

Checklist, distribution, and habitat of the semiaquatic and aquatic bugs from Cuba (Hemiptera: Heteroptera: Dipsocoromorpha, Leptopodomorpha, Gerromorpha and Nepomorpha)

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Abstract

A checklist of the semiaquatic and aquatic Heteroptera from Cuba is presented, based on literature records and examination of entomological collections. A total of 74 species and 1 morphospecies, 35 genera, and 16 families of the infraorders Dipsocoromorpha, Leptopodomorpha, Gerromorpha, and Nepomorpha are listed. Seven of the represented species are endemic to Cuba (9.5%), 7 of the Caribbean subregion (9.5%), and 13 of the Neotropics (17.6%). The most diverse families in the country are Gerridae (14 species), Veliidae (12 species), and Corixidae (11 species). Available distributional and habitat data are provided for each species.

Key words: Aquatic insects, biogeography, endemism, Hemiptera, taxonomy

Resumen

Se presenta una lista de los heterópteros semiacuáticos y acuáticos de Cuba, a partir de la revisión de literatura y examen de colecciones entomológicas. La lista la integran 74 especies y 1 morfospecie, 35 géneros y 16 familias agrupadas en los infraordenes Dipsocoromorpha, Leptopodomorpha, Gerromorpha, y Nepomorpha. Siete especies son endémicas de Cuba (9.5%), Siete del Caribe (9.5%) y 13 de la región Neotropical (17.6%). Las familias más diversas en el país son Gerridae (14 especies), Veliidae (12 especies), y Corixidae (11 especies). Datos de distribución y hábitat disponibles se presentan para cada especie.

Palabras claves: Insectos acuáticos, biogeografía, endemismo, Hemiptera, taxonomía

Introduction

The suborder Heteroptera (Insecta: Hemiptera), with about 38,000 species described worldwide, is a predominantly terrestrial group (Schuh and Slater 1995). Nevertheless, more than 4,800 known species are somehow related to different kinds of water bodies (Polhemus and Polhemus 2008). The vast majority of them are representatives of the infraorders Gerromorpha and Nepomorpha, but approximately 380 species of Leptopodomorpha occur in areas adjacent to water, and at least one Dipsocoromorpha species lives in a semiaquatic condition (Nieser 1973; Schuh and Slater 1995; Polhemus and Polhemus 2008).

Semiaquatic and aquatic bugs live in a wide range of natural and artificial habitats: humid terrestrial microhabitats (not necessarily close to free water), seeping rock faces with algae and moss, marginal aquatic

habitats (banks, shores, water edges), plant-covered or open waters in springs, streams, waterfalls, rivers, ponds, lakes (saline, alkaline or fresh), inter-tidal shore zones, and waters of seas and oceans (Saulich and Musolin 2007).

For Cuban aquatic Heteroptera, only three significant taxonomic surveys (Guérin-Méneville 1857; Alayo 1967, 1971, 1974; and Nieser 1973, 1977) have been made so far; and a historical review and general analysis of ecological preferences was presented by Naranjo *et al.* (2010). In the present study, a taxonomic checklist of Cuban semiaquatic and aquatic Heteroptera is presented, and distributional and habitat data are given for each species.

Material and methods

In order to obtain taxonomic and distributional information, an extensive revision of the available literature concerning Cuban semiaquatic and aquatic Heteroptera was carried out, and material from collections deposited on Natural History Museum Charles T. Ramsden de la Torre was examined.

Acronyms used: American Museum of Natural History, U.S.A (AMNH); Centro de Estudios y Servicios Ambientales, Cuba (CITMA); Ecology and Systematic Institute, Cuba (ESI); Agronomical Station at Santiago de Las Vegas, Cuba (ASLV); personal collection of John T. Polhemus (now collection of Colorado Entomological Museum), U.S.A (JTPC); University of Kansas Collections, U.S.A (KU); Habana Natural History Museum, Cuba (HNHM); Argentinean Museum of Natural Sciences “Bernardino Rivadavia”, Argentina (MACN); Harvard University, Museum of Comparative Zoology, U.S.A. (MCZ); Natural History Museum Charles T. Ramsden De La Torre, Cuba (NHMC); Natural History Museum of Wien (NHW); personal collection of Nico Nieser, the Netherlands (NN); Rijksmuseum van Natuurlijke Historie, Netherlands (RNH); Speleology Department of the Habana Speleological Society, Cuba (SDH); Speleological Institute of Bucharest, Romania (SIB); United States National Museum, U.S.A (USNM); Zoological Institute at Leningrad, Russia (ZIL).

Results

A total number of 74 species, 1 morphospecies, 35 genera, and 16 families were surveyed, distributed among the infraorders Dipsocoromorpha, Leptopodomorpha, Gerromorpha, and Nepomorpha. Most of the semiaquatic and aquatic families known from the Neotropical region were represented, and the last two infraorders accounted for 48.6% and 41.9% of the amount of species, respectively. Of the 74 formally described species occurring in Cuba, 7 are endemic to the island (9.5%), 7 endemic to the Caribbean subregion (9.5%), and 13 endemic to the Neotropics (17.6%).

Gerridae is the most diverse family in the country, with 20% of the genera and 18.9% of the species found; followed by Corixidae with 14.3% of genera and 14.9% of species totals; and Veliidae with 11.4% of the genera and 16.2% of the species. The family Naucoridae, very rich in the Neotropical region (López-Ruf *et al.* 2006; Polhemus and Polhemus 2008), was represented by a single species. Collections directed specifically to capture individuals of this family will probably provide new reports.

HETEROPTERA (16 families, 35 genera, 74 species, 1 morphospecies)

DIPSOCOROMORPHA (1 family, 1 genus, 1 species)

Dipsocoridae (1 genus, 1 species)

Cryptostemma Herrich-Schäffer, 1835 (1 species)

Cryptostemma linguata Nieser, 1973

Geographical distribution: endemic to Cuba; known only from type-locality.

Material from Cuba: Guantánamo, La Tinta, Río Baracoa, 03.IV.1969, Botosaneanu leg., 1♂ (probably NN) (Nieser 1973).

Habitat: collected between sands at edge of slowly flowing small stream.

GERROMORPHA (6 families, 5 genera, 36 species, 1 morphospecies)

Gerridae (7 genera, 14 species)

***Eurygerris* Hungerford & Matsuda, 1958 (3 species)**

***Eurygerris beieri* (Drake & Harris, 1934)**

Geographical distribution: endemic to the Neotropical region, occurring from Mexico to Venezuela.

Material from Cuba: Santiago de Cuba, Río Indio, Gran Piedra, 26.III.1973, Cuban-Romanian Biospeleological Expedition leg., 4♂ 2♀ (SDH, SIB) (Nieser 1977).

Habitat: collected in Cuba only in high altitude streams.

***Eurygerris cariniventris* (Champion, 1898)**

Geographical distribution: endemic to the Neotropical region, occurring from Mexico to Peru.

Material from Cuba: Sancti Spiritus, Lomas de Trinidad, no date or collector, 1 specimen (ASLV) (Alayo 1967, 1974). Santiago de Cuba, Sierra Maestra, afluente del Arroyo La Santana, no date, Zayas leg., no specimen number (NHMC) (Zayas 1986).

Habitat: collected in Cuba only in high altitude streams.

Comments. Alayo (1967, 1974) mentioned that the species is very common in streams located near the Gran Piedra Mountain, Santiago de Cuba, where *E. beieri* also occurs.

***Eurygerris dominicus* (Drake & Maldonado-Capriles, 1956)**

Geographical distribution: endemic to the Caribbean subregion, occurring in Cuba and Hispaniola islands.

Material from Cuba: Santiago de Cuba, Sierra Maestra, afluente del Arroyo Paco, V.1996, C. Naranjo leg., 1♂ (NHMC) (Naranjo *et. al* 2009).

Habitat: The only specimen collected in Cuba was identified by Dr. J. T. Polhemus in 1998. It was collected in a mountain stream higher than 300 m above the sea-level, with clear water and stone bottom

***Halobates* Eschscholtz, 1822 (1 species)**

***Halobates micans* Eschscholtz, 1822**

Geographical distribution: circumglobal, both north and south of the Equator; only species of the genus occurring on the Atlantic Ocean.

Material from Cuba: La Habana, Playa de Viriato, no date, Alayo leg., several specimens (ESI) (Alayo 1967, 1974).

Habitat: marine species found on open oceanic waters; rarely found near shore, except during or after storms.

***Limnogonus* Stål, 1868 (2 species)**

***Limnogonus franciscanus* (Stål, 1859)**

Geographical distribution: southern United States in the Nearctic region to Peru in the Neotropical region.

Material from Cuba: Río Bayamo, no date, T. Barbour leg., several specimens (MCZ) (Drake and Harris 1933). Habana, La Habana, no date or collector, several specimens (KU) (Kuitert 1942). Santiago de Las

Vegas, 11.XI.1958, P. H. van Doesburg Jr. leg., 4 ♂, 3 ♀ (RNH) (Nieser 1970). Guantánamo, Río Miel, Baracoa, 5.IV.1969, Cuban-Romanian Biospeological Expedition leg., 2 ♂, 1 ♀ (SDH, SIB). Arroyo Jarahueca, 25.III.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂, 1 ♀ (SDH, SIB). Resurgent of the Cueva El Indio, 15.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♀ (SDH, SIB) (Nieser 1977). Holguín, Río Mayarí, after Mayarí, 19.III.2001, M. Aldana & L. Fonseca leg., 1 specimen (NHMC) (Aldana and Fonseca 2001). Granma, Río Sevilla, El Chalet, 2.II.2003, D. Hernández & Y. R. Cala leg., 6 specimens (NHMC); Alto Montero, 3.II.2003, D. Hernández & Y. R. Cala leg., 2 specimens (NHMC) (Hernández and Cala 2003). Río Gibara, La Palma, 10.II.2002, Hernández & Bauta leg., 1 specimen (NHMC); Río Cacoyoguín, El Pachi, 3.II.2003, Hernández & Bauta leg., 51 specimens (NHMC); La Lima, 14.VI.2003, Hernández & Bauta leg., 1 specimen (NHMC) (Hernández and Bauta 2003). Camaguey, Río Máximo, Criadero de cocodrilos, 20.VI.2002, O. Bello leg., 8 specimens (NHMC); 6.VIII.2003, O. Bello leg., 6 specimens (NHMC); 18.II.2002, O. Bello leg., 10 specimens (NHMC); 12.III.2003, O. Bello leg., 10 specimens (NHMC) (Bello 2004). Guantánamo, Río Guaso, La Jita (3km antes de la Desembocadura), 19.I.2004, Y. Rodríguez & K. González leg., 2 specimens (NHMC) (Rodríguez and González 2004). Granma, Río Bayamo, Guisa, P. Mateo leg., 14 specimens (NHMC); Charcos Los Pitos, P. Mateo leg., 11 specimens (NHMC) (Mateo 2005). Guantánamo, Río Guantánamo, La Belleza, 16.III.2006, . Álvarez leg., 6 specimens (NHMC) (Álvarez 2007). Santiago de Cuba, Palma Soriano, Río Cauto, El Sitio, 1.VI.2005, Y. S. Megna leg., 1 specimen (NHMC); Laguna Temporal-1, La Cubana, 2.XI.2005, Y. S. Megna leg., 2 specimens. (NHMC) (Deler-Hernández *et. al* 2007).

Habitat: most abundant and widespread Cuban gerrid; inhabits stagnant or slow-flowing waters up to 600 m above the sea-level.

Limnogonus recens Drake & Harris, 1934

Geographical distribution: endemic to the Neotropical region, occurring from Mexico to Panama.

Material from Cuba: Matanzas, Ciénaga de Zapata, no date or collector, several specimens (KU) (Kuitert 1942)

Habitat: no detailed habitat data available; recorded from Cuba only by Kuitert (1942)

Metrobates Uhler, 1871 (1 species)

Metrobates tumidus Anderson, 1932

Geographical distribution: endemic to the Caribbean subregion, occurring in Cuba, Hispaniola, and Jamaica islands.

Material from Cuba: Trinidad Mountains, Mina Carlotta, 22.III.1925, J. G. Myers leg., 1 ♂, 3 ♀ (KU). Guantánamo, Baracoa, VIII.1901, A. Busck leg., 3 ♂, 1 ♀ (USNM) (Drake and Harris 1932). Camaguey, Río Máximo, La Sabana, 4 Km. al Norte del Poblado Charles Morell, 6.VI.2002, O. Bello. Leg., 16 specimens (NHMC); 18.VII.2003, O. Bello. leg., 8 specimens (NHMC); Cañada Amarilla, 22.VI.2002, O. Bello. Leg., 5 specimens (NHMC); 13.VIII. 2004, O. Bello. leg., 12 specimens (NHMC) (Bello 2004). Guantánamo, Parque Nacional Alejandro De Humboldt, Ceremonia B, III.2003, A. Trapero leg., 4 specimens (NHMC) (González-Lazo *et al.* 2005). Santiago de Cuba, Dos Palmas, Río Palenque, Campo Rico, 5.XII.2005, Y. S. Megna leg., 1 specimen (NMHC) (Deler-Hernández *et al.* 2007).

Habitat: slower and central areas of fast running, clear water rivers up to 750 m above sea-level.

Comments: the species seems to be quite common in Cuba, and Alayo (1967, 1974) mentioned its occurrence at Matanzas, Baracoa, Río Duaba; Habana, near Molena del Sur, Río Mayabeque; and Viñales, San Vicente, Río San Vicente.

***Neogerris* Matsumura, 1913 (1 species)**
***Neogerris hesione* (Kirkaldy, 1902)**

Geographical distribution: eastern United States in the Nearctic region to Panama in the Neotropical region.

Material from Cuba: Catalina, no date or collector, several specimens (KU) (Kuitert 1942). Habana, Laguna de Ariguanabo, no date or collector, 1 specimen (ESI). Matanzas, Ciénaga de Zapata, near Playa Larga, no date, Alayo leg., few specimens (ESI) (Alayo 1967, 1974).

Habitat: small impoundments, pools, ponds, marshes, and lakes, sometimes collected in stream pools; rare species in Cuba.

***Rheumatobates* Bergroth, 1892 (3 species)**
***Rheumatobates clanis* Drake & Harris, 1932**

Geographical distribution: Florida, United States, in the Nearctic region to Jamaica in the Caribbean subregion.

Material from Cuba: Matanzas, Río Yumurí, 11.VI.1932, P. J. Bermudez leg., 97 ♂, 66 ♀ (KU) (Hungerford 1954).

Habitat: brackish stagnant water; reported from Cuba only by Hungerford (1954).

***Rheumatobates meinerti* Schroeder, 1931**

Geographical distribution: endemic to the Caribbean subregion, occurring in Cuba, Hispaniola, and Jamaica islands.

Material from Cuba: Cienfuegos, Soledad, Jardín Botánico, II.1964, Alayo leg., several specimens (ESI) (Alayo 1967, 1974).

Habitat: stagnant water bodies.

***Rheumatobates vegatus* Drake & Harris, 1942**

Geographical distribution: Florida, United States, in the Nearctic region to Puerto Rico in the Caribbean subregion.

Material from Cuba: Isla de la Juventud, no date or collector, 1 ♂ (USNM) (Drake and Harris 1942). Matanzas, Río Yumurí, 11.VI.1932, P. J. Bermudez leg., 9 ♂, 7 ♀ (KU) (Hungerford 1954).

Habitat: lentic environments or slow flowing areas of rivers at altitudes near sea-level; can be found in lagoons and brackish or salt water near mangroves.

***Trepobates* Uhler, 1894 (3 species)**
***Trepobates carri* Kittle, 1982**

Geographical distribution: southern Texas, United States, in the Nearctic region to Honduras in the Neotropical region.

Material from Cuba: La Habana, Santiago de Las Vegas, 13.XI.1922, no collector, 1 ♀ (KU). Pinar de Río, Consolación del Sur, 16.IV.1930, no collector, 1 ♂, 1 ♀ (NN) (Kittle 1982).

Habitat: lentic and lotic habitats, including creeks, rivers, ponds and sinkholes.

***Trepobates pictus* (Herrich-Schäffer, 1848)**

Geographical distribution: Canada in the Nearctic region to the Caribbean subregion.

Material from Cuba: Cienfuegos, Soledad, Jardín Botánico, arroyo, no date, Alayo leg., some specimens, (ESI) (Alayo 1967, 1974).

Habitat: slow flowing or stagnant water bodies.

***Trepobates taylori* (Kirkaldy, 1899)**

Geographical distribution: southern Texas, United States, in the Nearctic region to Argentina in the Neotropical region.

Material from Cuba: Isla de la Juventud, Cayo Piedra, 20.VI.1973, Cuban-Romanian Biospeological Expedition leg., 1 specimen (NN) (Nieser 1977). Santiago de Cuba, Santiago de Cuba, Laguna de Baconao, no date, Alayo leg., several specimens (ESI) (Alayo 1974). Holguín, Río Mayarí, before Mayarí, 20.III.2003, M. Aldana & L. Fonseca leg., 1 specimen (NHMC); after Mayarí, 19.III.2001, M. Aldana & L. Fonseca leg., 1 specimen (NHMC) (Aldana and Fonseca 2001). Río Cacoyoguín, Puente Blanco, 20.VI.2001, Hernández & Bauta leg., 25 specimens (NHMC). (Hernández and Bauta 2003). Granma, Río Bayamo, Guisa, 22.I.2005, P. Mateo leg., 13 specimens (NHMC) (Mateo 2005).

Habitat: occupies very distinct habitats, from brackish lagoons and ponds to small mountainous rivers; found in Cuba up to 600 m above sea-level.

Hebridae (2 genera, 3 species)

***Hebrus* Curtis, 1833 (2 species)**

***Hebrus concinnus* Uhler, 1894**

Geographical distribution: southern Canada in the Nearctic region to Peru in the Andean subregion.

Material from Cuba: Cuba, 1 specimen without locality (HNHM) (Alayo 1967, 1974).

Habitat: river banks and lagoons with floating vegetation.

***Hebrus consolidus* Uhler, 1894**

Geographical distribution: southern United States in the Nearctic region to Guatemala in the Caribbean subregion.

Material from Cuba: Pinar del Río, Rangel, Aspiro, Río Taco-Taco, specimens collected in march (ESI) (Alayo 1967, 1974). Holguín, Arroyo Landivar, near Santa María, 10.III.1973, Cuban-Romanian Biospeological Expedition leg., 1♀ (NN). Isla de la Juventud, Base "J. A. Mella", 24.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1♀ (probably NN) (Nieser 1977).

Habitat: similar to those of *H. concinnus*, cited above.

***Merragata* White, 1877 (1 species)**

***Merragata hebroides* White, 1877**

Geographical distribution: Canada in the Nearctic region to Argentina in the Neotropical region (not reported from Chile); introduced in the Hawaiian Islands and Canary Islands.

Material from Cuba: Matanzas, Ciénaga de Zapata, Playa Larga, several specimens collected in april (ESI) (Alayo 1967, 1974). Santiago de Cuba, Dos Palmas, Presa Gilbert, 6.XII.2005, Y. S. Megna leg., 4 specimens (NHMC) (Deler-Hernández *et al.* 2007).

Habitat: found in Cuba between submerged vegetation of lentic habitats, from small ponds to dams, up to 200 m above sea-level.

Hermatobatidae (1 genus, 1 species)

Hermatobates Carpenter, 1892 (1 species)

Hermatobates breddini Herring, 1965

Geographical distribution: endemic to the Caribbean subregion; recorded from Cuba and Dominica, but probably occurs along other West Indian islands.

Material from Cuba: Pinar del Río, Corrientes Bay, 09.IV.1937, P. Bartsch leg., 1 ♂ (JTPC) (Polhemus and Herring 1979).

Habitat: coastal marine species; the type-series from Dominica was collected at light.

Hydrometridae (1 genus, 4 species, 1 morphospecies)

Hydrometra Latreille, 1796 (4 species, 1 morphospecies)

Hydrometra australis Say, 1832

Geographical distribution: southern United States in the Nearctic region to Antigua in the Neotropical region.

Material from Cuba: Camagüey, Paragua, 02.V.1927, no specimen number or collector specified (KU) (Hungerford and Evans 1934).

Habitat: stagnant water of creeks and streams, semipermanent and permanent vegetated pools, marshes, and swamps.

***Hydrometra caraiba* Guérin-Méneville, 1857**

Geographical distribution: endemic to the Neotropical region, occurring from Mexico to Peru.

Material from Cuba: Pinar del Río, Carabela Grande, no date or collector, 1 ♂ (ASLV) (Torre-Bueno 1926). Cienfuegos, Soledad, 1925, J. G. Myers leg., some specimens (probably KU) (Hungerford and Evans 1934). Cienfuegos, Jardín Botánico de Soledad, march, no collector (ESI) (Alayo 1967, 1974). Holguín, San Fernando, Río Gibara, 07.II.2002, Hernández & Bauta leg., 1 specimen (NHMC). Cuatro Caminos, 18.VI.2001, Hernández & Bauta leg., 1 specimen (NHMC) (Hernández and Bauta 2003).

Habitat: common species in Cuba, found on stream pools and ponds up to 200 m above sea-level.

***Hydrometra consimilis* Barber, 1923**

Geographical distribution: Florida, United States, in the Nearctic region to Puerto Rico in the Neotropical region.

Material from Cuba: La Habana, Santiago de Las Vegas, no date, S. C. Bruner leg., 2 ♀ (probably USNM). Camaguey, no date, J. Acuña leg., 1 ♀ (probably USNM) (Torre-Bueno 1926).

Habitat: no detailed habitat data available, but the specimens have been captured in lagoons in Puerto Rico.

***Hydrometra gibara* Torre-Bueno, 1926**

Geographical distribution: endemic to Cuba.

Material from Cuba: Camaguey, 22.VII.1923, J. Acuña leg., 1 ♂ (UC) (Torre-Bueno 1926). Holguín, San Fernando, Río Gibara, 12.6.2001, Hernández & Bauta leg., 1 specimen (NHMC). Cuevitas, 17.VII.2001, Hernández & Bauta leg., 3 specimens (NHMC) (Hernández and Bauta 2003).

Habitat: specimens have been collected on both flowing and stagnant areas of Gibara River, in Cuba, in localities up to 200 m above sea-level.

***Hydrometra* sp.**

Material from Cuba: Pinar del Río, Hoyo de Fania, 13.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♀ (NN) (Nieser 1977).

Comments: According Nieser (1977), Dr. J. T. Polhemus communicated to him that the female specimen above was very similar to *H. cyprina* Torre-Bueno, 1926, recorded only from Mexico. A male specimen was needed, however, for definite identification.

Mesoveliidae (1 genus, 2 species)

***Mesovelia* Mulsant & Rey, 1852**

***Mesovelia amoena* Uhler, 1894**

Geographical distribution: southern Canada in the Nearctic region to Brazil and the Galápagos Islands in the Neotropical region; introduced into the Hawaiian Islands.

Material from Cuba: Pinar del Río, Laguna La Cochinata, 16.IV.1973, Cuban-Romanian Biospeological Expedition leg., 2 ♀ (SDH, SIB) (Nieser 1977).

Habitat: common, but cryptic species rarely seen on open waters; collected on floating logs, moss covered rocks, and rock crevices in springs and streams, or in lentic habitats with aquatic plants.

***Mesovelia mulsanti* White, 1879**

Geographical distribution: Canada in the Nearctic region to Argentina in the Neotropical region (not reported from Chile); introduced into the Hawaiian Islands.

Material from Cuba: Habana, Botanical Garden, in artificial concrete basin, 27.VII.1929, 2 ♂, 5 ♀ (probably USNM) (Jaczewski 1930). Habana, Catalina, no date or collector (KU). Matanzas, Pueblo Nuevo, Río San Juan, no date or collector (KU). Santiago de Cuba, Ciénaga de Zapate, no date or collector (KU) (Neering 1954). Holguín, Gibara, near Finca El Pozón, Arroyo Landivar, 10.III.1973, Cuban-Romanian Biospeological Expedition leg., 2 ♀ (SIB) (Nieser 1977). La Palma, 10.XI.2002, Hernández & Bauta leg, 1 specimen. San Fernando, 7.XI.2002, Hernández & Bauta leg., 3 specimens. Cuevitas, 5.XI.2002, Hernández & Bauta leg., 1 specimen. La Victoria, 5.XI.2002, Hernández & Bauta leg., 1 specimen (NHMC) (Hernández and Bauta 2003). Granma, Río Bayamo, Guisa, P. Mateo leg., 5 specimens (NHMC) (Mateo 2005). Santiago de Cuba, Río Guantánamo, near Los Reinaldos, G. Álvarez leg., 1 specimen (NHMC) (Álvarez 2007).

Habitat: shore or floating vegetation of lentic habitats or running fresh or brackish water; found in Cuba from sea-level up to 600 m, being common in clear-water lagoons.

Veliidae (4 genera, 12 species)

***Microvelia* Westwood, 1834 (6 species)**

***Microvelia albonotata* Champion, 1898**

Geographical distribution: southern Canada in the Nearctic region to Peru in the Neotropical region.

Material from Cuba: Pinar del Río, Quemado de Pineda, arroyo, 14.IV.1973, Cuban-Romanian Biospeological Expedition leg., 2 ♀ (NN) (Nieser 1977). Santiago de Cuba, Santa Elena (Gran Piedra), no date, Zayas leg., 4 specimens (NHMC) (Zayas 1986).

Habitat: creeks, streams, swamps, marshes, lakes, bogs, and other impoundments habitats; collected in Cuba up to 750 m above sea-level.

Microvelia cubana Drake, 1951

Geographical distribution: southern Florida, United States, in the Nearctic region to the Dominican Republic, in the Caribbean subregion.

Material from Cuba: Habana, 24.II.1941, S. C. Brunner leg., 23 ♂ and ♀ (USNM). Guantánamo, Baracoa, IX.1901, no collector, 5 specimens (USNM) (Drake 1951). La Habana, Cueva de Emilio, near Ashton, pools in semi dark cave, 19.IV.1969, Botosaneanu leg., 1 ♂ (probably NN). Isla de la Juventud, Cayo Piedra, 20.IV.1973, Cuban-Romanian Biospeological Expedition leg., 6 ♂, 9 ♀ (SIB) (Nieser 1977). Camagüey, Río Máximo, Criadero de cocodrilos (27 Km del nacimiento), 18.II.2002, O. Bello leg., 4 specimens (NHMC); 20.VI.2002, O. Bello leg., 2 specimens (NHMC); 12.III.2003, O. Bello leg., 16 specimens (NHMC) (Bello 2004). Santiago de Cuba, San Lorenzo, no date, Zayas leg., 3 specimens (NHMC) (Zayas 1986).

Habitat: stagnant water bodies, including cave pools, up to 750 m above the sea-level.

Microvelia longipes Uhler, 1894

Geographical distribution: endemic to the Neotropical region, occurring from Cuba to Argentina.

Material from Cuba: Santiago de Cuba, Río Contramaestre, Pozo Caliente, 21.III.1973, Cuban-Romanian Biospeological Expedition leg., 5 ♀ (SDH, SIB) (Nieser 1977).

Habitat: stagnant freshwater; common in temporary small puddles and artificial pools.

Microvelia mimula White, 1879

Geographical distribution: endemic to the Neotropical region, occurring from Cuba to the Argentinean Patagonia.

Material from Cuba: Isla de la Juventud, Cayo Piedra, 20.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂ (SIB) (Nieser 1977).

Habitat: marginal or emergent vegetation of freshwater pools of various sizes, ponds, lakes, or stagnant areas of streams and rivers.

Microvelia paludicola Champion, 1898

Geographical distribution: southern United States in the Nearctic region to Puerto Rico in the Caribbean subregion.

Material from Cuba: Guantánamo, Río Miel, Baracoa, 05.IV.1969, Cuban-Romanian Biospeological Expedition leg., 1 ♂ (SDH, SIB). Arroyo de La Poa, Baracoa, 23.II.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂ (SDH, SIB). Holguín, Pinares de Mayarí, arroyo, 02.III.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂ (SDH, SIB). Río Mogote, near Matías, 21.III.1973, Cuban-Romanian Biospeological Expedition leg., 6 ♂, 8 ♀ (SDH, SIB). Arroyo Jarahueca, 25.III.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂, 1 ♀ (SDH, SIB). Pinar del Río, Quemado de Pineda, arroyo, 14.IV.1973, Cuban-Romanian Biospeological Expedition leg., 2 ♂, 4 ♀ (SDH, SIB) (Nieser 1977). Holguín, Río Cacoyugüín, Puente Blanco, 5.XI.2002, Hernández & Bauta leg., 60 specimens (NHMC); 20.VI.2002, Hernández & Bauta leg., 42 specimens (NHMC) (Hernández and Bauta 2003).

Habitat: common species throughout the year in Cuba, found in both stagnant water and slowly flowing streams near sea-level.

Microvelia pulchella Westwood, 1834

Geographical distribution: Canada in the Nearctic region to Argentina in the Neotropical region (not reported from Chile).

Material from Cuba: Holguín, well near Playa Guarda la Vaca, 07.IV.1969, Botosaneanu leg., 4 specimens. Holguín, near Banes, Cueva “Potrero del Molino” (Las Cuatrocienas Rosas), 7.IV.1969, Botosaneanu leg., 4 specimens. Ciego de Ávila, Cayo Zaguanes, Cueva Los Animales, pool in the cave, 29.IV.1969, Botosaneanu leg., 1 ♂; Cueva Grande, 2 ♂, 5 ♀. Matanzas, Cueva de Plumas, rimstone pools, 22.IV.1969, Botosaneanu leg., 1 ♂. La Habana, Cueva de Los Pérez, near Ashton, pool in cave, 11.IV.1969, Viña and Negrea leg., 1 ♀. Pinar del Río, near El Veral, Cueva del Jagüey, no date, Decou & Negrea leg., 1 ♀; Cueva del Agua, neat El Veral, pool in cave, no date, Negrea leg., 1 ♂, 2 ♀ (all above probably SDH, SIB) (Nieser, 1973). Santiago de Cuba, Siboney, Laboratorio Subterráneo G. Racovitza, artificial well, 6.III.1973, Cuban-Romanian Biospeological Expedition leg., 5 ♂, 9 ♀ (SDH, SIB). Río San Juan, near Santiago, 23.III.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂, 1 ♀ (SDH, SIB). Pinar del Río, Quemado de Pineda, arroyo, 14.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂ (SDH, SIB) (Nieser 1977).

Habitat: very common species in lentic habitats and slow-flowing regions of lotic environments, especially in areas rich in marginal vegetation or hydrophytes; can be found in caves, and is often collected in the same locations occupied by *M. longipes* or *M. mimula*.

***Platyvelia Polhemus & Polhemus, 1993* (1 species)**

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

Geographical distribution: United States in the Nearctic region to Argentina in the Neotropics.

Material from Cuba: Pinar del Río, no date [material collected in some localities of the Province at different occasions] (ESI) (Alayo 1967, 1974).

Habitat: shore vegetation, crevices of fallen logs, or upon rocks along the edge of the water.

***Rhagovelia Mayr, 1865* (4 species)**

***Rhagovelia collaris* (Burmeister, 1835)**

Geographical distribution: endemic to the Caribbean subregion, occurring in Cuba and Hispaniola islands.

Material from Cuba: Santa Clara Province [now split into Villa Clara, Cienfuegos and Sancti Spíritus provinces], loc. arroyo, 22.VI.1932, P. J. Bermudez leg., 26 ♂, 46 ♀ (KU). Matanzas, Yumuri Valley, 12-19.IX.1933, P. J. Bermudez leg., 20 ♂ 16 ♀ (KU) (Bacon 1956). Santiago de Cuba, Río Indio, Cabezas, torpid streamlet with rockpools, in tropical forest, 29.III.1969, Botosaneanu leg., 7 ♂ 4 ♀ (probably SDH, SIB). Guantánamo, La jaiba, near Palenque, stream formed by a karst spring, 31.III.1969, Botosaneanu leg., 4 ♀ (probably SDH, SIB) (Nieser 1973). Holguín, Río Mogote, near Matías, 21.II.1973, Cuban-Romanian Biospeological Expedition leg., 32 ♂, 23 ♀ (SDH, SIB). Santiago de Cuba, Río Indio, Gran Piedra, 26.III.1973, Cuban-Romanian Biospeological Expedition leg., 25 ♂, 9 ♀ apt. (SDH, SIB) (Nieser 1977). Pinar del Río, Arroyo Soroa, 5-6.II.1981, P. J. Spangler & A. Vega leg., 34 ♂, 33 ♀ (USNM); 27-29.IV.1983, P. J. Spangler & I. Fernandez G. leg., 7 ♂, 5 ♀ (USNM). La Habana, Playa Jibacoa, 4.II.1981, P. J. Spangler, A. Vega & M. Rosabal leg., 1 ♂. (USNM) (Polhemus 1997). Holguín, Río Mayarí, Piedra Gorda, 2.VII.1999, M. Aldana & L. Fonseca leg., 1 specimen (NHMC); Piloto Abajo, 7.VII.2000, M. Aldana & L. Fonseca leg., 3 specimens (NHMC). Los Naranjos, 6.VI.2000, M. Aldana & L. Fonseca. leg., 1 specimen (NHMC); 1.I.2001, M. Aldana & L. Fonseca leg., 4 specimens (NHMC); Ojo de Agua, 11.VI.2000, M. Aldana & L. Fonseca leg., 5 specimens (NHMC); Colorado Arriba, 3.II.2001, M. Aldana & L. Fonseca leg., 15 specimens (NHMC); before Mayarí, 20.III.2001, M. Aldana & L. Fonseca leg., 2 specimens (NHMC); after Mayarí, 19.III.2001, M. Aldana & L. Fonseca leg., 1 specimen (NHMC) (Aldana and Fonseca 2001). Granma, Río Yara, afluente La Santana, 14.VI.1999, P. López leg., 2 specimens (NHMC); afluente El Mogo, 15.VI.1999, P. López leg., 2 specimens (NHMC); between La Santana and el Mogo, 17.V.2001, P. López leg., 7 specimens (NHMC) (López 2001). Sancti Spiritus, Trinidad, Río Tayaba, Pastora-1, 27.I.2001, Y. Puerta, 3 specimens (NHMC); Pastora-2, 27.I.2002, Y. Puerta, 1 specimen (NHMC) (Puerta 2003). Granma, Río Sevilla, La Ceiba, no date,

D. Hernández & Y. R. Cala leg., 12 specimens (NHMC); Santa Isabel, no date, D. Hernández & Y. R. Cala leg., 13 specimens (NHMC); La Bota, no date, D. Hernández & Y. R. Cala leg., 8 specimens (NHMC); La Piedra, no date, D. Hernández & Y. R. Cala, 11 specimens (NHMC); La Manteca, no date, D. Hernández & Y. R. Cala leg., 1 specimen (NHMC) (Hernández and Cala 2003). Holguín, Río Gibara, La Victoria, 17.VII.2001, Hernández & Bauta, 1 specimen (NHMC); Río Cacoyugüín, La Lima, 4.II.2002, Hernández & Bauta leg., 6 specimens (NHMC); Candelaria, 8.II.2002, Hernández & Bauta leg., 14 specimens (NHMC); Puente Blanco, 5.II.2002, Hernández & Bauta leg., 3 specimens (NHMC); Purnio, 5.II.2002, Hernández & Bauta leg., 17 specimens (NHMC) (Hernández and Bauta 2003). Camaguey, Río Máximo, La Sabana, 12.II.2002, O. Bello leg., 9 specimens (NHMC); 3.III.2003, O. Bello, 2 specimens (NHMC) (Bello 2004). Granma, Parque Nacional La Bayamesa, Río Nuevo Mundo (abajo), 18.VI.2003, P. López leg., 1 specimen (NHMC); Grumay, 20.VI.2003, P. López leg., 1 specimen (NHMC); La Pangola, 19.VI.2003, P. López leg., 6 specimens (NHMC); El Zapato, 3.II.2004, P. López leg., 8 specimens (NHMC); Río Manguito, 3.II.2004, P. López leg., 4 specimens (NHMC); Río Nuevo Mundo, 5.II.2004, P. López leg., 5 specimens (NHMC) (López *et al.* 2004). Guantánamo, Parque Nacional Alejandro De Humboldt, Ceremonia A, III.2003, A. Trapero leg., 8 specimens (NHMC); Ceremonia B, III.2003, A. Trapero leg., 16 specimens (NHMC); Río Angostura, IV.2003, A. Trapero leg., 2 specimens (NHMC); Río Toa, Cupeyal del Norte, IV.2003, A. Trapero leg., 2 specimens (NHMC) (González-Lazo *et al.* 2005). Santiago de Cuba, Palma Soriano, Río Cauto, El Sitio, 01.VI.2005, Y. S. Megna leg., 1 specimen (NHMC); Dos Palmas, La Marsellesa, Arroyo-1, 02.XII.2005, Y. S. Megna leg., 11 specimens (NHMC); Campo Rico, Arroyo-1, 05.XII.2005, Y. S. Megna leg., 1 specimen (NHMC); Arroyo-3, 06.XII.2005, Y. S. Megna leg., 1 specimen (NHMC); Río Palenque, 06.XII.2005, Y. S. Megna leg., 1 specimen (NHMC) (Deler-Hernández *et al.* 2007). Río Guantánamo, 3 Km de la Belleza, no date, Álvarez leg., 20 specimens (NHMC); La Perla, no date, Álvarez leg., 9 specimens (NHMC); La Gloria, no date, Álvarez leg., 9 specimens (NHMC) (Álvarez 2007). Guantánamo, Río Cuzco, Sumidero del Río Cuzco, no date, S. Muñoz leg., 3 specimens (NHMC) (Muñoz *et al.* 2009).

Habitat: found all year long on slower flowing areas of fast running, clear water rivers up to 750 m above sea-level.

Rhagovelia cubana Polhemus, 1997

Geographical distribution: endemic to Cuba.

Material from Cuba: La Habana, no date, F. Z. Cervera leg., 1 ♂, 2 ♀. (KU). Matanzas, W. of Matanzas, Yumuri Valley, arroyo in Mena, 16.V.1932, P. J. Bermudez leg., 10 ♂, 8 ♀. (KU). Villa Clara, Trinidad Mountains, San Blas, S.C. Bruner & A. Otero leg., 05.V.1932, 1 ♂ (USNM); 1-9.III.1933, MacGillavry leg., 3 ♂, 4 ♀ (JTPC, USNM). Trinidad Mountains, Mina Carlotta, 11.VII.1939, C. T. Parsons leg., 5 ♀ (JTPC). San Juan de Yeras, Arroyo los Ganzos, 22.I.1932, P. J. Bermudez leg., 10 ♂, 10 ♀ (KU, JTPC) (Polhemus 1997).

Habitat: found on mid-altitude localities; probably ecologically segregated from *R. collaris*, for the two species have not been collected at the same locality up to the present.

Rhagovelia mira Drake & Harris, 1938

Geographical distribution: endemic to Cuba.

Material from Cuba: Santiago de Cuba, Sierra Maestra, 3000-4250 feet, 10-20.VII.1922, C. H. Ballon & S.C. Bruner leg., 5 ♂ (USNM, JTPC). Pico Turquino, north side, 4500-6000 feet, 18-20.VI.1936, P. Darlington leg., 2 ♂, 2 ♀ (AMNH, JTPC) (Polhemus 1997).

Comments. Without providing detailed information, Zayas (1986) recorded the species from the following localities in southeastern Cuba: Santiago de Cuba, Sierra Maestra, Río Indio, Ramón de Las Yaguas. Santa Elena, Gran Piedra. Limoncito. Afluente del Arroyo La Santana. Palma Mocha, Arroyo Paco. Palma Mocha, Arroyo la Emajagua. Cruce de los Baños. San Lorenzo. El Tartaro. La Anita.

Habitat: representatives of the species are found only in high altitude streams and rivers in southeastern Cuba.

***Rhagovelia plumbea* Uhler, 1894**

Geographical distribution: southern Florida, United States, in the Nearctic region to the Netherlands Antilles in the Neotropical Region.

Material from Cuba: La Habana, Playa de Santa Fe, IX.1970, L. de Armas & L. R. Hernández. leg., several specimens (ESI). Camaguey, costa sur, Jardines de la Reina, IV.1971, L. de Armas. leg., several specimens (ESI) (Alayo 1974).

Habitat: brackish or saline water on sheltered coastal areas.

***Steinovelia* Polhemus & Polhemus, 1993 (1 species)**

***Steinovelia stagnalis* (Burmeister, 1835)**

Geographical distribution: southern Canada in the Nearctic region to Cuba in the Caribbean subregion.

Material from Cuba: Santiago de Cuba, near the city of Santiago de Cuba, no date, Alayo leg., no specimen number (ESI) (Alayo 1967, 1974). Pinar del Río, Laguna La Cochinata, 16.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1 specimen (NN) (Nieser 1977). Granma, Rio Bayamo, El Vivero, no date, P. Mateo leg., 11 specimens (NHMC); Charco Los Pitos, no date, P. Mateo leg., 9 specimens (NHMC) (Mateo 2005).

Habitat: stagnant and standing water associated with aquatic vegetation; so far collected only at low altitudes in Cuba.

LEPTOPODOMORPHA (1 family, 3 genera, 6 species)

Saldidae (3 genera, 6 species)

***Micracanthia* Reuter, 1912 (1 species)**

***Micracanthia humilis* (Say, 1832)**

Geographical distribution: United States in the Nearctic region to Brazil in the Neotropical region.

Material from Cuba: Pinar del Río, Soroa, no date, Alayo leg., few specimens (ESI) (Alayo 1974).

Habitat: on river sand banks or leaves of floating water plants.

***Pentacora* Reuter, 1912 (3 species)**

***Pentacora hirta* (Say, 1832)**

Geographical distribution: United States in the Nearctic region to Cuba in the Caribbean subregion.

Material from Cuba: Matanzas, Ciénaga de Zapata, Playa Larga, at light, V.1965, Alayo leg., 1 specimen, (ESI) (Alayo 1974).

Habitat: among vegetation in salt marshes.

***Pentacora signoreti* (Guérin-Méneville, 1857)**

Geographical distribution: southern Canada in the Nearctic region to Cuba in the Caribbean subregion.

Material from Cuba: Guantánamo, Playa de Yateritas, charcos salobres, no date, Alayo leg., several specimens (ESI) (Alayo 1967, 1974).

Habitat: mud in salt lagoons and marshes.

Comments. more common in Cuba than *P. hirta*; Alayo (1974) reported collecting specimens in salt marshes similar to those in Playa de Yateritas, but did not mention the localities.

***Pentacora sphacelata* (Uhler, 1877)**

Geographical distribution: United States in the Nearctic region to the Netherlands Antilles in the Neotropical region; also known from Spain.

Material from Cuba: Matanzas, Ciénaga de Zapata, La Playa, banco de arena, no date, Alayo leg., some specimens (ESI) (Alayo 1967, 1974).

Habitat: on sand near seawater; Alayo (1967, 1974) mentioned collecting specimens in a sand bank almost completely surrounded by the sea.

***Saldula* Van Duzee, 1914 (2 species)**

***Saldula coxalis* (Stål, 1873)**

Geographical distribution: southern United States in the Nearctic region to Argentinean Patagonia in the Neotropical region.

Material from Cuba: only record from Cuba is that on the original description, without additional locality information.

Habitat: temporary or permanent pools and streams, ponds and marshes with abundant riparian vegetation.

***Saldula pallipes* (Fabricius, 1803)**

Geographical distribution: cosmopolitan.

Material from Cuba: Alayo (1967, 1974) mentioned its occurrence in Cuba, without detailing its distribution throughout the island.

Habitat: intertidal environments; found in Cuba at the banks of rivers and lagoons, often on the same aquatic plants where *P. hirta* was collected.

NEPOMORPHA (8 families, 15 genera, 31 species)

***Belostomatidae* (3 genera, 5 species)**

***Belostoma* Latreille, 1807 (2 species)**

***Belostoma ellipticum* Latreille, 1833**

Geographical distribution: eastern Texas, United States, in the Nearctic region to Honduras in the Neotropical region.

Comments: reported from Cuba as *Zaitha anurum* by Champion (1901). The *Z. anurum* of Champion is nowadays interpreted as a mixture of species, and the Cuban material originally reported by him probably corresponds to *B. ellipticum*. *Belostoma ellipticum* itself is also a problematic species taxonomically and may eventually become a *nomen dubium*.

***Belostoma minor* (Palisot de Beauvois, 1805)**

Geographical distribution: southern United States in the Nearctic region to Puerto Rico in the Neotropical region.

Material from Cuba: Isla de la Juventud, Cayo Piedra, 20.V.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂ (NN). Holguín, Arroyo Landivar, at “Santa María”, 20.III.1973, Cuban-Romanian Biospeological Expedition leg., 2 specimens (SIB) (Nieser 1977). Río Mayarí, antes del Pueblo de Mayarí, 20.III.2001, M. Aldana & L. Fonseca leg., 1 specimen (NHMC) (Aldana and Fonseca 2001). Villa Clara, Cayería Norte, Cayo Español de Adentro, 2002, Aragón, Ravelo, O’Farril & Pérez leg., no specimen number (probably CITMA) (Aragón *et al.* 2003). Río Gibara, La Palma, 10.II.2002, Hernández & Bauta leg., 2

specimens (NHMC); Río Cacoyoguín, Candelaria, 8.II.2002, Hernández & Bauta leg., 6 specimens; 8.II.2003, Hernández & Bauta leg., 1 specimen (NHMC) (Hernández and Bauta 2003). Camaguey, Río Máximo, La Sabana, 6.VI.2002, O. Bello leg, 1 specimen (NHMC); 18.VII.2003, O. Bello leg., 1 specimen (NHMC) (Bello 2004). Guantánamo, Río Guaso, La Marellesa, 3.VII.2003, Y. Rodríguez & K. González leg., 2 specimens (NHMC) (Rodríguez and González 2004). Granma, Río Bayamo, Guisa, 22.I.2005, P. Mateo leg., 8 specimens (NHMC) (Mateo 2005). Santiago de Cuba, Palma Soriano, Río Cauto, El Sitio, 1.VI.2005, Y. S. Megna leg., 2 specimens (NHMC) (Deler-Hernández *et al.* 2007). Río Guantánamo, Cercanías de Los Reinaldos, no date, G. Álvarez leg., 1 specimen (NHMC); El Deposito, no date, G. Álvarez leg., 2 specimens (NHMC) (Álvarez 2007).

Habitat: river pools, ponds, and lakes up to 600 m above sea-level; can overwinter in small groups under rocks or fallen logs.

***Benacus* Stål, 1862 (1 species)**

***Benacus griseus* (Say, 1832)**

Geographical distribution: Great Lakes region between Canada and United States in the Nearctic region to Honduras in the Neotropical region.

Material from Cuba: La Habana, Marinao, Río Almendares, 24.V.1922, P. J. Bermudez leg., no specimen number (KU); XI.1932, P. J. Bermudez leg., no specimen number (KU) (Cummings 1933). Holguín, Río Mayarí, before Mayarí, 20.II.2001, M. Aldana & L. Fonseca leg., 1 specimen (NHMC) (Aldana and Fonseca 2001).

Habitat: ponds, and estuaries of creeks and rivers; relatively abundant in Cuba, according to Alayo (1967, 1974).

***Lethocerus* Mayr, 1853 (2 species)**

***Lethocerus colossicus* (Stål, 1854)**

Geographical distribution: endemic to the Neotropical region, occurring from Mexico to Panama.

Material from Cuba: Santiago de Cuba, XI.1932, P. J. Bermudez leg., no specimen number (KU). La Habana, Central San Antonio, Madruga, 8.VI.1932, P. J. Bermudez leg., no specimen number (KU) (Cummings 1933). Granma, Rio Bayamo, Guisa, 19.VI.2004, P. Mateo leg., 2 specimens (NHMC); 22.I.2005, P. Mateo leg., 1 specimen (NHMC) (Mateo 2005). La Habana, no date or collector, 1 ♂ 1 ♀ (NHMW) (Perez-Goodwyn 2006).

Habitat: not as common in Cuba as *L. medius* (Guérin-Méneville, 1857), but sometimes collected at light together with representatives of the last species.

***Lethocerus medius* (Guérin-Méneville, 1857)**

Geographical distribution: southern United States in the Nearctic region to Venezuela in the Neotropical region.

Material from Cuba: Holguín, no date or collector, 1 ♀ (Perez Goodwyn 2006).

Habitat: according to Alayo (1967, 1974), commonly collected in Cuba at light near any freshwater body.

Corixidae (5 genera, 11 species)

***Centrocoris* Lundblad, 1928 (1 species)**

***Centrocoris nigripennis* (Fabricius, 1803)**

Geographical distribution: Texas, United States, in the Nearctic region to Trinidad & Tobago in the Neotropical region.

Material from Cuba: La Habana, Catalina, 27.XI.1933, P. J. Bermudez leg., 5 ♀ (KU). Matanzas, Yumuri Valley, 9.XII.1933, P. J. Bermudez leg., 1 ♂ (KU). Matanzas, Río Camina, 12.XII.1933, P. J. Bermudez leg. (KU). Santiago de Cuba, Alto Songo, Jutrica, 9.XI.1924, no collector, 3 ♂, 3 ♀ (AMNH). Cayamas, no date, E. A. Schwarz, 2 ♀ (USNM). La Habana, Guanajay, 3.V, Palmer & Riley leg., 1 ♀ (USNM). La Habana, Santiago de Las Vegas, 10.XII.1922, no collector, 1 ♀ (probably USNM); 31.X.1922, 1 ♀ (probably USNM). La Habana, Santiago de Las Vegas, 5.X.1923, S. C. Bruner leg., 1 ♂, 2 ♀ (probably USNM) (Hungerford 1948).

Habitat: ponds, marshes, springs, and river pools.

Comments: Alayo (1967, 1974) reported collecting representatives of the species in all Cuban provinces, but did not give distributional details.

***Corisella* Lundblad, 1928 (1 species)**

***Corisella edulis* (Champion, 1901)**

Geographical distribution: United States in the Nearctic region to Cuba in the Caribbean subregion.

Material from Cuba: Isla de la Juventud, La Fé, 20.IV.1973, Cuban-Romanian Biospeleological Expedition leg., 1 ♂ (NN) (Nieser 1977).

Habitat: recorded from lentic environments and lentic sections of rivers.

***Ramphocorixa* Abbott, 1912 (1 species)**

***Ramphocorixa rotundocephala* Hungerford, 1927**

Geographical distribution: Arizona, United States, in the Nearctic region to Puerto Rico in the Neotropical region.

Material from Cuba: Camaguey, Río Máximo, Puente Caído (35 Km. del Nacimiento del Río), 23.II.2002, O. Bello leg., 1 specimen (NHMC); 14.III.2003, O. Bello leg., 1 specimen (NHMC) (Bello 2004).

Habitat: no detailed habitat data available; material from NHMC was collected in a slow section of Río Máximo.

***Sigara* Fabricius, 1790 (3 species)**

***Sigara bradleyi* (Abbott, 1913)**

Geographical distribution: southern United States in the Nearctic region to Cuba in the Caribbean subregion.

Material from Cuba: Camaguey, 2.IX.1926, J. Acuña. Leg., 10 ♂, 34 ♀ (KU) (Hungerford 1948). Guantánamo, Río Guantánamo, La Gloria, G. Álvarez leg., 2 specimens (NHMC) (Álvarez 2007).

Habitat: no detailed habitat data available; material from NHMC was collected near sea-level.

***Sigara cubiensis* Hungerford, 1948**

Geographical distribution: endemic to the Caribbean subregion, occurring in Cuba and Puerto Rico islands.

Material from Cuba: Camaguey, 10.VIII.1924, J. Acuña leg., 3 ♂, 1 ♀ (KU) (Hungerford 1948).

Habitat: habitat preference data not available; known only from the type-series.

***Sigara jarmanae* Hungerford, 1939**

Geographical distribution: endemic to the Neotropical region, occurring in Mexico and Cuba.

Material from Cuba: La Habana, Santiago de Las Vegas, 31.X.1932, S. C. Bruner leg., 1 ♂, 1 ♀ (KU). Soledad, 14.II.1925, J. G. Meyers leg., 1 ♀ (KU), Camaguey, VIII.1924, J. Acuña leg., 1 ♂, 1 ♀ (KU); 21.VII.1923, J. Acuña leg., 1 ♂ (KU) (Hungerford 1948).

Habitat: no detailed habitat data available; apparently co-occurs with *S. bradleyi* and *S. cubiensis* in Camaguey Province.

***Trichocorixa* Kirkaldy, 1908 (6 species)**

***Trichocorixa louisianae* Jaczewski, 1931**

Geographical distribution: southeastern Canada in the Nearctic region to Puerto Rico in the Caribbean subregion.

Material from Cuba: Matanzas, Pueblo Nuevo, Río San Juan, 18.VI.1932, P. J. Bermudez leg. (KU). Matanzas, central Matanzas, crossing carretera, Río Canimar, 10.VI.1932, P. J. Bermudez leg. (KU). Matanzas, Ojo de Agua, El Estero Del Río Yumuri, 18.VI.1932, P. J. Bermudez leg. (KU). Pinar del Río, Cabañas, 5.IX.1913, S. C. Bruner leg. (probably USNM). La Habana, Santiago de Las Vegas, 5.IX.1925, S. C. Bruner leg. (probably USNM) [no specimen number given for all above] (Sailer 1948). Isla de la Juventud, Represa La Fé, 22.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂, 2 ♀ (SDH, SIB). Pinar del Río, Laguna la Cochinata, 16.IV.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♀ (SDH, SIB). Holguín, Santa María, Arrollo Landivar, 10.III.1973, Cuban-Romanian Biospeological Expedition leg., 5 ♂, 15 ♀ (SDH, SIB) (Nieser 1977).

Habitat: marshes and river pools covered by hydrophytes.

***Trichocorixa minima* (Abbott, 1913)**

Geographical distribution: southeastern United States in the Nearctic region to Cuba in the Neotropical region.

Material from Cuba: Yaguramas, 12.XII, W. H. Sligh leg., no specimen number (KU). Matanzas, Ciénaga de Zapata, 6.XII.1932, P. J. Bermudez leg., no specimen number (KU) (Sailer 1948).

Habitat: sand-shore lakes, ponds, and marshes rich in hydrophytes.

***Trichocorixa reticulata* (Guérin-Méneville, 1857)**

Geographical distribution: southern United States in the Nearctic region to Peru in the Neotropical region; introduced in the Hawaii Islands.

Material from Cuba: Pinar del Río, Cabañas, no collector, date, or specimen number (KU) (Sailer 1948). Matanzas, Ciénaga de Zapata, no date, Alayo leg., no specimen number (ESI) (Alayo 1967, 1974). Guantánamo, Río Guaso, La Marsellesa, 22.I.2004, Álvarez leg., 1 specimen (NHMC) (Álvarez 2007).

Habitat: halobiont species, being found exclusively in saline or brackish water.

***Trichocorixa sexcincta* (Champion, 1901)**

Geographical distribution: Canada in the Nearctic region to Cuba in the Caribbean subregion.

Material from Cuba: La Habana, Catalina, 27.XI.1933, P. J. Bermudez leg., no specimen number (KU). Matanzas, Ciénaga de Zapata, 6.XII.1933, P. J. Bermudez leg., no specimen number (KU). Central Matanzas, Río Canimar, crossing Carretera, 10.VI.1932, P. J. Bermudez leg., no specimen number (KU) (Sailer 1948).

Habitat: sand-bottom streams, swamps, bogs, lakes, ponds, and marshes.

***Trichocorixa verticalis* (Fieber, 1851)**

Geographical distribution: Canada in the Nearctic region to the Lesser Antilles in the Neotropical region..

Material from Cuba: Matanzas, 20.V.1933, P. J. Bermudez leg. (KU). Matanzas, Pueblo Nuevo, Río San Juan, 18.VI.1932, P. J. Bermudez leg. (KU). Matanzas, Río Buey Yaca, 12.V.1932, P. J. Bermudez leg. (KU). La Habana, Coljímar, Cueva Camarones, 21.XII.1933, P. J. Bermudez leg., (KU). Pinar del Río, Cabañas, 5.IX.1933, P. J. Bermudez leg. [no specimen number given for all above] (KU) (Sailer 1948). Guantánamo, Tortuguilla, no date, Alayo leg., no specimen number (ESI). La Habana, Laguna de Ariguanabo, no date, Alayo leg., no specimen number (ESI) (Alayo 1967, 1974).

Habitat: halobiont species, being found exclusively in saline or brackish water.

Gelastocoridae (1 genus, 1 species, 2 subspecies)

Gelastocoris Kirkaldy, 1897 (1 species, 2 subspecies)

Gelastocoris oculatus oculatus (Fabricius, 1798)

Geographical distribution: southern Canada in the Nearctic region to Cuba in the Caribbean subregion.

Material from Cuba: Pinar del Río, Soroa, no date, Alayo leg., no specimen number (ESI). Santiago de Cuba, Cuabitas, no date, Alayo leg., no specimen number (ESI) (Alayo 1974).

Habitat: littoral areas of rivers; rare species in Cuba according to Alayo (1967, 1974).

Gelastocoris oculatus variegatus (Guérin-Méneville, 1844)

Geographical distribution: southern Texas, United States, in the Nearctic region to Colombia in the Neotropical region.

Material from Cuba: Granma, Río Yara, no date, Zayas leg., no specimen number (NHMC) (Zayas 1986).

Habitat: littoral areas of rivers; found in higher altitudes in Cuba.

Naucoridae (1 genus, 1 species)

Pelocoris Stål, 1876 (1 species)

Pelocoris poeyi (Guérin-Méneville, 1835)

Geographical distribution: endemic to the Neotropical region, occurring from Cuba to northern South America.

Material from Cuba: Holguín, Baire, El Cayo, 22.III.1973, Cuban-Romanian Biospeological Expedition leg., 2 ♀, 4 nymphs (SDH, SIB). Arollo Landivar, Santa María, 10.III.1973, Cuban-Romanian Biospeological Expedition leg., 1 nymph (SDH, SIB) (Nieser 1977). Río Mayarí, Los Naranjos, 6.VI.2000, Aldana & Fonseca leg., 1 specimen (NHMC) (Aldana and Fonseca 2001). Río Givara, La Victoria, 5.II.2002, Hernández & Bauta leg., 1 specimen (NHMC); Río Cacoyoguin, La Lima, 14.VI.200, Hernández & Bauta leg., 2 specimens (NHMC); Puente Blanco, 20.VI.2002, Hernández & Bauta leg., 1 specimen (NHMC) (Hernández and Bauta 2003). Sancti Spiritus, Río Tayaba, Pastora 2, 24.VI.2002, Y. Puerta leg., 1 specimen (NHMC) (Puerta 2003). Granma, Río Sevilla, La Manteca, 18.XII.2002, D. Hernández & Y. R. Cala leg., 2 specimens (NHMC); La Ceiba, 5.II.2003, D. Hernández & Y. R. Cala leg., 2 specimens (NHMC) (Hernández and Cala 2003). Río Bayamo, El Vivero, no date, P. Mateo, 1 specimen (NHMC) (Mateo 2005). Santiago de Cuba, Palma Soriano, Río Cauto, El Sitio, 1.VI.2005, Y. S. Megna, 5 specimens (NHMC) (Deler-Hernández et. al 2007). Guantánamo, Río Guantánamo, La Belleza, no date, G. Álvarez leg., 6 specimens (NHMC) (Álvarez 2007).

Habitat: found in Cuba in freshwater bodies with muddy bottoms and rich in aquatic vegetation up to 200 m above sea-level.

Nepidae (1 genus, 2 species)

***Ranatra* Fabricius, 1790**

***Ranatra fabricii* Guérin-Méneville, 1857**

Geographical distribution: endemic to Cuba.

Material from Cuba: La Habana, Santiago de Las Vegas, no date or collector, no specimen number (USNM). Matanzas, no date or collector, no specimen number (USNM) (De Carlo 1964). Isla de la Juventud, Base "J. A. Mella", 24.IV.1973, Cuban-Romanian Biospeological Expedition leg., 9 ♂, 4 ♀ (SDH, SIB) (Nieser 1977). Holguín, Río Mayarí, Ojo de Agua, 11.VI.2000, M. Aldana & L. Fonseca leg., 2 specimens (NHMC); before Mayarí, 20.III.2001, M. Aldana & L. Fonseca leg., 1 specimen (NHMC) (Aldana and Fonseca 2001). Río Gibara, Cuatro Caminos, 6.II.2002, Hernández & Bauta leg., 2 specimens (NHMC); 18.VI.2001, Hernández & Bauta leg., 12 specimens (NHMC); La Palma, 10.II.2002, Hernández & Bauta leg., 67 specimens (NHMC); San Fernando, 7.II.2002, Hernández & Bauta leg., 4 specimens (NHMC); Cuevitas, 5.II.2002, Hernández & Bauta leg., 10 specimens (NHMC); Río Cacoyugüín, El Pachi, 3.II.2003, Hernández & Bauta leg., 1 specimen (NHMC) (Hernández and Bauta 2003).

Habitat: very common species, found in ponds, lakes, and muddy rivers up to 200 m above the sea-level.

***Ranatra sagrei* Drake & De Carlo, 1953**

Geographical distribution: endemic to Cuba.

Material from Cuba: La Habana, Santiago de las Vegas (MACN, USNM) (Drake and De Carlo 1953). Sancti Spiritus, Río Tayaba, Pastora 1, 6.II.2000, Y. Puerta leg., 1 specimen (NHMC) (Puerta 2003).

Habitat: rare species with no habitat data available in literature; material from NHMC collected in a low altitude river.

Notonectidae (2 genus, 7 species)

***Buenoa* Kirkaldy, 1904 (6 species)**

***Buenoa antigone antigone* (Kirkaldy, 1899)**

Geographical distribution: endemic to the Neotropical region, from Mexico to Argentina.

Material from Cuba: Camagüey, 2.VII.1923, J. Acuña leg., 1 ♂, 2 ♀ (KU). Soledad, 14.II.1925, J. G. Meyers leg., 1 ♂ (probably USNM). La Habana, Botanical Garden, I.1925, P. J. Bermudez leg., 10 ♂ (KU). La Habana, Catalina, 27.XI.1933, P. J. Bermudez leg., 23 ♂, 16 ♀ (KU) (Truxal 1953). Isla de la Juventud, Cayo Piedra, 20.IV.1973, Cuban-Romanian Biospeological Expedition leg., 5 ♂, 10 ♀ (SDH, SIB) (Nieser 1977). Santiago de Cuba, Sierra Maestra, afluente del Arroyo La Santana, no date, Zayas leg., no specimen number (NHMC); Palma Mocha, Arroyo Paco, no date, Zayas leg., no specimen number (NHMC); Arroyo La Demajagua, no date, Zayas leg., no specimen number (NHMC) (Zayas 1986).

Habitat: most common species of the genus in Cuba, found in lakes and slow sections of streams up to 750 m above sea-level. Alayo (1967, 1974) mentioned collecting specimens on almost all Cuban provinces, but did not provide distributional details.

***Buenoa gracilis* Truxal, 1953**

Geographical distribution: endemic to the Neotropical region, occurring from Mexico to Peru.

Material from Cuba: Santiago, 20.IX.1912, J. M. Espin leg., 4 ♂, 3 ♀ (USNM). Guantánamo, San Carlos, 4-8.X.1913, no collector, 2 ♂, 1 ♀ (USNM). La Habana, Botanical Garden, 25.I.1932, P. J. Bermudez leg., 17 ♂, 12 ♀ (KU). Holguín, Río Cacoyoguin, Puente Blanco, 20.VI.2001, Hernández & Bauta, 1 specimen (NHMC) (Hernández and Bauta 2003).

Habitat: no detailed habitat data available; found in Cuba up to 600 m above sea-level.

Buenoa macrophtalma (Fieber, 1851)

Geographical distribution: endemic to the Caribbean subregion, occurring in Cuba, Hispaniola, Jamaica, and Puerto Rico islands.

Material from Cuba: near Santiago de Cuba, no date, Alayo leg., no specimen number (ESI). Gran Piedra, no date, Alayo leg., no specimen number (ESI) (Alayo 1974). Río Indio, Gran Piedra, 20.III.1969, Cuban-Romanian Biospeological Expedition leg., 1 ♀ (SDH, SIB); 26.III.1973, 1 ♂, 3 ♀ (SDH, SIB). Guantánamo, Río Miel, Baracoa, 5.IV.1969, Cuban-Romanian Biospeological Expedition leg., 1 ♀ (SDH, SIB) (Nieser 1977). Guantánamo, Parque Nacional Alejandro De Humboldt, Ceremonia B, III.2003, A. Trapero leg., 1 specimen (NHMC) (González-Lazo *et al.* 2005). Sancti Spiritus, Reserva Ecológica Banao, Arroyo El Regalo, 6.II.2005, P. López leg., 1 specimen (NHMC) (López *et al.* 2006).

Habitat: streamlet pools up to 750 m above sea-level.

Buenoa platycnemis (Fieber, 1851)

Geographical distribution: southern United states in the Nearctic region to northern Argentina in the Neotropical region.

Material from Cuba: Soledad, 14.II.1925, J. G. Meyers, 2 ♂, 5 ♀ (probably USNM). La Habana, Botanical Garden, 25.I.1932, P. J. Bermudez leg., 6 ♂, 8 ♀ (KU). La Habana, Casa Blanca, 20.XII.1933, P. J. Bermudez leg., 7 ♂, 11 ♀ (KU). La Habana, Habana, 1933, P. J. Bermudez leg., 31 ♂, 14 ♀ (KU). La Habana, Catalina, 27.XI.1933, P. J. Bermudez leg., 1 ♀ (KU). Matanzas, Yumury Valley, 9.XII.1933, P. J. Bermudez leg., 1 ♂ (KU) (Truxal 1953). Pinar del Río, Consolación del Sur, 5.VI.1930, L. Natenson leg., 5 ♂, 11 ♀ (ZIL) (Nieser 1969). Santiago de Cuba, Sierra Maestra, afluente del Arroyo La Santana, no date, Zayas leg., no specimen number (NHMC); Palma Mocha, Arroyo Paco, no date, Zayas leg., no specimen number (NHMC); Arroyo La Demajagua, no date, Zayas leg., no specimen number (NHMC) (Zayas 1986).

Habitat: common species throughout the island, up to 750 m above sea level, co-occurring with *B. antigone antigone* in some localities.

Buenoa scimitra Bare, 1925

Geographical distribution: United States in the Nearctic region to Trinidad & Tobago in the Neotropical region.

Material from Cuba: La Habana, 25.I.1932, P. J. Bermudez leg., 2 ♀ (KU) (Truxal 1953).

Habitat: springs, permanent and semipermanent ponds; Alayo (1967, 1974) reported that the species is not commonly captured in Cuba, but was collected in several localities on the island.

Notonecta Linnaeus, 1758 (2 species)

Notonecta indica Linnaeus, 1771

Geographical distribution: southern and eastern United States in the Nearctic region to Colombia in the Neotropical region; introduced into the Hawaiian Islands.

Material from Cuba: La Habana, 25.I.1932, P. J. Bermudez leg. (KU). La Habana, no date, Baker leg. (USNM). Soledad, 4.IV.1925, J. G. Meyers leg. (KU). Littletown, 1.I.1878, no collector (KU) [no specimen number given for all above] (Hungerford 1933). Holguín, Baire, El Cayo, 21.III.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♂, 1 nymph (SIB) (Nieser 1977). Río Givara, La Victoria, 17.VII.2001, Hernández & Bauta leg., 11 specimens (NHMC); Río Cacoyoguin, La Lima, 4.II.2002, Hernández & Bauta leg., 2 specimens (NHMC); Puente Blanco, 20.VI.2002, Hernández & Bauta leg., 1 specimen (NHMC) (Hernández and Bauta 2003). Camaguey, Río Máximo, Criadero de cocodrilos (27 Km del nacimiento), 18.II.2002, O. Bello leg., 3 specimens (NHMC); 12.III.2003, O. Bello leg., 1 specimen (NHMC) (Bello

2004). Granma, Parque Nacional La Bayamesa, El Zapato, 3.II.2004, P. López leg., 1 specimen (NHMC); Río Manguito, 3.II.2004, P. López leg., 8 specimens (NHMC) (López *et al.* 2004). Sancti Spiritus, Reserva Ecológica Banao, Arroyo El Regalo, 6.II.2005, P. López leg., 3 specimens (NHMC) (López *et al.* 2006). Santiago de Cuba, Río Mariano, Dos palmas, La Guadalupe, 30.XI.2005, Y. S. Megna leg., 2 specimens (NHMC); La Cubana, Laguna temporal-1, 2.XII.2005, Y. S. Megna leg., 11 specimens (NHMC); Campo Rico, Arroyo-3, 6.XII.2005, Y. S. Megna leg., 1 specimen (NHMC); Río Cauto, Palma Soriano, El Sitio, 1.VI.2005, Y. S. Megna leg., 2 specimens (NHMC) (Deler-Hernández *et. al* 2007). Guantánamo, La Belleza, no date, G. Álvarez leg., 1 specimen (NHMC) (Álvarez 2007).

Habitat: very common in Cuba, inhabiting ponds, lakes, marshes, and river pools up to 600 m above sea-level. Alayo (1967, 1974) mentioned examining specimens from all Cuban provinces, without detailing the distribution of the species throughout the island.

Notonecta confusa Hungerford, 1930

Comments: *N. confusa* was described based on a single male specimen from “South America”. Later, Hungerford (1933) mentioned having one specimen labeled “Cuba” which belonged to the species. De Abate (1960) suspected that the species would occur in Costa Rica.

Ochteridae (1 genus, 2 species)

Ochterus Latreille, 1807 (2 species)

Ochterus acutangulus (Champion, 1901)

Geographical distribution: endemic to the Neotropical region, occurring in Mexico, Guatemala and Cuba.

Comments: recorded from Cuba only by Drake (1952), without locality information.

Ochterus hungerfordi Schell, 1943

Geographical distribution: endemic to Cuba.

Material from Cuba: Matanzas, Yumuri Valley, 1932, P. J. Bermudez leg., 1 ♂, 1 ♀ (KU). Guantánamo, Baracoa, no date or collector, 1 ♀ (USNM) (Schell 1943).

Habitat: littoral areas of streams and rivers.

Pleidae (1 genus, 1 species)

Paraplea Esaki & China, 1928 (1 species)

Paraplea puella (Barber, 1923)

Geographical distribution: southern United States in the Nearctic region to the Guyanas in the Neotropical region; also recorded from the Galápagos Islands.

Material from Cuba: La Habana, Laguna de Ariguanabo, no date, Alayo leg., no specimen number (ESI). Cienfuegos, Soledad, no date, Alayo leg., no specimen number (ESI) (Alayo 1974). Isla de La Juventud, Base “J. A. Mella”, 24.IV.1973, Cuban-Romanian Biospeological Expedition leg., 2 ♀ (SDH, SIB). Pinar del Río, La laguna La Cochinata, 16.IV.1973, Cuban-Romanian Biospeological Expedition leg., 3 ♀ (SDH, SIB). Holguín, Arroyo Landivar, at “Santa María”, 10.III.1973, Cuban-Romanian Biospeological Expedition leg., 3 ♀ (SDH, SIB). Santiago de Cuba, Siboney, Laguna de Juragua, 4.III.1973, Cuban-Romanian Biospeological Expedition leg., 1 ♀ (SDH, SIB). Río San Juan, 23.III.1973, 10♀♀, Cuban-Romanian Biospeological Expedition leg. (SDH, SIB) (Nieser 1977). Granma, Río Yara, Puente Carretera Yara-Manzanillo, 20.VI.1999, P. López leg., 1 specimen (NHMC); Puente del Ferrocarril, 21.I.2001, P. López leg., 1 specimen (NHMC) (López 2001). Holguín, Río Cacoyoguin, Puente Blanco, 5.II.2002, Hernández &

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Habitat: common in Cuba at ponds, lakes and streams up to 200 m above the sea-level.

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