

New records of aquatic Heteroptera (Hemiptera) from the Andean foothills of the Amazonia (Putumayo, Colombia)

Nuevos registros de Heteroptera acuáticos (Hemiptera) del piedemonte Andino de la Amazonia (Putumayo, Colombia)

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Abstract: Four new records of species of aquatic heteropterous are added to the entomofauna of Colombia and, distributional limits are extended for all species collected. New data is reported for the distribution of 18 species, of which two belong to the infraorder Nepomorpha: Corixidae: *Heterocorixa* and Notonectidae: *Martarega*; 16 belong to Gerromorpha: of which 12 belong to the family Gerridae: *Metrobates*, *Tachygerris*, *Limnogonus* (two species), *Brachymetra*, *Neogerris*, *Potamobates*, *Trepobates* (three species), *Telmatometra*, *Rheumatobates*; three belong to the family Veliidae: *Rhagovelia*, *Microvelia* (two species), and one to Mesoveliidae: *Mesovelia*.

Key words: Aquatic insects. Corixidae. Notonectidae. Gerridae. Veliidae.

Resumen: Se adicionan cuatro nuevos registros de especies de heterópteros acuáticos a la entomofauna de Colombia y se extiende el área de distribución para todas las especies colectadas. Un total de 18 especies son tratadas en este trabajo, de las cuales dos pertenecen al infraorden Nepomorpha: Corixidae: *Heterocorixa* y Notonectidae: *Martarega*; 16 pertenecen a Gerromorpha: de las cuales 12 pertenecen a la familia Gerridae: *Metrobates*, *Tachygerris*, *Limnogonus* (dos especies), *Brachymetra*, *Neogerris*, *Potamobates*, *Trepobates* (tres especies), *Telmatometra*, *Rheumatobates*; tres pertenecen a la familia Veliidae: *Rhagovelia*, *Microvelia* (dos especies), y una a Mesoveliidae: *Mesovelia*.

Palabras clave: Insectos acuáticos. Corixidae. Notonectidae. Gerridae. Veliidae.

Introduction

During the last years, the knowledge about aquatic heteropterous have widely increased, mainly with the description of new species of genera *Rhagovelia*, *Paravelia*, *Tachygerris*, *Potamobates*, *Buenoa*, and *Martarega* (Padilla-Gil 2009a, b; 2010, 2011a, b, c; 2012a, b, c; 2013a; Padilla-Gil and Nieser 2003; Padilla-Gil and Damgaard 2011; Padilla-Gil and Moreira 2011), most of species from south-western Colombia (Padilla-Gil and Arcos 2010; 2011; Padilla-Gil, 2012c, d), but information on several aspects of the biology of the species (Padilla-Gil 2013b), as their distribution (Padilla-Gil, 2013c; Padilla-Gil and Moreira 2013) among others, is still incomplete.

Some faunal and taxonomic studies of aquatic heteropterous had been done in the Amazon region of Brazil such as Nieser (1970a, b, c, d), Estévez and Polhemus (2007), Moreira *et al.* (2008, 2009, 2011), and Barbosa *et al.* (2010).

The Colombian Amazon region begins on the eastern slope of the Cordillera Oriental and according to Mittermeier *et al.* (1999) that is the most biologically diverse "hot spot" in the world. However, in the region of Putumayo there are a few works about aquatic heteropterous, three species previously described with this type locality: two species of *Buenoa* (Notonectidae) (Padilla-Gil 2003) and one gerrid species, *Potamobates sumaco* Cognato, 1998.

This present study basically reports new information on the distribution of the aquatic heteropterous inhabiting freshwater bodies from the western Andean foothills of the Amazon, a region located in transition zone between the Colombian Amazon lowlands and the Andes. Given its aquatic biodiversity, fish resources, and fresh water ecosystems,

this region is considered of the utmost importance for conservation strategies, potential management options, and increase environmental sustainability (Porro *et al.* 2008).

Material and methods

Specimens were obtained during field trips carried out in the localities showed in the map (Fig. 1) in the Colombian Putumayo River basin. Insects were collected with entomological hand nets sweeping the water column, edges and bottom of the water. The species were identified following Heckman (2011); the specimens collected were preserved in alcohol 70%, and deposited in the entomological collection of the Universidad de Nariño (PSO-CZ). The following abbreviations are used: apterous (apt) and macropterous (macr).

Results

Taxonomic list

* first record for Colombia.

Infraorder Nepomorpha

Corixidae

Heterocorixinae

Heterocorixa White, 1879

Heterocorixa westermanni Lundblad, 1928

Known distribution. Brazil and Colombia*.

Material examined. COLOMBIA. Putumayo. Puerto Asis, Quebrada Brisas de Hong Kong, 1°29'35.9"N 76°30'16.3"W,

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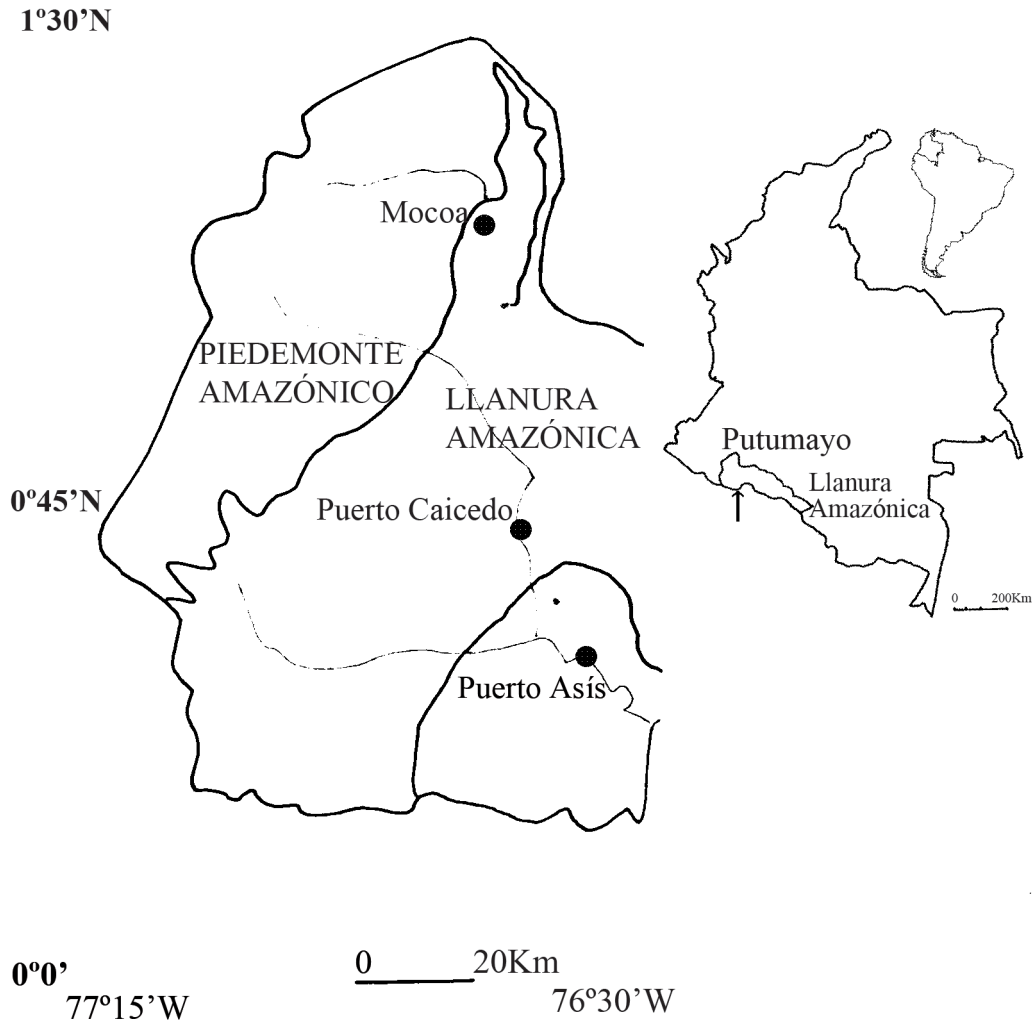


Figure 1. The Andean foothills of the Amazon in Putumayo (Colombia) (● denotes study sites). Mocoa: 1°11'37,9" N - 77°15'46,2" W, 540-640 m; Puerto Asís, 1°29'1" N - 76°30'37,5" W, 220-264 m; Puerto Caicedo, 0°41'14,7" N - 76°36'5,25" W, 225-270 m.

246 m, 10 Feb 2012, O. Arcos col., 1♂. Puerto Asís, pond, 1°29'18.4"N 76°30'25.1"W, 240 m, 10 Feb 2012, O. Arcos col., 3♂.

Comments: *Heterocorixa* is represented by two species in Colombia *H. hesperia venezuelana* Hungerford, 1948 and *H. westermanni*. The first is found in the Meta department (Roback and Nieser, 1974) and the second in the Amazon basin.

Notonectidae

Martarega

Martarega brasiliensis Truxal, 1949

Known distribution. Surinam, Brazil, Peru, and Colombia*.

Material examined. COLOMBIA. Putumayo. Puerto Caicedo, Río Putumayo and Río San Juan. 0°41'0.8"N 76°36.7'29"W, 225 m, 9 Feb 2012, O. Arcos col., 6♂ apt, 6♀ apt.

Comments: After the present study, the genus *Martarega* is represented by six species in Colombia: *M. chinai* Hynes, 1948, *M. membranacea* White, 1879, *M. pacifica* Manzano, Nieser & Caicedo, 1995, *M. lofoides* Padilla-Gil, 2010, *M. awa* Padilla-Gil, 2010 (Padilla-Gil 2010) and *M. brasiliensis*, which according to Truxal (1949) is associated with the Amazon basin.

Gerromorpha

Gerridae

Metrobates fugientis Drake & Harris, 1945

Known distribution. Bolivia, Colombia*, and Peru.

Material examined. COLOMBIA. Putumayo. Puerto Asís, pond, 0°35'30"N 76°33.8'28"W, 721 m, 9 Feb 2012, O. Arcos col., 1♂ apt, 1♀ apt. Puerto Caicedo, Río Putumayo and Río San Juan, 0°41'0.8"N 76°36.7'29"W, 225 m, 9 Feb 2012, O. Arcos col., 1♂ apt, 2♀ apt.

Comments: *M. amblydonti* Nieser, 1993, other species of *Metrobates* from Colombia was reported by Posso and González (2008) in Valle del Cauca.

Tachygerris celosis (Drake & Harris, 1930)

Known distribution. Colombia, Venezuela, Peru, Bolivia, and Brazil.

Material examined. COLOMBIA. Putumayo. Puerto Asis, drain, 1°29'1.0"N 76°30'37.5"W, 262 m, 10 Feb 2012, O. Arcos col., 1♀ macr.

Limnogonus aduncus Drake & Harris, 1933

Known distribution. Panama, Trinidad, Colombia, Venezuela, Guayana, Surinam, Ecuador, Peru, Bolivia, Paraguay, Brazil, and Argentina

Material examined. COLOMBIA. Putumayo. Puerto Asis, 1°28'49.9"N 76°30'40.5"W, 220 m, 10 Feb 2012, O. Arcos col., 1♂ apt, 2♀ apt. Puerto Asis, Quebrada Brisas de Hong Kong, 1°29'35.9"N 76°30'16.3"W, 246 m, 10 Feb 2012, O. Arcos col., 1♂ apt, 4♀ apt. Puerto Asis, pond, 1°29'18.4"N 76°30'25.1"W, 240 m, 10 Feb 2012, O. Arcos col., 13♂ apt, 8♀ apt. Puerto Asis, Santana, en el Puente, 0°35.7'59"N 76°33.6'50"W, 220 m, 9 Feb 2012, O. Arcos col., 1♂ apt, 2♀ apt.

Limnogonus ignotus Drake & Harris, 1934

Known distribution. Colombia, French Guiana, Guayana, Surinam, Peru, Bolivia, Paraguay, Uruguay, Brazil, and Argentina.

Material examined. COLOMBIA. Putumayo. Puerto Asis, pond. 0°35'30"N 76°33,8'28"W, 721 m, 9 Feb 2012, O. Arcos col. 1♀ apt.

Brachymetra unca Shaw, 1933

Known distribution. Trinidad, Colombia, French Guiana, Surinam, Bolivia, and Brazil.

Material examined. COLOMBIA. Putumayo. Puerto Caicedo, Río Putumayo and Río San Juan. 0°41'0,8"N 76°36,7'29"W, 225 m, 9 Feb 2012, O. Arcos col., 1♂ apt, 3♀ apt.

Neogerris lubricus (White, 1879)

Known distribution. West Indies, COLOMBIA. Ecuador, Peru, Brazil, Guyana, Surinam, Bolivia, and Argentina.

Material examined. COLOMBIA. Putumayo. Puerto Asis, pond. 0°35'30"N 76°33,8'28"W, 721 m, 9 Feb 2012, O. Arcos col., 3♂ apt, 2♀ apt. Puerto Asis, Quebrada Brisas de Hong Kong, 1°29'35,9"N 76°30'16,3"W, 246 m, 10 Feb 2012, O. Arcos col., 1♂ apt.

Potamobates anchicaya Polhemus & Polhemus, 1995

Known distribution. Panama, Colombia and Ecuador.

Material examined. COLOMBIA. Putumayo. Mocoa, Río Mocoa, 1°08.7'51"N 76°38,5'27"W, 550 m, 7 Feb 2012, O. Arcos col., 1♂ apt. Mocoa, Río Rumiayaco, 1°07'36,4"N 76°39'0,82"W, 550 m, 7 Feb 2012, O. Arcos col., 1♂ apt, 2♀ apt.

Comments: According to Padilla-Gil and Damgaard (2011) *P. anchicaya* is distributed along the Pacific region, this is the first record from the Colombian Amazon region.

Trepobates panamensis Drake & Hottes, 1952

Known distribution. Mexico, Central America, and Colombia.

Material examined. COLOMBIA. Putumayo. Puerto Asis, drain, 1°29'1,0"N 76°30'37,5"W, 262 m, 10 Feb 2012, O. Arcos col., 1♀ apt.

Trepobates taylori (Kirkaldy, 1899)

Known distribution. North and Central America, West Indies, Colombia, Venezuela, Ecuador, Peru, Brazil, and Argentina.

Material examined. COLOMBIA. Putumayo. Mocoa, Río Mocoa, 1°08,7'51"N 76°38,5'27"W, 550m, 7 Feb 2012, O. Arcos col., 1♀ apt. Mocoa, Río Rumiayaco, 1°07'36,4"N 76°39'0,82"W, 550m, 7 Feb 2012, O. Arcos col., 7♂ apt, 11♀ apt. Mocoa, Río Mulato, 1°08'28,4"N 76°38'38,4"W, 595m, 8 Feb 2012, O. Arcos col., 18♂ apt, 16♀ apt, 1♀ macr. Puerto Asis, drain, 1°29'1,0"N 76°30'37,5"W, 262m, 10 Feb 2012, O. Arcos col., 1♀ apt.

Trepobates trepidus Drake & Harris, 1928

Known distribution. North and Central America, Colombia, Venezuela, and Ecuador.

Material examined. COLOMBIA. Putumayo. Puerto Asis, pond. 1°29'18,4"N 76°30'25,1"W, 240 m, 10 Feb 2012, O. Arcos col., 5♂ apt, 1♂ macr, 3♀ apt, 2♀ macr. Puerto Asis, Quebrada Brisas de Hong Kong, 1°29'35,9"N 76°30'16,3"W, 246 m, 10 Feb 2012, O. Arcos col., 1♀ apt.

Telmatometra panamensis Drake & Hottes, 1952

Known distribution. Mexico, Central America, and Colombia.

Material examined. COLOMBIA. Putumayo. Puerto Asis, drain, 1°29'1,0"N 76°30'37,5"W, 262 m, 10 Feb 2012, O. Arcos col., 2♂ apt, 1♀ apt. Puerto Asis, Quebrada Brisas de Hong Kong, 1°29'35,9"N 76°30'16,3"W, 246 m, 10 Feb 2012, O. Arcos col., 1♀ apt.

Rheumatobates imitator (Uhler, 1894)

Known distribution. Western Indies, Venezuela, and Colombia.

Material examined. COLOMBIA. Putumayo. Puerto Caicedo, Río Putumayo and Río San Juan. 0°41'0,8"N 76°36,7'29"W, 225 m, 9 Feb 2012, O. Arcos col., 1♀ apt.

Veliidae

Rhagovelia williamsi Gould, 1931

Known distribution. Colombia* and Ecuador.

Material examined. COLOMBIA. Putumayo. Puerto Caicedo, Río Putumayo and Río San Juan. 0°41'0,8"N 76°36,7'29"W, 225 m, 9 Feb 2012, O. Arcos col., 1♂ apt.

Comments: According to Polhemus (1997) the distribution of *R. williamsi* in Ecuador and Colombia is associated with the Amazon basin. On the other hand, it belongs to the *robusta* group, represented by a total of ten species: *R. zeteki* Drake, 1953, *R. victoria* Padilla-Gil, 2012, *R. rubra* Polhemus, 1997, *R. cachipai* Padilla-Gil, 2011, *R. sinuata* Gould, 1931, *R. venezuelana* Polhemus, 1997, *R. narinensis* Padilla-Gil, 2011, *R. nicolai* Padilla-Gil, 2011, *R. imperatrix* Padilla-Gil, 2011 (see Padilla-Gil 2012 d, Padilla-Gil and Moreira 2013), and *R. williamsi*. After Brazil, Colombia is the second place in diversity of the *robusta* group in the Americas.

Microvelia longipes Uhler, 1894

Known distribution. West Indies, Colombia, Venezuela, Ecuador, Peru, Brazil, Guyana, Paraguay, and Argentina.

Material examined. COLOMBIA. Putumayo. Puerto Asis, pond. 1°29'18,4"N 76°30'25,1"W, 240 m, 10 Feb 2012, O. Arcos col., 1♂ macr, 1♀ macr.

Microvelia pulchella Westwood, 1834

Known distribution. North America, West Indies, South America except Chile.

Material examined. COLOMBIA. Putumayo. Puerto Asis, pond, 1°29'18,4"N 76°30'25,1"W, 240 m, 10 Feb 2012, O. Arcos col., 1♂ macr.

Mesoveliidae

Mesovelia mulsanti White, 1879

Known distribution. North and Central America, West Indies, Colombia, Venezuela, Peru, Brazil, Guyana, Bolivia, Paraguay, and Argentina.

Material examined. COLOMBIA. Putumayo. Puerto Asis, pond. 1°29'18,4"N 76°30'25,1"W, 240 m, 10 Feb 2012, O. Arcos col., 1♂ apt, 1♀ apt, 2♂ macr, 1♀ macr. Puerto Asis, Quebrada Brisas de Hong Kong, 1°29'35,9"N 76°30'16,3"W, 246 m, 10 Feb 2012, O. Arcos col., 1♀ apt.

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