fernandes and Wanzeler 2010; Moreira *et al.* 2011d) and Mato Grosso do Sul (Moreira and Campos 2012); SE – Minas Gerais (Nieser 1994; Nieser and Melo 1997; Pelli and Barbosa 1998; Melo and Nieser 2004); Rio de Janeiro (Moreira and Campos 2012) and São Paulo (Moreira *et al.* 2011d).

**Material examined:** N – 1 macropterous female (INPA), **Amapá**, Tartarugalzinho, Rio Tracajatuba, Cachoeira da Funasa (01°02'47,1" N, 51°02'46,5" W), 11.VIII.2011, A.M. Pes, P.V. Cruz, A.S. Fernandes and N. Hamada col.; NE – 1 apterous female (DPIC), **Bahia**, Parque Nacional do Descobrimento, 30.VII.2009, M.A.P. Horta col.

**Remarks:** This species has been previously recorded from three regions of the country. This study documents this species for the first time from the Northeast Region and from Amapá state, despite of some previous records from the North Region.

#### *Ovatametra minima* Kenaga, 1942

**Geographic distribution:** N – Rondônia (Kenaga, 1942).

**Material examined:** N – 2 apterous females (INPA), **Amazonas**, São Gabriel da Cachoeira, Igarapé Miúá (00°06'33,2" S, 66°52'24,2" W), 24.VIII.2011, R.L. Ferreira-Keppler, P.V. Cruz, A. Fernandes and E.A. Reis col.; 1 apterous female, 1 nymph (INPA), **Amazonas**, São Gabriel da Cachoeira, Abaixo do Distrito de Camanaus (00°08'33,6" S, 66°55'43,9" W), 25.VIII.2011, R.L. Ferreira-Keppler, P.V. Cruz, A. Fernandes and E.A. Reis col.

**Remarks:** So far, only the record from the type locality was known. In this study this species is recorded for the first time from Amazonas state, in a municipality that is close to Venezuela.

#### *Ovatametra obesa* Kenaga, 1942

**Geographic distribution:** N – Amazonas (Kenaga 1942; Nieser 1970; Pereira and Melo 2007; Moreira *et al.* 2011b) and Pará (Nieser 1970).

**Material examined:** N – 1 apterous female (DPIC), **Bahia**, Parque Nacional do Descobrimento, 30.VII.2009, M.A.P. Horta col.

**Remarks:** In Brazil, *Ovatametra* has previous records from North, Southeast and South regions. This study records the genus for the first time from the Northeast Region.

#### *Tachygerris adamsoni* (Drake, 1942)

**Geographic distribution in Brazil:** N – Amazonas (Nieser 1970) and Pará (Nieser 1970; Moreira *et al.* 2011d); CW – Mato Grosso (Nieser 1970; Fernandes and Wanzeler 2010); SE – Minas Gerais (Nieser and Melo 1997) and Rio de Janeiro (Drake 1942; Moreira *et al.* 2011d).

**Material examined:** NE – 2 macropterous males, 2 macropterous females (INPA), **Piauí**, Caracol, Parque Nacional Serra das Confusões (9°13'14,9" S, 43°29'20,4" W), 12.XII.2010, D. França col.; 1 macropterous male, 1 macropterous female, same data, except DPIC.

**Remarks:** This species was heretofore recorded from three regions of Brazil, and is herein documented for the first time from the Northeast Region.

### MESOVELIIDAE

#### *Mesovelgia zeteki* Harris and Drake, 1941

**Geographic distribution in Brazil:** N – Amazonas and Pará (Moreira *et al.* 2008).

**Material examined:** N – 5 macropterous females (INPA), **Amapá**, Serra do Navio, Rio Cachaço, Cachoeira do Fernando (00°53'18,8" N, 52°01'22,9" W), 02.VIII.2011, A.M. Pes, P.V. Cruz and A.S. Fernandes col.

**Remarks:** Until now this species had been recorded only from the North Region. Herein it is recorded for the first time from Amapá state.

#### *Mesoveloidea williamsi* Hungerford, 1929

**Geographic distribution in Brazil:** SE – Minas Gerais

(Nieser and Melo 1997; Souza *et al.* 2006) and Rio de Janeiro (Moreira *et al.* 2006; Moreira *et al.* 2011d).

**Material examined:** N – 6 macropterous males, 6 macropterous females (INPA), **Amapá**, Serra do Navio, Rio Cachaço, Cachoeira do Fernando (00°53'18,8" N, 52°01'22,9" W), 02.VIII.2011, A.M. Pes, P.V. Cruz and A.S. Fernandes col.; 1 macropterous male, 5 macropterous females (INPA), **Amapá**, Tartarugalzinho, Rio Tracajatuba, Cachoeira da Funasa (01°02'47,1"N, 51°02'46,5"W), 11.VIII.2011, A.M. Pes, P.V. Cruz, A.S. Fernandes and N. Hamada col.; 1 macropterous female (INPA), **Amazonas**, São Gabriel da Cachoeira, Igarapé Miúá (00°06'14,2" S, 66°52'31,3" W), 24.VIII.2011, R.L. Ferreira-Keppler, P.V. Cruz, A.S. Fernandes and E.A. Reis col.

**Remarks:** Despite of the geographic records of this species from Northern South America, in Brazil it was previously recorded only from the Southeast Region. Herein we register this species for the first time from the North Region.

## VELIIDAE

### *Microvelia longipes* Uhler, 1894

**Geographic distribution in Brazil:** N – Amazonas (Polhemus 1990; Moreira and Campos 2012); NE – Bahia (Moreira and Campos 2012); CW – Mato Grosso do Sul (Drake and Plaumann 1953; Moreira *et al.* 2011c); SE – Espírito Santo (Moreira *et al.* 2010), Minas Gerais (Nieser and Melo 1997; Melo and Nieser 2004) and São Paulo (Moreira and Barbosa 2011); S – Santa Catarina (Drake and Plaumann 1955).

**Material examined:** N – 1 macropterous male, **Roraima**, Área Indígena Yanomami, Parque Xitei/Xidea, Lagos, 08.VII.1996, V. Py-Daniel and U. Barbosa col.

**Remarks:** This species is widely distributed, occurring from North to South America. Because of this fact, its occurrence on Roraima state is likely, and the record is given here.

### *Oiovelia brasiliensis* Moreira, Nessimian and Rúdio, 2010

**Geographic distribution in Brazil:** SE – Espírito Santo (Moreira *et al.* 2010), Minas Gerais (Moreira and Barbosa 2012) and São Paulo (Moreira and Barbosa 2011); S – Rio Grande do Sul (Moreira and Campos 2012).

**Material examined:** SE – 1 macropterous female (DPIC), **Minas Gerais**, Santana do Riacho, Lapinha da Serra (19°10'08" S, 43°42'51" W), Cachoeira do Paraíso, 29.I.2011, H.D.D. Rodrigues col.

**Remarks:** Known only from the Southeast and South Regions. In this study, the second record from Minas Gerais state is presented.

### *Oiovelia cunucunumana* Drake and Maldonado-Capriles, 1952

**Geographic distribution in Brazil:** SE – São Paulo (Moreira and Barbosa 2011); S – Santa Catarina (Spangler 1986).

**Material examined:** N – 2 macropterous males, 2 macropterous females (INPA), **Amapá**, Serra do Navio, Rio Cachaço, Cachoeira do Fernando (00°53'18,8" N, 52°01'22,9" W), 02.VIII.2011, A.M. Pes, P.V. Cruz and A.S.

Fernandes col.; 8 macropterous males, 6 macropterous females (INPA), **Amazonas**, Barcelos, Comunidade Ucuqui, Rio Jauari, 23.VII.2009, N. Ferreira-Jr and J.L. Nessimian col.; SE – 1 macropterous female (DPIC), **Minas Gerais**, Luz, Ribeirão Jorge Grande (19°40'13" S, 45°36'37" W), 20.II.2010, H.D.D. Rodrigues col.; 7 macropterous males, 4 macropterous females (DPIC), same data, except 13.III.2010, H.D.D. Rodrigues and G.J.C. Vianna col.

**Remarks:** Since the work of Spangler (1986), this species was known in Brazil only from the Santa Catarina state. Recently, Moreira and Barbosa (2011) reported this species from the Southeast Region. In this study, the genus is recorded for the first time from the North Region, and the second record of this species from the Southeast Region is presented, being the first record from Minas Gerais state.

### *Paravelia bullialata* Polhemus and Polhemus, 1984

**Geographic distribution in Brazil:** N – Amazonas (Polhemus and Polhemus 1984; Pereira and Melo 2007).

**Material examined:** N – 1 macropterous male (INPA), **Rondônia**, Igarapé Pé de Serra, Bacia do Rio Candeias, 04.VIII.1985, V. Py-Daniel and L. Aquino col.

**Remarks:** This species was known in Brazil only from Amazonas state. Here it is recorded for the first time from Rondônia state.

### *Paravelia capixaba* Moreira, Nessimian and Rúdio, 2010

**Geographic distribution:** N – Amazonas (Moreira *et al.* 2011a; Moreira and Campos 2012) and Pará (Moreira and Campos 2012); SE – Espírito Santo (Moreira *et al.* 2010).

**Material examined:** SE – 18 apterous males, 15 apterous females, 1 nymph (DPIC), **Minas Gerais**, Luz, Poça Temporária Próximo ao Ribeirão Jorge Pequeno (19°43'32" S, 45°32'58" W), 04.I.2011, H.D.D. Rodrigues col.

**Remarks:** Described from the Southeast Region, but recently recorded from the North Region, which expanded its occurrence to the Amazon. This study records the species for the first time from Minas Gerais state.

### *Platyvelia brachialis* (Stål, 1860)

**Geographic distribution in Brazil:** CW – Goiás (Polhemus and Polhemus 1993); SE – Espírito Santo (Nieser and Melo 1997; Moreira *et al.* 2010), Minas Gerais (Nieser and Melo 1997; Melo and Nieser 2004; Souza *et al.* 2006) and Rio de Janeiro (Stål 1860; Ribeiro *et al.* 2010); S – Santa Catarina (Polhemus and Polhemus 1993).

**Material examined:** NE – 1 macropterous male, 1 micropterous female, 2 nymphs (DPIC), **Pernambuco**, Goiana, Carne de Vaca, water reservoir, 26.II.2007, M.A.A. Souza col.

**Remarks** This species was previously recorded from three regions of Brazil, and is herein documented for the first time from the Northeast Region. The records from Peru and Surinam presented by Polhemus and Polhemus (1993) suggest that this species might also occur in the North Region.

### *Rhagovelia tenuipes* Champion, 1898

**Geographic distribution in Brazil:** N – Amazonas (Pereira and Melo 2007; Lopes *et al.* 2008) and Pará (Bacon 1956); SE – Minas Gerais (Nieser and Melo 1997; Melo and Nieser

2004; Pelli *et al.* 2006; Souza *et al.* 2006), Espírito Santo (Moreira *et al.* 2010), Rio de Janeiro (Moreira and Ribeiro 2009) and São Paulo (Moreira and Barbosa 2011).

**Material examined:** N – 3 apterous males, 3 apterous females (INPA), **Roraima**, Área Indígena Yanomami, Parque Indígena Xitei/Xidéa, Rio Parima, 08.X.1997, V. Py-Daniel and U. Barbosa col.

**Remarks:** Despite being a common species in Northern South America, it is recorded for the first time from Roraima state.

### ***Stridulivelia astralis* (Drake and Harris, 1938)**

**Geographic distribution in Brazil:** N – Tocantins (Polhemus and Spangler 1995; Moreira *et al.* 2011c); CW – Mato Grosso (Polhemus and Spangler 1995) and Mato Grosso do Sul (Drake and Harris 1938).

**Material examined:** SE – 2 micropterous males, 1 micropterous female (DPIC), **Minas Gerais**, Luz, Ribeirão Estiva (19°45'11" S, 45°31'40" W), 09.I.2010, H.D.D. Rodrigues col.; 4 micropterous males, 1 micropterous female (DPIC), **Minas Gerais**, Luz, Ribeirão Jorge Pequeno (19°43'42" S, 45°32'57" W), 09.I.2010, H.D.D. Rodrigues col.; 3 micropterous males (DPIC), temporary pond near to Ribeirão Jorge Pequeno (19°43'32" S, 45°32'58" W), 04.I.2011, H.D.D. Rodrigues col.; 1 micropterous female (DPIC), **Minas Gerais**, Januária, São Joaquim, Rio Jaboticaba, 02.II.2010, A.L. Melo and H.D.D. Rodrigues col.

**Remarks:** First record from the Southeast Region. The record from Argentina by Mazzucconi and Bachmann (1997) suggests that this species also occurs in South Brazil.

### ***Stridulivelia quadrispinosa* (Hungerford, 1929)**

**Geographic distribution in Brazil:** N – Pará (Hungerford 1929; Polhemus and Spangler 1995; Moreira *et al.* 2011c); SE - Espírito Santo (Moreira *et al.* 2010).

**Material examined:** SE – 8 micropterous males, 6 micropterous females (DPIC), **Minas Gerais**, Luz, Ribeirão Jorge Pequeno (19°43'42" S, 45°32'57" W), 09.I.2010, H.D.D. Rodrigues col.; 3 micropterous males, 4 micropterous females, 1 macropterous female (DPIC), same data, except 22.II.2010; 1 micropterous female (DPIC), **Minas Gerais**, Luz, Ribeirão Jorge Grande (19°40'13" S, 45°36'37" W), 06.I.2010, H.D.D. Rodrigues col.; 2 micropterous females (DPIC), **Minas Gerais**, Luz, Córrego Campo do Meio (19°44'41" S, 45°32'24" W), 16.X.2010, H.D.D. Rodrigues col.

**Remarks:** This species is reported for the second time from the Southeast Region, and for the first time from Minas Gerais state.

### ***Stridulivelia tersa* (Drake and Harris, 1941)**

**Geographic distribution in Brazil:** N – Amazonas (Polhemus and Spangler 1995; Pereira and Melo 2007) and Pará (Moreira and Campos 2012); CW – Mato Grosso (Polhemus and Spangler 1995); SE – Espírito Santo (Moreira *et al.* 2010) and Minas Gerais (Melo and Nieser 2004).

**Material examined:** N – 2 micropterous females (INPA), **Pará**, Igarapé Tentativa, Tributário do Rio Mapuera, 08.VI.1986, V. Py-Daniel and U. Barbosa col.

**Remarks:** It is one of the commonest species of the

genus in Brazil, with records from three regions. Here it is recorded for the second time from Pará state.

**ACKNOWLEDGMENTS:** The authors are grateful to all collectors for providing part of the specimens in this study. The material from Amazonas was provided by a research project supported by PRONEX-CNPq (MCTI)-FAPEAM, INPA(MCTI) and FINEP/Projeto Fronteira. Part of the material collected in the Northeast region was supported by a CNPq grant to Neusa Hamada (INPA).

### **LITERATURE CITED**

- Andersen, N.M. 1982. The semiaquatic bugs (Hemiptera, Gerromorpha) phylogeny, adaptations, biogeography and classification. *Entomograph* 3: 1-455.
- Bacon, J.A. 1956. A taxonomic study of the genus *Rhagovelia* (Hemiptera, Veliidae) of the Western Hemisphere. *University of Kansas Science Bulletin* 38(10): 695-913.
- Cabette, H.S.R., N.F.S. Giehl, K. Dias-Silva, L. Juen and J.D. Batista. 2010. Distribuição de Nepomorpha e Gerromorpha (Insecta: Heteroptera) da Bacia Hidrográfica do Rio Suiá-Miçú, MT: riqueza relacionada à qualidade da água e do hábitat; p. 113-137 In Santos, J.E., C. Galbiati and L.E. Moschini (org.). *Gestão e Educação Ambiental – Água, Biodiversidade e Cultura*. Volume II. São Paulo: RiMa Editora.
- Castanhole, M.M.U., L.L.V. Pereira, H.V. Souza, H.E.M.C. Bicudo, L.A.A. Costa and M.M. Itoyama. 2008. Heteropicnotic chromatin and nucleolar activity in meiosis and spermiogenesis of *Limnogonus aduncus* (Heteroptera, Gerridae): a stained nucleolar organizing region that can serve as a model for studying chromosome behavior. *Genetics and Molecular Research* 7(4): 1398-1407.
- Castanhole, M.M.U., L.L.V. Pereira, H.V. Souza and M.M. Itoyama. 2010. Spermatogenesis and karyotypes of three species of water striders (Gerridae, Heteroptera). *Genetics and Molecular Research* 9(3): 1343-1356.
- Drake, C.J. 1942. A new species of *Tenagogonus* Stål (Hemiptera-Gerridae). *Revista Chilena de Historia Natural* 44: 108-109.
- Drake, C.J. 1957. New Neotropical Halobatinae (Hemiptera: Gerridae). *Bulletin of the Brooklyn Entomological Society* 52: 128-130.
- Drake, C.J. and H.M. Harris. 1930. Notes on some South American Gerridae (Hemiptera). *Annals of the Carnegie Museum* 19(4): 235-239.
- Drake, C.J. and H.M. Harris. 1933. Some miscellaneous Gerridae in the collection of the Museum of Comparative Zoology (Hemiptera). *Psyche* 39: 107-112.
- Drake, C.J. and H.M. Harris. 1934. The Gerrinae of the Western Hemisphere (Hemiptera). *Annals of the Carnegie Museum* 23: 179-241.
- Drake, C.J. and H.M. Harris. 1935. Notes on some American Gerrids (Hemiptera). *Arkiv för Zoologi* 28B(2): 1-4.
- Drake, C.J. and H.M. Harris. 1938. Veliidae y Gerridae sudamericanos descriptos por Carlos Berg. *Notas del Museo de La Plata* 3(13): 199-204.
- Drake, C.J. and H.M. Harris. 1941. Concerning some halobatinids from the Western Hemisphere (Hemip. Gerridae). *Iowa State College Journal of Science* 15: 237-240.
- Drake, C.J. and F. Plaumann. 1953. A new waterstrider from Brazil (Hemiptera: Veliidae). *Dusenía* 4(5-6): 414-416.
- Drake, C.J. and F. Plaumann. 1955. Some *Microvelia* from Southern Brazil (Hemiptera: Veliidae). *Bulletin of the Southern California Academy of Sciences* 54(1): 22-24.
- Fernandes, J.A.M. and E. Wanzeler. 2010. Percevejos aquáticos; p. 24-25, 101-102 In A.C.M. Oliveira, J.B. Santos and M.C. Santos-Costa (ed.). *Os animais da Tanguro, Mato Grosso: diversidade na zona de transição entre a Floresta Amazônica e o Cerrado*. Belém: MPEG, UFPA, IPAM.
- Heckman, C.W. 1998. The seasonal succession of biotic communities in wetlands of the tropical wet-and-dry climatic zone: V. Aquatic invertebrate communities in the Pantanal of Mato Grosso, Brazil. *International Review of Hydrobiology* 83(1): 31-63.
- Hungerford, H.B. 1929. Some new semi-aquatic Hemiptera from South America with a record of stridulatory devices (Veliidae-Velia). *Journal of the Kansas Entomological Society* 2(3): 50-59.
- Jurberg, J. and C.L. Gomes. 1983. Estudo morfológico de *Limnogonus aduncus* Drake and Harris, 1932 e *Halobatopsis platensis* (Berg, 1879) e suas genitálias externas (Hemiptera – Gerridae). *Memórias do Instituto Oswaldo Cruz* 78(2): 199-208.
- Lopes, M.J.N., A.M.O. Pes, C.A.S. Azevêdo, P. Reis, D.L.V. Pereira, J.M.F. Ribeiro, N. Hamada, R.L. Ferreira-Keppeler and J.A. Rafael. 2008. Insetos Aquáticos; p. 123-129 In Oliveira, M.L., F.B. Baccaro, R. Braganeto and W.E. Magnusson (org.). *Reserva Ducke: A Biodiversidade Amazônica Através de uma Grade*. Manaus: Áttema Design Editorial.
- Kenaga, E.E. 1942. A new genus in the Halobatinae (Gerridae-Hemiptera). *Journal of the Kansas Entomological Society* 15(4): 136-141.
- Kuitert, L.C. 1942. Gerrinae in University of Kansas Collections. *University of Kansas Science Bulletin* 28(7): 113-143.

- Mazzucconi, S.A. and A.O. Bachmann. 1993. Familia Gerridae (Heteroptera): Estudio comparativo de las alas de las especies argentinas, chilenas y uruguayas. *Revista de la Sociedad Entomológica Argentina* 52(1-4): 87-99.
- Mazzucconi, S.A. and A.O. Bachmann. 1997. Los géneros *Oiovelia* y *Stridulivelia* de la Argentina (Heteroptera: Veliidae). *Revista de la Sociedad Entomológica Argentina* 56(1-4): 62.
- Mazzucconi, S.A., M. López Ruf and A.O. Bachmann. 2008. Gerromorpha y Nepomorpha (Insecta: Heteroptera) del Parque Provincial Salto Encantado del Valle del Cuñá Pirú, Provincia de Misiones, Argentina. *Lundiana* 9(1): 57-66.
- Melo, A.L. and N. Nieser. 2004. Faunistical notes on aquatic Heteroptera of Minas Gerais (Brazil): An annotated list of Gerromorpha and Nepomorpha collected near Januária, MG. *Lundiana* 5(1) 43-49.
- Moreira, F.F.F. and G.G.F. Campos. 2012. New distributional data concerning some Gerromorpha (Insecta: Hemiptera: Heteroptera) from Brazil. *Check List* 8(3): 542-547.
- Moreira, F.F.F. and J.F. Barbosa. 2011. The Veliidae (Hemiptera: Heteroptera: Gerromorpha) from São Paulo State, Brazil: new species, description of the male of *Microvelia ioana* Drake and Hottes, 1952, and synonymical and distributional notes. *Annales de Limnologie* 47(3): 297-311.
- Moreira, F.F.F. and J.F. Barbosa. 2012. Two new species of *Paravelia* Breddin, 1898 and distributional notes concerning the Veliidae from Minas Gerais State, Brazil (Insecta: Hemiptera: Heteroptera: Gerromorpha). *Zootaxa* 3354: 58-68.
- Moreira, F.F.F. and J.R.I. Ribeiro. 2009. Two new *Rhagovelia* (Heteroptera: Veliidae) and new records for twelve species in southeastern Brazil. *Aquatic Insects* 31(1): 45-61.
- Moreira, F.F.F., J.F. Barbosa and J.L. Nessimian. 2011a. Description of *Microvelia urucara* sp. nov. and new distributional data on veliids (Insecta: Heteroptera: Veliidae) from the Amazon River floodplain, Brazil. *Zoologia* 28(5): 658-662.
- Moreira, F.F.F., J.R.I. Ribeiro and J.L. Nessimian. 2006. Description of the male and the southernmost record of *Mesoveloidea williamsi* Hungerford, 1929 (Hemiptera: Heteroptera: Mesoveliidae). *Zootaxa* 1269: 51-56.
- Moreira, F.F.F., J.R.I. Ribeiro and J.L. Nessimian. 2008. A synopsis of the species of *Mesovelia* (Insecta: Heteroptera: Mesoveliidae) occurring in the floodplain of the Amazon River, Brazil, with redescriptions of *Mesovelia mulsanti* White and *M. zeteki* Harris and Drake. *Acta Amazonica* 38(3): 539-550.
- Moreira, F.F.F., V.P. Alecrim, J.R.I. Ribeiro and J.L. Nessimian. 2011b. Identification key to the Gerridae (Insecta: Heteroptera: Gerromorpha) from the Amazon River floodplain, Brazil, with new records for the Brazilian Amazon. *Zoologia* 28(2): 269-279.
- Moreira, F.F.F., J.F. Barbosa, J.R.I. Ribeiro and V.P. Alecrim. 2011c. Checklist and distribution of semi-aquatic and aquatic Heteroptera (Gerromorpha and Nepomorpha) occurring in Brazil. *Zootaxa* 2958: 1-74.
- Moreira, F.F.F., J.L. Nessimian, J.A. Rúdio and F.F. Salles. 2010. New species and new records of Veliidae from Espírito Santo State and adjacent Minas Gerais State, Brazil, with notes on nomenclature (Insecta: Heteroptera: Gerromorpha). *Journal of Natural History* 44(45-46): 2761-2801.
- Moreira, F.F.F., J.R.I. Ribeiro, J.L. Nessimian, M.M. Itoyama, M.M.U. Castanhole and L.L.V. Pereira. 2011d. New records and distribution expansions for Neotropical water-striders (Insecta: Heteroptera: Gerromorpha). *Check List Journal of Species Lists and Distributions* 7(3): 303-309.
- Nieser, N. 1970. Gerridae of Suriname and the Amazon with additional records of other neotropical species. *Studies on the Fauna of Suriname and Other Guyanas* 12(47): 94-138.
- Nieser, N. 1994. A new species and a new status in *Neogerris* Matsumura (Heteroptera: Gerridae) with a key to American species. *Storkia* 3: 27-37.
- Nieser, N. and A.L. Melo. 1997. *Os heterópteros aquáticos de Minas Gerais. Guia introdutório com chave de identificação para as espécies de Nepomorpha e Gerromorpha*. Belo Horizonte: Editora UFMG. 177 p.
- Nieser, N. and A.L. Melo. 1999. A new species of *Halobatopsis* (Heteroptera: Gerridae) from Minas Gerais (Brazil), with a key to the species. *Entomologische Berichten* 59(7): 97-102.
- Pelli, A. and F.A.R. Barbosa. 1998. Insetos coletados em *Salvinia molesta* Mitchell (Salviniaceae), com especial referência às espécies que causam dano à planta, na lagoa Olhos d'Água, Minas Gerais, Brasil. *Revista Brasileira de Entomologia* 42(1-2): 9-12.
- Pelli, A., N. Nieser and A.L. Melo. 2006. Nepomorpha and Gerromorpha (Insecta: Heteroptera) from the Serra da Canastra, southwestern Minas Gerais state, Brazil. *Lundiana* 7(1): 67-72.
- Pereira, D.L.V. and A.L. Melo. 2007. Aquatic and semiaquatic Heteroptera (Insecta) from Pitinga, Amazonas, Brazil. *Acta Amazonica* 37(4): 643-648.
- Polhemus, J.T. 1990. Surface wave communication in water striders; field observations of unreported taxa (Heteroptera: Gerridae, Veliidae). *Journal of the New York Entomological Society* 98(3): 383-384.
- Polhemus, J.T. and D.A. Polhemus. 1984. Studies on Neotropical Veliidae (Hemiptera) VII. Descriptions of four new species of *Paravelia* Breddin. *Amazoniana* 8(3): 339-349.
- Polhemus, J.T. and D.A. Polhemus. 1993. Two new genera for New World Veliinae (Heteroptera: Veliidae). *Journal of the New York Entomological Society* 101(3): 391-398.
- Polhemus, J.T. and D.A. Polhemus. 2008. Global diversity of true bugs (Heteroptera; Insecta) in freshwater. *Hydrobiologia* 595: 379-391.
- Polhemus, J.T. and P.J. Spangler. 1995. A review of the genus *Stridulivelia* Hungerford and two new species (Heteroptera: Veliidae) from South America. *Proceedings of the Entomological Society of Washington* 97(1): 128-152.
- Ribeiro, J.R.I., F.F.F. Moreira, V.P. Alecrim, J.F. Barbosa and J.L. Nessimian. 2010 (2009). Espécies de heterópteros dulciaquícolos (Hemiptera, Heteroptera, Gerromorpha e Nepomorpha) registradas no Estado do Rio de Janeiro, Brasil. *Arquivos do Museu Nacional* 67(3-4): 303-312.
- Sampaio, R.T.M. and V. Py-Daniel. 1993. A subfamília Gerrinae (Hemiptera: Heteroptera: Gerridae) na bacia hidrográfica do Rio Trombetas, Pará, Brasil. *Acta Amazonica* 23(1): 83-94.
- Shaw, J.G. 1933. A study of the genus *Brachymetra* (Hemiptera - Gerridae). *University of Kansas Science Bulletin* 21(3): 221-233.
- Souza, M.A.A., A.L. Melo and G.J.C. Vianna. 2006. Heterópteros aquáticos oriundos do Município de Mariana, MG. *Neotropical Entomology* 35(6): 803-810.
- Spangler, P.J. 1986. Two new species of water-striders of the genus *Oiovelia* from the Tepui Cerro de la Neblina, Venezuela (Hemiptera: Veliidae). *Proceedings of the Entomological Society of Washington* 88(3): 438-450.
- Stål, C. 1860. Bidrag till Rio Janeiro-Traktens Hemipter-Fauna. *Kongliga Svenska Vetenskaps Akademiens Handlingar* 2(7): 1-84.
- Vianna, G.J.C. and A.L. Melo. 2003. Distributional patterns of aquatic and semi aquatic Heteroptera in Retiro das Pedras, Brumadinho, Minas Gerais, Brazil. *Lundiana* 4(2): 125-128.
- White, F.B. 1879. Descriptions of new Hemiptera. *Journal of the Linnean Society of London, Zoology* 14: 482-489.

RECEIVED: January 2012

ACCEPTED: June 2012

PUBLISHED ONLINE: September 2012

EDITORIAL RESPONSIBILITY: Fabio de Oliveira Roque