New records and checklist of aquatic and semi-aquatic Heteroptera (Insecta: Hemiptera: Gerromorpha and Nepomorpha) from the Southern region of Mato Grosso do Sul, Brazil

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Abstract: A list of aquatic and semi-aquatic Heteroptera species from the southern region of Mato Grosso do Sul State is presented. The material was collected between 2008 and 2009. Samples were obtained from 10 streams (Água Boa, Cerro Verde, Cumprida, Ponte, Doradão, Guaçú, Guaporites, Nhu-Verá, Perobão and Santa Maria), one river (Iguatemi River) and nine ponds (Bacal, Balan, Ponte, Cinco, Macrófitas, Bugão, Sítio, Cascalho, and Oxbow). A total of 63 aquatic and semi-aquatic species of Heteroptera were recorded, of which 32 are new records.
Keywords: *water-bug, aquatic insects, Iguatemi River.*

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Resumo: Uma lista das espécies de Heteroptera aquáticos e semi-aquáticos para a região sul do Estado de Mato Grosso do Sul é apresentada. O material foi coletado entre 2008 e 2009. As amostras foram obtidas a partir de 10 córregos (Água Boa, Cerro Verde, Cumprida, Ponte, Doradão, Guaçú, Guaporites, Nhú-Verá, Perobão e Santa Maria), um rio (rio Iguatemi) e nove lagoas (Bacal, Balan, da Ponte, Cinco, Macrófitas, Bugão, Sítio, Cascalho, Oxbow). Um total de 63 espécies de heterópteros aquáticos e semi-aquáticos foram registrados, das quais 32 são novos registros.
Palavras-chave: *percevejos aquáticos, insetos aquáticos, Rio Iguatemi.*

Introduction

Hemiptera is a group of hemimetabolous insects with some fossil members dating from the late Permian (Grimaldi & Engel 2005). Currently, it comprises four suborders (Forero 2008), whose the referred suborder Heteroptera consist of insects having piercing-sucking mouthparts inserted into the anterior part of the head and forewings, when present, of hemelytra type (Nieser & Melo 1997, Gullan & Cranston 2008). However, Gerromorpha is not divided into a leathery part (corium and clavus) and membranous apical part (membrane) (Andersen 1982).

The Heteroptera is a group of insects of great interest found worldwide (Nieser & Melo 1997), except Antarctica (Polhemus & Polhemus 2007, Schuh & Slater 1995). Although most species have terrestrial habits, aquatic and semi-aquatic ones are also found (McCafferty 1981, Merrit & Cummins 1984). Since 1555, about 4,800 species of Gerromorpha, Nepomorpha and Leptopodomorpha have been described (Polhemus & Polhemus 2007). In the tropical South America, 700 species of Nepomorpha and Gerromorpha were cataloged (Pérez 1988), in Brazil 479 species were reported and in the Mato Grosso do Sul State were reported 27 species (Moreira et al. 2011).

The Brazilian States of Amazonas, Minas Gerais, Pará, Rio de Janeiro and Santa Catarina have the largest number of publications recording and or describing species of aquatic and semi-aquatic Heteroptera. In recent years, Espírito Santo and São Paulo were also subjected to studies with Veliidae (Moreira et al. 2010, Moreira & Barbosa 2011), whereas few reports are available for other States. However, there are few records on the regional fauna and ecological studies about the various habitats of aquatic Heteroptera. Generally, such studies have been hampered by the lack of identification keys for the species of aquatic organisms.

For the State of Mato Grosso do Sul, there are records of some families in the Pantanal do Negro, in the Municipality of Aquidauana (Bervian et al. 2006, Donald 2006, Silva et al. 2009), and families and genera in the southern region of the State (Floriano et al. 2008, 2009). However, studies of species are extremely scarse.

This study aimed to present a preliminary checklist of Gerromorpha and Nepormorpha species for the Mato Grosso do Sul State, in order to provide numerical data that will show the reality of regional species in Brazil.

Materials and Methods

The 2,940 km long Paraná River, originates in the junction of the Rivers Paranaíba and Grande, on the border of Mato Grosso do Sul, Minas Gerais and São Paulo (Godoy 1986), having as one of its main tributaries, the Iguatemi River, located in the extreme south of Mato Grosso do Sul State.

The Iguatemi River is 235 km long, presenting a meandering course, high water flow and several marginal lagoons near its mouth (Paiva 1982). The spring is located between the municipalities of Amambaí and Coronel Sapucaia, at about 520 m of altitude and flows into the Parana River at 226 m above sea level, between the municipalities of Eldorado, Mundo Novo and Guaíra, about 20 km above the ancient Salto das Sete Quedas (Súarez & Petrere Junior 2003).

For the sampling activities three areas along the Iguatemi River were determined, these are, the upper region (Coronel Sapucaia and Amambai), middle region (Sete Quedas and Tacuru) and lower region (Mundo Novo, Japorã and Eldorado).

The illustrative locations of the sampling points are shown in Figure 1, and the geographical coordinates as well as the codes of the sampled areas are shown in Table 1.

For the upper region of the Iguatemi river five sampling points were determined, among them three were located in the Iguatemi River and two refer to the Nhu-Verá and Cumprida streams. As for the middle region, four sampling points were chosen (Iguatemi River,

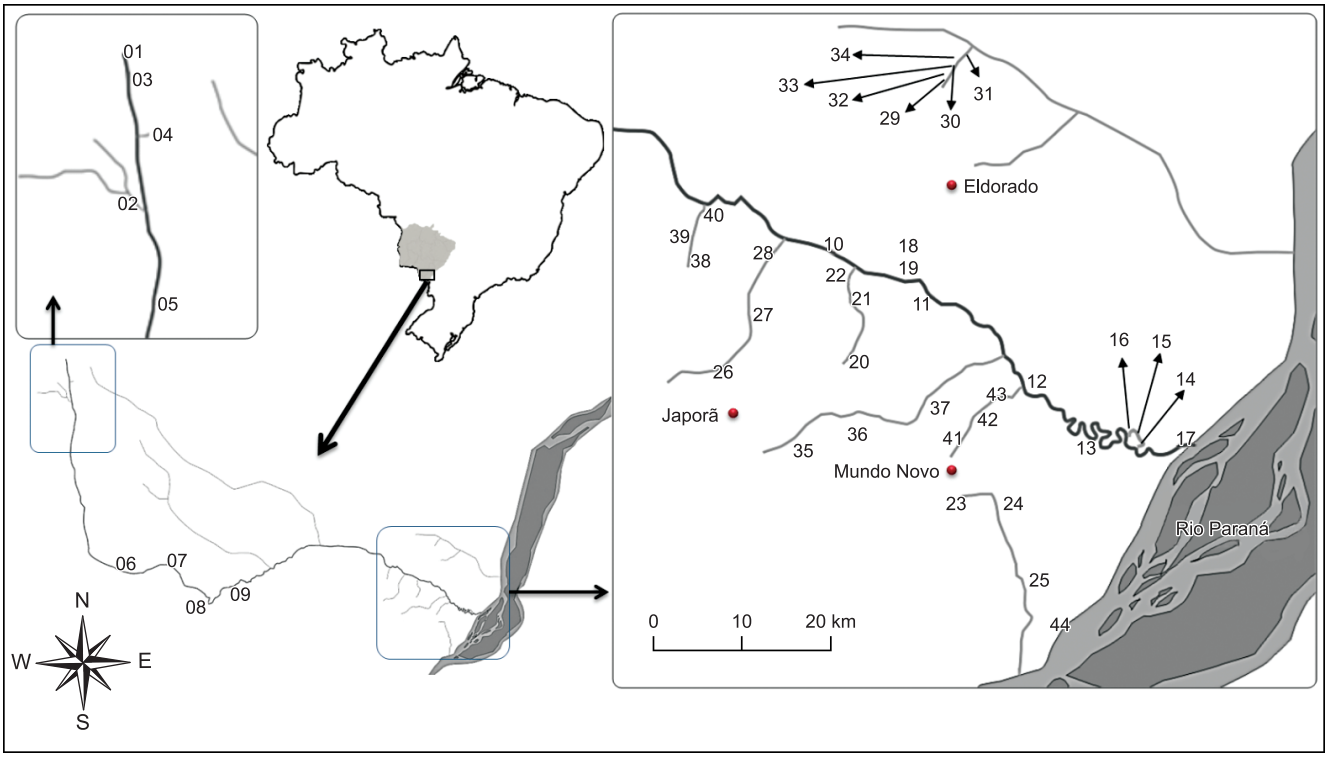

Figure 1. Map showing the 44 sampling sites in southern region of the Mato Grosso do Sul State.

Table 1. Codes, names and geographical coordinates for 44 sampling sites in southern region of the Mato Grosso do Sul State.

Region	Code	Site	Geographical coordinates	
			Latitude	Longitude
ARI	01 - ARI	Iguatemi River, sourcee	23°13'24.1''	55°25'15.0''
	02 - CN	Nhu-Verá Stream	23°18'48.1''	55°25'16.3''
	03 – ARI	Iguatemi River	23°13'41.8''	55°25'17.4''
	04 – CC	Cumprida Stream *	23°15'20.1''	55°25'04.0''
	05 – ARI	Iguatemi River	23°20'24.9''	55°27'47.5''
MRI	06 – MRI	Iguatemi River	23°47'37.1''	55°06'30.8''
	07 – LB	Bugão Lagoon *	55°06'30.8''	55°05'21.8''
	08 – CV	Cerro Verde Stream	23°50'30.5''	55°04'32.4''
	09 – LC	Cinco Lagoon *	23°53'30.6''	55°00'16.6''
BRI	10 - BRI	Iguatemi River	23º49'01.3''	54º22'05.7''
	11 - BRI	Iguatemi River	23°50'22.3''	54°19'31.0''
	12 - BRI	Iguatemi River	23º53'04.2''	54º15'38.1''
	13 - BRI	River Iguatemi	23º55'09.5''	54º12'50.7''
	14 – LO	Oxbow Lagoon	23º55'22.6''	54º11'19.0''
	15 – LO	Oxbow Lagoon	23º55'11.4''	54º11'15.4''
	16 – LO	Oxbow Lagoon	23º54'53.8''	54º11'25.3''
	17 - BRI	Iguatemi River, mouth	23°55'36.1''	54°09'60.1''
	18 – LM	Macrófitas Lagoon *	23°49'11.5''	54°20'01.9''
	19 – LP	Ponte Lagoon *	23°50'02.9''	54°20'02.3''
	20 – AB	Água Boa Stream	23°52'43.7''	54°21'56.9''
	21 – AB	Água Boa Stream	23°50'16.6''	54°20'55.5''
	22 – AB	Água Boa Stream	23°50'30.3''	54°20'58.5''
	23 – CP	Ponte Stream	23°56'45.9''	54°17'28.2''
	24 – CP	Ponte Stream	23°56'50.3''	54°16'37.4''
	25 – CP	Ponte Stream	23°59'48.5''	54°15'22.7''
	26 – CD	Doradão Stream	23°52'24.1''	54°26'40.4''
	27 – CD	Doradão Stream	23°51'04.9''	54°25'13.9''
	28 – CD	Doradão Stream	23°49'23.2''	54°23'48.2''
	29 – CA	Guaporites Stream	23º43'32.3''	54º17'43.4''
	30 – CA	Guaporites Stream	23º43'43.7''	54º17'25.1''
	31 – CA	Guaporites Stream	23º42'59.0''	54º17'10.3''
	32 – LL	Balan Lagoon *	23º43'32.7''	54º17'49.4''
	33 – LA	Bacal Lagoon *	23º43'15.9''	54º17'24.6''
	34 – LS	Sítio Lagoon*	23º43'12.5''	54º17'29.5''
	35 – CG	Guaçú Stream	23°55'04.1''	54°23'40.7''
	36 – CG	Guaçú Stream	23°54'19.6''	54°21'43.4''
	37 – CG	Guaçú Stream	23°53'31.4''	54°18'42.3''
	38 – BB	Perobão Stream	23°49'25.8''	54°26'43.2''
	39 – BB	Perobão Stream	23°48'59.4''	54°26'43.2''
	40 – BB	Perobão Stream	23°48'40.6''	54°26'26.0''
	41 – CF	Santa Maria Stream	23°55'22.7''	54°17'49.5''
	42 – CF	Santa Maria Stream	23°54'29.1''	54°17'14.4''
	43 – CF	Santa Maria Stream	23°53'52.4''	54°16'13.5''
	44 – LH	Cascalho Lagoon	24°02'28.4''	54°14'00.2''

*Names suggested by authors. ARI: upper region of Iguatemi River; MRI: middle region of Iguatemi River and BRI: low regions of Iguatemi River.

Cerro Verde stream, Bugão lagoon and Cinco lagoon). The sampling work in the upper and middle regions was carried out in February and May 2008, and February 2009.

Along the lower region of the Iguatemi River, ten sampling points were chosen, four in the river itself, three in the Oxbow lagoon, two in marginal lagoons (Macrófitas and Ponte) and one in the mouth. The collections were carried out in January, April, July and October 2008.

In the lower region seven streams were also investigated (Água Boa, Doradão, Guaçú, Guaporites, Perobão, Ponte, and Santa Maria). For each stream, three sampling points were selected (near the source, in the middle region and near the mouth). As regards the frequency of collection, for the Doradão and Guacú streams, they were performed in a two-month period between February and October 2007. For the Perobão, Água Boa, Ponte and Santa Maria streams, the collections were quarterly, between March and December 2008. As for the Guaporites stream and the lagoons (Bacal, Balan, Ponte, Macrófitas, Cascalho and Sítio), samples were collected quarterly from September 2008 to June 2009.

Table 2. Species of aquatic and semi-aquatic Heteroptera (Nepomorpha and Gerromorpha) recorded from the Mato Grosso do Sul State, with new records.

Taxa	New record	SRT	SPR
Infraordem GERROMORPHA Popov, 1971			
Gerridae Leach, 1815			
Brachymetra furva Drake, 1957	X	X	
Cylindrostethus palmaris Drake & Harris, 1934	X	X	
Halobatopsis platensis (Berg, 1879)	X	X	
Limnogonus aduncus Drake & Harris, 1933	X	X	
Limnogonus ignotus Drake & Harris, 1934			X
Limnogonus profugus Drake & Harris, 1930		X	X
Neogerris lubricus (White, 1879)	X	X	
Metrobates vigilis Drake & Harris, 1945	X	X	
Rheumatobates crassifemur Esaki, 1926	X	X	
Hebridae Amyot & Serville, 1843			
Merragata hebroides White, 1877	X	X	
Hydrometridae Billberg, 1820			
Hydrometra argentina Berg, 1879		X	X
Mesoveliidae Douglas & Scott, 1867			
Mesovelia mulsanti White, 1879	X	X	
Veliidae Amoyot & Serville, 1843			
Microvelia longipes Uhler, 1894			X
Microvelia mimula White, 1879			X
Microvelia pulchella Westwood, 1834		X	X
Platyvelia brachialis (Stål, 1860)	X	X	
Rhagovelia hambletoni Drake, 1958	X	X	
Rhagovelia tenuipes Champion, 1898	X	X	
Rhagovelia whitei (Breddin, 1898)	X	X	
Rhagovelia zela Drake, 1959	X	X	
Steinovelia virgata (White, 1879)	X	X	
Stridulivelia astralis (Drake & Harris, 1938)			X
Xiphovelia lacunana (Drake & Plaumann, 1953)			X
Infraordem NEPOMORPHA Popov 1971			
Belostomatidae Leach, 1815			
Belostoma bosque De Carlo, 1932			X
Belostoma dentatum (Mayr, 1863)			X
Belostoma dilatatum (Dufour, 1863)		X	X
Belostoma discretum Montandon, 1903		X	X
Belostoma elongatum Montandon, 1908		X	X
Belostoma foveolatum (Mayr, 1863)			X
Belostoma gestroi Montandon, 1900			X
Belostoma micantulum (Stål, 1858)		X	X
Belostoma pygmeum (Dufour, 1863)	X	X	
Lethocerus annulipes (Herrich-Schäffer, 1846)	X	X	
Lethocerus maximus De Carlo, 1838		X	X
L. melloleitaoi De Carlo, 1933			X
Corixidae Leach, 1815			
Heterocorixa brasiliensis Hungerford, 1928			X
Tenagobia incerta Lundblad, 1928		X	X
Tenagobia schadei Lundblad, 1929			X
Gelastocoridae Champion, 1901			
Gelastocoris amazonensis Melin, 1929			X
Gelastocoris flavus (Guérin-Méneville, 1835)	X	X	
Gelastocoris monrosi De Carlo, 1959			X
Nerthra terrestris (Kevan, 1948)			X
Nerthra ranina (Herrich-Schäffer, 1853)	X	X	
Naucoridae Fallén, 1814			

RST: species registred in this study; SPR: species previously reported.

Table 2. Continued...

Taxa	New record	SRT	SPR
Ambrysus bifidus La Rivers & Nieser, 1972	X	X	
Limnocoris maculiceps Montandon, 1897			X
Limnocoris minutus De Carlo, 1951	X	X	
Pelocoris bipunctulus (Herrich-Schäffer, 1853)			X
Pelocoris subflavus Montandon, 1898	X	X	
Placomerus micans La Rivers, 1956	X	X	
Nepidae Latreille, 1802			
Curicta granulosa De Carlo, 1951			X
Curicta volxemi (Montandon, 1895)		X	X
Ranatra heydeni Montandon, 1909	X	X	
Ranatra horvathi Montandon, 1910			X
Ranatra rabida White, 1879			X
Ranatra siolii De Carlo, 1970	X	X	
Notonectidae Latreille, 1802			
Buenoa amnigenus (White, 1879)			X
Buenoa salutis Kirkaldy, 1904	X	X	
Martarega brasiliensis Truxal, 1949	X	X	
Martarega membranacea White, 1879	X	X	
Martarega uruguayensis (Berg, 1883)	X	X	
Notonecta pulchra Hungerford, 1926	X	X	
Pleidae Fieber, 1851			
Neoplea maculosa (Berg, 1879)	X	X	
Neoplea semipicta (Horváth, 1918)	X	X	

RST: species registred in this study; SPR: species previously reported.

The samples were taken by sweeping the water column, edges and bottom of the water bodies with entomological hand nets, when possible. The collected insects were sorted from detritus and transferred to vials containing 80% ethanol. In the laboratory, each sample was examined under a dissecting microscope and species identification was performed basically according to Nieser & Melo (1997) and Heckman (2011). The sampled material was deposited in the Laboratório de Entomologia aquática da Universidade Estadual de Mato Grosso do Sul (UEMS) e Departamento de Parasitologia da Universidade Federal de Minas Gerais (DPIC).

Results and Discussion

A total of 42 aquatic and semi-aquatic Heteroptera species (18 Gerromorpha, 24 Nepomorpha) were recorded, of which 32 are new records for the Mato Grosso do Sul State. A list of the species, grouped in 29 genera and distributed in 12 is presented (List 1 and Table 2).

The family of Gerromorpha with the greatest number of species was Gerridae with eight species, followed by Veliidae with seven. Among the Nepomorpha, Belostomatidae showed the highest richness, with seven species (five of *Belostoma* and two of *Lethocerus*).

Pleidae, which features small species that do not exceed three millimeters in length, are not frequently collected by not specialist, due to either their size or because they are rare or even their specific habitat. Thus, there are few records of their geographical distribution. Nevertheless, two species of *Neoplea* were registered in the State.

The State now contains 63 species of aquatic and semi-aquatic Heteroptera, with 10 species being recorded again in our studies, which were: *Belostoma dilatatum* (Dufour, 1863) (Ribeiro 2007), *B. discretum* Montandon, 1903 (Ribeiro 2007), *B. elongatum* Montandon, 1908 (Ribeiro 2007), *B. micantulum* (Stål, 1860) (Ribeiro 2007), *Curicta volxemi* (Montandon, 1895) (Heckman 2011), *Hydrometra argentina* Berg, 1879 (Moreira et al. 2009, Heckman 2011), *Lethocerus maximus* De Carlo, 1938 (Ribeiro 2005, Heckman 2011), *Limnogonus profugus* Drake & Harris, 1930 (Heckman 2011), *Microvelia pulchella* Westwood, 1834 (Drake & Plaumann 1953), *Tenagobia incerta* Lundblad, 1929 (Nieser 1977) (Table 2).

The species *B. bosqi* De Carlo, 1932 (Ribeiro 2007), *B. dentatum* (Mayr, 1863) (Nieser 1975), *B. foveolatum* (Mayr, 1863) (Ribeiro 2007), *B. gestroi* Montandon, 1900 (Ribeiro 2004), *Buenoa amnigenus* (White, 1879) (Heckman 2011), *C. granulosa* De Carlo, 1951 (Heckman 2011), *Gelastocoris amazonensis* Melin, 1929 (Schnack & Estévez 1979), *G. monrosi* De Carlo, 1959 (De Carlo 1959), *Heterocorixa brasiliensis* Hungerford, 1928 (Hungerford 1948), *L. melloleitaoi* De Carlo, 1933 (Heckman 2011), *Limnocoris maculiceps* Montandon, 1897 (Heckman 2011), *L. ignotus* Drake & Harris, 1934 (Heckman 2011), *M. longipes* Uhler, 1894 (Drake & Plaumann 1953), *M. mimula* White, 1879 (Drake & Plaumann 1953, Heckman 2011), *Nerthra terrestris* (Kevan, 1948) (Heckman 2011), *Pelocoris bipunctulus* (Herrich-Schäffer, 1853) (Heckman 2011), *Ranatra horvathi* Montandon, 1910 (Nieser & Melo 1997), *R. rabida* White, 1879 (Heckman 2011), *Stridulivelia astralis* (Drake & Harris, 1938) (Heckman 2011), *T. schadei* Lundblad, 1929 (Hungerford 1948), *Xiphovelia lacunana* (Drake & Plaumann, 1953) (Drake & Plaumann 1953) were previously reported, however, unregistered in this study (Table 2).

According to Moreira et al. (2011), species *Pelocoris binotulatus nigriculus* Berg, 1879 and *Lipogomphus lacuniferus* Berg, 1879, possibly occurring in the State, but were not recorded in the sampling points, there is the possibility that these species occur further north of the State.

For records of species occurrence *G. amazonensis*, *G. monrosi* 1959, *M. longipes*, *M. mimula*, *M. pulchella* Westwood, 1834 and *X. lacunana*, the same were performed before the geopolitical division of the State in 1977. However, today these localities belong to the State of Mato Grosso do Sul (Moreira et al. 2011).

The Mato Grosso do Sul State has an important regional fauna of water bugs on the current records. However, knowledge about the aquatic and semi-aquatic Heteroptera in the State is still scarce. Further studies are necessary and important in order to provide numerical data that contribute to the reality of regional species in Brazil.

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Appendix

List 1. Species of aquatic and semi-aquatic Heteroptera (Nepomorpha and Gerromorpha) collected and identified for 44 sampling sites in southem region of the Mato Grosso do Sul State. (*) species previously reported.

Infraordem GERROMORPHA Popov, 1971

Gerridae Leach, 1815

Brachymetra furva Drake, 1957

Ocurrence: AB; ARI; BRI; CA; CC; CD; CF; CG; CV; MRI.

One specimen: 'CF P3 FA 12-08\ *Brachymetra*\ *furva*'; 13 specimens: 'ARI\ P1 PE 01.09\ *B. furva*'; Two specimens: 'AB P1 PE 12.08\ *Brachymetra*\ *furva*'; Two specimens: 'P6 FA 06.08\ *B. furva*'; One specimen: 'BRI P8 FA\ *Brachymetra*\ *furva*'; Six specimens: 'P6 FA 06.09\ *B. furva*'; One specimen: 'P2 FA 03.09\ *B. furva*'; Three specimens: 'P6 PE 06.09\ *Brachymetra*\ *furva*'; One specimen: 'P6 PE CA 06.08\ *B. furva*'; Six specimens: 'P6 FA 12.08\ *Brachymetra*\ *furva*'; One specimen: 'P6 FA 06.09\ *B. furva*'; One specimen: 'P3 FA 06.08\ *Brachymetra*\ *furva*'; One specimen: 'P6 FA 06.08\ *B. furva*'; Three specimens: 'P6 FA 03.09\ *B. furva*'; One specimen: 'P3 FA 12.08\ *B. furva*'; Three specimens: 'P2 PE 12.08\ *B. furva*'; 10 specimens: 'P2 PE 03.09\ *B. furva*'; Eight specimens: 'P2 FA 03.09\ *B. furva*'; One specimen: 'CF P3 PL 09.08\ *Brachymetra furva*'; One specimen: 'AB PE P2 06.08\ *Brachymetra furva*'; Three specimens: 'AB PE P2 06.08*Brachymetra furva*'; Two specimens: 'AB P1 PE 09.08\ *Brachymetra furva*'; Seven specimens: 'AB P3 PE 09.08\ *Brachymetra furva*'; Two specimens: 'CF P2 PE 12.08\ *Brachymetra furva*'; One specimen: 'BRI P2 PE 02.08\ *B. furva*'; One specimen: 'AB P1 PL 12.08\ *B. furva*'; Four specimens: 'AB P1 FA 09.08\ *B. furva*'; One specimen: 'ARI P2 PE 01.09\ *B. furva*'; Nine specimens: 'CF PE P3 06.08\ *Brachymetra*\ *furva*'; One specimen: 'CG P1 FA 02.07\ *Brachymetra*'; One specimen: 'MRI P3 P2 05.08\ *B. furva*'; One specimen: 'AB P2 FA 03.08\ *B. furva*'; One specimen: 'BRI P3 PL 05.08\ *B. furva*'; Two specimens: 'ARI P4 PE 05.08\ *B. furva*'; Five specimens: 'ARI P1 FA 05.08\ *Brachymetra furva*'; Two specimens: 'AB P2 FA 03.08\ *Brachymetra furva*'; One specimen: 'CF PE P1 06.08\ *B. furva*'; One specimen: 'MRI P3 PL 05.08\ *B. furva*'; 20 specimens: 'ARI FA P1 09.08\ *B. furva*'; One specimen: 'CD PE P3 02.07\ Gerridae\ *Brachymetra*'; Eight specimens: 'ARI\ P4 FA 01.09\ *B. furva*'; Three specimens: 'ARI P4 PE 01.09\ Gerridae\ *Brachymetra*'; One specimen: 'P3 FA 12.08\ *B. furva*'; One specimen: 'AB P3 FA 09.08\ *Brachymetra furva*'; One specimen: 'CF P3 FA 06.08\ *Brachymetra furva*'; One specimen: 'AB P3 FA 06.08\ *Brachymetra furva*'; One specimen: 'AB PE P2 03.08\ *Brachymetra furva*'; Three specimens: 'ARI PL P1 01.09\ *B. furva*'; Three specimens: 'ARI PL P1 01.09\ *B. furva*'; One specimen: 'ARI P3 PE 01.09\ *B. furva*'; Three specimens: 'CF P3 PL 06.08\ *Brachymetra furva*'.

Cylindrostethus palmaris Drake & Harris, 1934

Ocurrence: CV; MRI.

Three specimens: 'MRI P2 FA 05.08\ *C. palmaris*'; Five specimens: 'MRI P3 FA 05.08\ *C. palmaris*'.

Halobatopsis platensis (Berg, 1879)

Ocurrence: AB; ARI; CA; CF; LC; MRI.

Two specimens: 'MRI P1 FA 05.08\ *Halobatopsis*\ *platensis*'; Four specimens: 'P3 PE 06.09\ *H. platensis*'; One specimen: 'CA P3 SD 03.08\ *H. platensis*'; Three specimens: 'MRI P4 FA 05.08\ *H. platensis*'; One specimen: 'CF P3 FA 09.08\ *H. platensis*'; One specimen: 'ARI P3 FA 05.08\ *H. platensis*'; One specimen: 'AB P3 FA 09.08\ *H. platensis*'; One specimen: 'MRI P3 PE 02.08\ *H. platensis*'; One specimen: 'MRI FA 05.08\ *H. platensis*'; One specimen: 'ARI P5 PE 01.09\ *H. platensis*'.

Limnogonus aduncus Drake & Harris, 1933

Ocurrence: CA; CF; LL; LO; LM; LS.

Two specimens: 'CF PE P3 06-08\ *Limnogonus*\ *aduncus*'; One specimen: 'P2 PE 03.09\ *L. aduncus*'; One specimen: 'P4 PE 06.08\ *L. aduncus*'; Two specimens: 'P4 PE 12.08\ *L. aduncus*'; One specimen: 'P1 PE CA 12.08\ *Limnogonus*\ *aduncus*'; Two specimens: 'P6 FA 03.09\ *L. aduncus*'; One specimen: 'BRI P5 PE 10.08\ *L. aduncus*'.

Limnogonus profugus Drake & Harris, 1930*

Ocurrence: AB; BB; CA; CF; LA; LB; LO; LS.

Three specimens: 'BB P2 PE 06-08\ *Limngonus*\ *profugus*'; Three specimens: 'AB P2 PE 09-08\ *Limnogonus*\ *profugus*'; Seven specimens: 'P5 FA 06.09\ *L. profugus*'; Three specimens: 'P5 FA 06.09\ *Limnogonus*\ *profugus*'; One specimen: ' P2 FA 12.08\ *L. profugus*'; Four specimens: 'P6 FA 03.09\ *L. profugus*'; One specimen: 'P6 PE 06.09\ *L. profugus*'; One specimen: 'AB P1 PL 06.08\ *L. profugus*'; One specimen: 'MRI P2 PE 05.08\ *L. profugus*'; One specimen: 'BB P2 PL 09.08\ *L. profugus*'; One specimen: 'AB P1 FA 06.08\ *L. profugus*'; One specimen: 'P4 PE 12.08\ *L. profugus*'; One specimen: 'BB P1 PL 09.08\ *L. profugus*'; One specimen: 'BB PL P3 06.08\ *L. profugus*'; One specimen: 'BB P3 FA 09.08\ *L. profugus*'; One specimen: 'BB P1 FA 09.08\ *L. profugus*'; One specimen: 'AB P3 PE 06.08\ *L. profugus*'; Two specimens: 'BB P1 PL 09.08\ *Limnogonus profugus*'; One specimen: 'BB P1 PL 06.08\ *Limnogonus*\ *profugus*'; One specimen: 'P5 FA 12.08\ *L. profugus*'; One specimen: 'BB P2 PL 06.08\ *L. profugus*'; One specimen: 'BRI P5 FA 10.08\ *L. profugus*'; Two specimens: 'CF P3 PE 09.08\ *L. profugus*'.

Neogerris lubricus (White, 1879)

Ocurrence: LO; LS.

Two specimens: 'BRI P5 PE 07.08\ *N. lubricus*'; One specimen: 'P4 FA 12.08\ *N. lubricus*'.

Metrobates vigilis Drake & Harris, 1945

Ocurrence: ARI, BRI; MRI.

One specimen: 'BRI P1 FA 07.08\ *Metrobates*\ *vigilis*'; One specimen: 'BRI P2 FA 02.09\ *M. vigilis*'; Five specimens: 'MRI P4 FA 05.08\ *M. vigilis*'; Eight specimens: 'BRI P3 PE 10.08\ *M. vigilis*'; Two specimens: 'ARI P1 FA 06.08\ *M. vigilis*'; Three specimens: 'BRI P1 FA 01.08\ *M. vigilis*'.

Rheumatobates crassifemur Esaki, 1926

Ocurrence: BRI; LO; LS; MRI.

One specimen: 'BRI P3 PE 10-08\ *R. crassifemur*'; One specimen: 'BRI P7 FA 10-08\ *R. crassifemur*'; Four specimens: 'MRI P1 PE 01.09\ *R. crassifemur*'; One specimen: 'MRI P3 FE 01.09\ *R. crassifemur*'. Nine specimens: 'P4 P3 FA 03.09\ *Rhematobates*'.

Hebridae Amyot & Serville, 1843

Merragata hebroides White, 1877

Ocurrence: LA.

Seven specimens: 'LN\ PE\ 06.08\ *M. hebroides*'.

Hydrometridae Billberg, 1820

Hydrometra argentina Berg, 1879*

Ocurrence: BRI; LA.

One specimen: 'BRI P7 PE 04.08\ Hydrometridae\ *H. argentina*'; Five specimens: 'BRI P6 PE 10.08\ Hydrometridae\ *Hydrometra*'; One specimen: 'P1 PE CA\ *Hydrometra*' '*Hydrometra argentina*\ Berg, 1879'.

Mesoveliidae Douglas & Scott, 1867

Mesovelia mulsanti White, 1879

Ocurrence: LO; CA.

One specimen: 'BRI P5 PE 07.08\ Mesoveliidae\ *Mesovelia mulsanti*'; One specimen 'P3 PE 12.08 CA\ *Mesovelia*\ *mulsanti*'.

Veliidae Amoyot & Serville, 1843

Microvelia pulchella Westwood, 1834*

Ocurrence: LA.

Four specimens: 'P5 PE 12.05' *Microvelia*'; Two specimens: 'P5 FA 06.09\ *Microvelia*'; One specimen: LN PE 09.08\ *Microvelia*'.

Platyvelia brachialis (Stål, 1860)

Ocurrence: BB.

One specimen: 'BB P2 P2 03-08\ *Platyvelia*\ *P. brachialis*'.

Rhagovelia hambletoni Drake, 1958

Ocurrence: AB; BRI.

Two specimens: 'BRI P4 FA 07.08\ Veliidae\ *Rhagovelia*' '*Rhagovelia hambletoni*'; One specimen: 'BRI P8 PE 10.08\ Veliidae\ *Rhagovelia*' '*R. hambletoni*'; One specimen: 'AB P3 PE 06.09\ Veliidae\ *Rhagovelia*\ *R. hambletoni*'; One specimen: 'BRI P2 PE 10.08\ Veliidae\ *Rhagovelia hambletoni*'; 30 specimens: 'BRI P4 FA 10.08\ *R. hambletoni*'; Two specimens: 'AB P3 PE 06.08\ *R. hambletoni*'.

Rhagovelia tenuipes Champion, 1898

Ocurrence: CN; BRI.

18 specimens: 'BRI PE FA 07.08z *Rhagovelia*\ *tenuipes*'; Seven specimens: 'BRI P2 FA 07.08\ *Rhagovelia*\ *hambletoni*'; One specimen: 'ARI P3 FA 05.08\ Veliidae\ *Rhagovelia*'.

Rhagovelia whitei (Breddin, 1898)

Ocurrence: CF.

11 specimens: 'CF P1 P2 12-08\ *Rhagovelia*' '*R. whitei*'.

Rhagovelia zela Drake, 1959

Ocurrence: CC; CF.

12 specimens: 'CF PE 09-08\ *Rhagovelia*' *'R. zela*'; Three specimens: 'ARI P4 PE 05.08\ Veliidae\ *Rhagovelia*\ *R. zela*'.

Steinovelia virgata (White, 1879)

Ocurrence: CF

Two specimens: 'CF P1 PE 06.08\ Veliidae\ *Steinovelia*'.

Infraordem NEPOMORPHA Popov 1971

Belostomatidae Leach, 1815

Belostoma dilatatum (Dufour, 1863)*

Ocurrence: CF; BRI.

One specimen: 'BRI P5 PE 07.08\ *Belostoma*' '*B. dilatatum*'; Four specimens: 'CF PE Belostomatidae\ *B. dilatatum*\ (Dufour, 1863).

Belostoma discretum Montandon, 1903*

Ocurrence: BRI; CP.
One specimen: 'CP P3 PE 03.08\ *Belostoma*' '*B. discretum*'; One specimen: 'BRI PE\ Belostomatidae\ *Belostoma*' '*Belostoma discretum*\ Montandon, 1903'.

Belostoma elongatum Montandon, 1908*

Ocurrence: BB.
Two specimens: 'BB P2 PL 06.08\ *Belostoma*' 'BB P2 PL 06.08\ *Belostoma**elongatum*'; Two specimens: 'BB P1 PE 06.08\ *Belostoma*' '*Belostoma elongatum*'.

Belostoma micantulum (Stål, 1858) *

Ocurrence: BRI.
One specimen: 'BRI P4 PE 10.08\ *B. micantulum*'.

Belostoma pygmeum (Dufour, 1863)

Ocurrence: LO.
One specimen: 'BRI P6 PE 07.08\ *Belostoma pygmeum*'.

Lethocerus annulipes (Herrich-Schäffer, 1846)

Ocurrence: CP.
One specimen: 'CP PL\ Belostomatidae\ *Lethocerus*' '*Lethocerus annulipes*\ (Herrich-Schäffer, 1846)'.

Lethocerus maximus De Carlo, 1838*

Ocurrence: CP.
One specimen: 'CP PL\ Belostomatidae\ *Lethocerus*' '*L. maximus*'.

Corixidae Leach, 1815

Tenagobia incerta Lundblad, 1928*

Ocurrence: BB.
Eight specimens: 'BB P1 FA 09.08\ *Tenagobia*\ *incerta*'.

Gelastocoridae Champion, 1901

Gelastocoris flavus (Guérin-Méneville, 1835)

Ocurrence: BB.
One specimen: 'BB P3 PE 12.08\ *Gelastocoris*' '*Gelastocoris flavus flavus* (G. Méneville)'.

Nerthra ranina (Herrich-Schäffer, 1853)

Ocurrence: MRI.
One specimen: 'MRI PE 02.08\ *Nerthra*' '*Nerthra ranina*\ (Herrich-schaffer)'; One specimen: 'MRI P4 PE 02.08\ *Nerthra ranina*' '*Nerthra ranina*\ (Herrich-schaffer)'.

Naucoridae Fallén, 1814

Ambrysus bifidus La Rivers & Nieser, 1972

Ocurrence: AB.
Two specimens: 'AB PE\ Naucoridae\ *Ambrysus*' '*Ambrysus bifidus*'.

Limnocoris minutus De Carlo, 1951

Ocurrence: BRI; MRI.
Two specimens: 'BRI P7 PE 01.08\ *Limnocoris*\ *minutus*'; One specimen: 'MRI P4 SDP 05.08\ *Limnocoris*\ *minutus*'.

Pelocoris subflavus Montandon, 1898

Ocurrence: LH.
Four specimens: 'L. Cascalho\ *Pelocoris*\ *subflavus*'.

Placomerus micans La Rivers, 1956

Ocurrence: LA.
Five specimens: 'LN PE CA\ *Placomerus*\ *micans*'.

Nepidae Latreille, 1802

Curicta volxemi (Montandon, 1895)*

Ocurrence: LH.
One specimen: 'L. Cascalho' 'Patty' '*Curicta volxemi*\ (Montandon, 1895)'.

Ranatra heydeni Montandon, 1909

Ocurrence: CD.
One specimen: 'CD' '*Ranatra*\ *heydeni*\ Montandon'.

Ranatra siolii De Carlo, 1970

Ocurrence: AB.
One specimen: 'CD PE\ *Ranatra*' '*Ranatra siolii*\ De Carlo 1970'.

Notonectidae Latreille, 1802

Buenoa salutis Kirkaldy, 1904

Ocurrence: CD; LO.
Four specimens: 'BRI P6 PE. 07.08\ *Buenoa*' '*B. salutis*'; One specimen: 'CD P3 PE 04.07\ *Buenoa*' '*B. salutis*'.

Martarega brasiliensis Truxal, 1949

Ocurrence: BRI.
Three specimens: 'BRI P3 PE 10.08\ *Martarega*' '*Martarega*\ *brasiliensis*\ Truxal, 1949'; Two specimens: 'BRI P2 FA\ 04.08\ *Martarega brasiliensis*'; Five specimens: 'MRI P3 FA 05.08\ *Martarega*' '*M. uruguayensis*'; One specimen: 'BRI P5 FA\ 07.08\ *M. brasiliensis*'; Two specimens: 'BRI P4 PE 10.08\ *Martarega*' ' *M. brasiliensis*'.

Martarega membranacea White, 1879

Ocurrence: LO.
Two specimens: 'BRI P7 FA 04.08\ *Martarega*\ sp2' '*Martarega*\ *membranacea*\ White, 1879'; One specimen: 'BRI P7 FA 07.08\ *Martarega*' '*Martarega*\ *membranacea*\ White, 1879'; Three specimens: 'BRI P7 FA\ *M. membranacea*'; One specimen: 'BRI P5 PE\ 04.08\ *M. membranacea*'; Two specimens: 'BRI P8 PE 04.08\ *Martarega*' '*M. membranacea*'.

Martarega uruguayensis (Berg, 1883)

Ocurrence: ARI; BB; BRI; MRI; CA; CV; LO.
One specimen: 'ARI P4 FA 05.08\ *Martarega*' '*M. uruguayensis*'; Six specimens: 'ARI P3 FA 05.08\ *Martarega*' '*Martarega*\ *uruguayensis*\ (Berg, 1883); One specimen: 'ARI FA 05.08\ *Martarega*' '*M. uruguayensis*'; Two specimens: 'ARI P4 FA 02.08\ *Martarega*\ *uruguayensis*'; Two specimens: 'ARI P4 FA 05.08\ *Martarega uruguayensis*'; One specimen: 'MRI FA P3 02.08\ *Martarega*' '*M. uruguayensis*'; One specimen: 'MRI P3 FA 02.08\ *Martarega*' '*M. uruguayensis*'; One specimen: 'MRI P3 PE 02.08\ *Martarega*' '*Martarega uruguayensis*'; One specimen: 'MRI FA P1 02.08\ *Martarega*' '*Martarega uruguayensis*'; One specimen: 'BRI P2 FA 04.08\ *Martarega*' '*M. uruguayensis*'; One specimen: 'BRI P3 PE 10.08\ *Martarega*' '*M. uruguayensis*'; 15 specimens: 'BRI P7 PE 07.08\ *Martarega*' '*M. uruguayensis*'; One specimen: 'BRI P5 FA 07.08\ *Martarega*' '*M. uruguayensis*'; Eight specimens: 'BRI P7 PE 07.08\ *Martarega*' '*M. uruguayensis*'; Two specimens: 'BRI P8 PE 01.08\ *Martarega*' '*Martarega uruguayensis*'; Three specimens: 'BRI P4 PE 10.08\ *M. uruguayensis*'; One specimen: 'P2 PE 09.08\ *Martarega*' '*Martarega uruguayensis*'; One specimen: 'P3 FA 09.08\ *Martarega*' '*Martarega uruguayensis*\ (Berg, 1883)'; One specimen: 'P2 FA 12.08\ *Martarega*\ *M. uruguayensis*'; Four specimens: 'BB P2\ PE 03.08' '*M. uruguayensis*'; One specimen: 'BB P3 FA 03.08\ *Martarega*' '*Martarega uruguayensis*'; One specimen: 'BB P3 PL 06.08\ *Martarega*' '*M. uruguayensis*'; One specimen: 'BB P2 PE 03.09\ *Martarega*' '*Martarega uruguayensis*'.

Notonecta pulchra Hungerford, 1926

Ocurrence: CA.
Three specimens: 'CA P5 PE\ *Notonecta*'.

Pleidae Fieber, 1851

Neoplea maculosa (Berg, 1879)

Ocurrence: LL.
One specimen: 'P1 PE CA 12.08\ *Neoplea*' '*Neoplea maculosa* (Berg, 1879)'.

Neoplea semipicta (Horváth, 1918)

Ocurrence: LA.
Two specimens: 'P5 FA CA 12.08\ *Neoplea*' '*Neoplea*\ *semipicta*\ (Horváth, 1918).