

STUDIES ON THE FAUNA OF CURAÇAO AND OTHER
CARIBBEAN ISLANDS: No. 112.

RECORDS OF ANTILLEAN WATER-STRIDERS
(Heteroptera)

by

M. DE KORT-GOMMERS & N. NIESER
(Zoölogisch Laboratorium, Utrecht)

The material studied was mainly collected during Dr. P. WAGENAAR HUMMELINCK's voyages to the West Indies in the years 1936/37, 1948/49, 1955 and 1963/64. The specimens from the Netherlands Antilles have been studied by COBBEN 1960, and DRAKE & COBBEN 1960. The present contribution deals mainly with the older material from other islands and the specimens collected during the 1963/64 trip.

Some of the identifications were done by Mr. L. VAN DIJK and Mr. H. DE VUYST, during predoctoral studies.

The authors are indebted to Dr. HUMMELINCK (Zoölogisch Laboratorium, Utrecht) for permission to study the material and to Dr. Ir. R. H. COBBEN (Laboratorium voor Entomologie, Wageningen) for loan of identified specimens. Mrs. E. DE GROOT-TAAT kindly corrected the greater part of the manuscript.

This paper deals with the families Hebridae, Mesoveliidae, Gerridae and Veliidae. The Hydrometridae have been treated elsewhere (NIESER, in the press).

Measurements (in mm) were taken with the longitudinal and transverse axes of the animal in a horizontal plane. The humeral width of the pronotum was taken as principal measurement for the width of the animal. The length of the first antennal segment was measured in dorsal view. Drawings were made by means of a camera lucida or with a squared graticule under a binocular microscope. If necessary, clearing was done in hot 10% KOH-solution.

Reference specimens of most species have been deposited in the collection of the

Zoölogisch Museum at Utrecht. If this is not the case, they are present in the Afd. Systematiek, Zoölogisch Laboratorium, at Utrecht. All specimens without indication were collected by Dr. HUMMELINCK.

An exclamation mark (!) indicates a new island locality.

No keys to species are given. The descriptions or comparative notes contain the characteristics necessary for separating the species from others which might be found on the Lesser Antilles. Synonymy is abridged; older synonyms can be found in the various revisions of the genera or groups.

HEBRIDAE Amyot & Serville, 1843

Hebrus consolidus Uhler, 1894

Hebrus consolidus UHLER, 1894, p. 222 (Grenada).

Hebrus consolidus; DRAKE & COBBEN 1960, p. 40, fig. 20-21 (Curaçao).

U.S.A., Louisiana, Mississippi, Florida; MÉXICO; GUATEMALA; COSTA RICA; CANAL ZONE; JAMAICA; GRENADA; TRINIDAD; CURAÇAO.

CURAÇAO: Hato, Bron Wandongo, *Sta. 76Aa*, 11.X.1936, 5♂, 6♀ macropterous (S).

Length 1.7 - 1.8; humeral width of pronotum 0.80 - 0.83 mm.

Colour reddish. Vertex with narrow median sulcus, length of antennal segments I = 0.16 - 0.19, II = 0.13 - 0.15, III = 0.22 - 0.23, IV = 0.14 - 0.15, V = 0.21 - 0.23 mm. Longitudinal groove on pronotum broad and shallow, anteriorly with two coarse pits. Scutellum rounded with a small apical notch. Male paramere Fig. 170.

This species is smaller than *H. concinnus* Uhl., which has a length of slightly over 2 mm; it is lighter than *H. elimatus* DRAKE & COBBEN, which has the length of the 4th antennal segment shorter than the length of the 2nd segment; whereas in *H. consolidus* these segments have the same length or the 4th is slightly longer.

Hebrus elimatus Drake & Cobben, 1960

Hebrus elimatus DRAKE & COBBEN, 1960, p. 40-43, fig. 20-22 (Bonaire, Curaçao, Aruba).

BONAIRE; CURAÇAO; ARUBA.

CURAÇAO: Sta. Barbara, Pos Bacoval, *Sta.* 388, 14.VIII.1948, 1♀.

Length 1.85, humeral width of pronotum 0.78 mm.

Colour, blackish, lateral and hind margin of head, anterior margin and central area of pronotum and dorsum of abdomen lighter, reddish brown. Head with median longitudinal sulcus. Median groove on pronotum broad and shallow, anteriorly with two coarse pits. Scutellum rounded, with a small apical notch. Length of antennal segments, I = 0.19, II = 0.14, III = 0.22, IV = 0.13 and V = 0.21 mm.

Hebrus elimatus is similar to *H. consolidus*; apart from the differences cited under that species there are also differences in the punctuation of the pronotum.

MESOVELIIDAE Douglas & Scott, 1867

Mesovelia amoena Uhler, 1894

Mesovelia amoena UHLER, 1894, p. 218 (Grenada).

Mesovelia amoena; JACZEWSKI 1930, p. 9-11, fig. 25 (St. Vincent).

Mesovelia amoena; COBBEN 1960, p. 30-31, fig. 15, 17 (St. Eustatius, Bonaire, Curaçao).

U.S.A., southern states; PANAMÁ; BRASIL; JAMAICA; PUERTO RICO; ST. EUSTATIUS; MARTINIQUE!; ST. VINCENT; GRENADA; BONAIRE; CURAÇAO.

MARTINIQUE: Rivière Salée, Petit Bourg, *Sta.* 769, 10.II.1964, 3♀ (S).

CURAÇAO: Bron di San Pedro N., *8oAa*, 13.II.1949, 2♀ (S). All apterous.

Length, female, 2.1 - 2.3 mm.

This species can be separated from *M. mulsanti*, which is the only other species of *Mesovelia* known from the Lesser Antilles, by its length, which is 3 mm or more in *M. mulsanti*.

If *Mesovelia douglasensis* Hungerford will prove to be identical with *M. amoena*, its distribution will cover nearly the whole of the U.S.A.

Mesovelia mulsanti White, 1879

Mesovelia mulsanti WHITE, 1879, p. 268-269 (Amazonas).

Mesovelia bisignata UHLER, 1884, p. 273, fig. 324 (Northeastern U.S.A.).

Mesovelia mulsanti; JACZEWSKI 1930, p. 5-9, fig. 1-24, pl. 3 (Cuba, St. Thomas, Grenada).

Mesovelia mulsanti; NEERING 1954, p. 125-148, fig. 1-9 (Cuba, Jamaica, Puerto Rico, St. Croix).

Mesovelia mulsanti; COBBEN 1960, p. 26-30, fig. 14, 17, 18 (St. Martin, Bonaire, Curaçao, Aruba).

CANADA, British Columbia, Manitoba, Ontario; U.S.A., except for some not coastal N.W. states; MÉXICO, Baja California, Sonora, Nuevo León, Tamaulipas, Jalisco, México D.F., Vera Cruz, Guerrero, Oaxaca, Chiapas, Tabasco, Campeche, Quintana Roo, Yucatán; GUATEMALA; BRITISH HONDURAS; HONDURAS; EL SALVADOR; COSTA RICA; PANAMÁ; COLOMBIA; VENEZUELA; BRITISH GUIANA; BRASIL, Pará, Pernambuco, Amazonas, Rondônia, Minas Gerais, Paraná, Sta. Catarina, Rio Grande do Sul; ARGENTINA, Misiones, Sta. Fé; FLORIDA keys; CUBA; JAMAICA; PUERTO RICO; ST. THOMAS; ST. CROIX; ST. MARTIN; GUADELOUPE !; MARIE-GALANTE !; ILES-DES-SAINTES !; ST. VINCENT; BARBADOS !; GRENADA; TRINIDAD !; LOS TESTIGOS !; BONAIRE; CURAÇAO; ARUBA.

PUERTO RICO: Laguna Cartagena, Valle de Lajas, *Sta. 706*, 18.IX.1963, 3♂, 14♀, 2♂ macr.

ST. THOMAS: Brookman River, bridge, *687*, 17.VI.1955, 2♀.

ST. MARTIN: Slob of Proeftuin St. Peter, *537*, 24.V.1949, 1♂, 1♀; Puddle near Doctor's Well, *539*, 24.V.1949, 1♂; same, *539a*, 29.VI.1955, 2♀; Crab Hole Cistern, *530*, 18.V.1949, 1♂.

GUADELOUPE: Source de la Baie Nord-Ouest, W. of Moule, *727*, 28.I.1964, 1♀; Source d' Audouin, SE of Moule, *728*, 28.I.1964, 2♂, 3♀; Pond de Boisvin, S of Moule, *729*, 29.I.1954, 1♀.

MARIE-GALANTE: Mare Lagon, Les Galeries, Capesterre, *749*, 2.II.1964, 16♂, 19♀, many larvae, 1♂ macr.; Rivière du Vieux Fort, Vangôut, *752*, 7♂, 10♀; Mare du Moulin de Grand Pierre, *754*, 1.II.1964, 1♀; Mangles de Folle Anse, S. of St. Louis, *755*, 31.I.1964, 1♂; Rivière de St. Louis, Les Sources, *756*, 1.II.1964, 1♀ macr.

ILES-DES-SAINTES: Terre-de-Haut, mare basse, *759*, 6.II.1964, 1♂, 1♀.

BARBADOS: Sedge Pond, W. of Belleplaine, *782*, 17.II.1964, 11♂, 15♀, 3♂ macr.; Hometown River pool, near bridge, *1444*, 8.II.1964, 1♀.

TRINIDAD: Pitch Lake pool, *796*, 16.I.1964, 1♂, 2♀, some larvae.

LOS TESTIGOS: Poza Grande de la Iguana, *30*, 14.VI.1936, 13♀.

BONAIRE: Pos Bronswinkel, *44b*, 23.VIII.1955, 1♂, 1♀, some larvae; same, *44B*,

23.VIII.1955, 53♂, 21♀; Pos Baca, 53g, 4.XII.1963, 2♀; Pos Baca Grandi, 379e, 26.III.1955, 2♀; same, 379g, 4.XII.1963, 5♀, many larvae.
 ARUBA: Rooi Bringamosa, 103B, 5.XI.1963, 1♀.

Except for a few specimens this material has been identified by Mr. H. DE VUYST. Specimens mentioned are apterous unless otherwise indicated.

Length, male 3.0 – 3.3 – 3.5, female 3.5 – 3.6 – 3.8 mm (apterous specimens).

M. mulsanti can be separated from *M. amoena*, the only other species of *Mesovelia* known to occur in the Lesser Antilles, by its greater length.

GERRIDAE Amyot & Serville, 1843

Limnogonus franciscanus (Stål, 1859)

- Gerris marginatus*; GUÉRIN 1857, p. 415 (Cuba).
Gerris franciscanus STÅL, 1859, p. 265 (California).
Gerris guerini LETHIERRY & SEVERIN, 1896, p. 61.
Limnogonus guerini; DRAKE & HARRIS 1934, p. 109 (West Indies).
Limnogonus franciscanus; DRAKE & HARRIS 1935, p. 2.
Limnogonus franciscanus; BARBER 1939, p. 407–408 (Cuba, Jamaica, Hispaniola, Puerto Rico, Grenada, St. Vincent).
Limnogonus guerini; KUITERT 1942, p. 129 (Cuba, Jamaica, Hispaniola, Puerto Rico, St. Thomas).
Limnogonus franciscanus; BEATTY 1944, p. 127 (St. Croix).
Limnogonus franciscanus; RAMOS 1946, p. 23 (Mona Island).
Limnogonus guerini; COBBEN 1960, p. 12–13, fig. 1–2 (St. Martin, Bonaire, Curaçao, Aruba).

U.S.A., California, Texas; MÉXICO, Tabasco, Chiapas; BRITISH HONDURAS; COSTA RICA; PERÚ; CUBA; JAMAICA; HISPANIOLA, Haiti; MONA; PUERTO RICO; ST. THOMAS; ST. CROIX!; ST. MARTIN; BARBUDA!; MARIE-GALANTE!; MARTINIQUE!; ST. VINCENT; GRENADA; BARBADOS!; TRINIDAD; BONAIRE; CURAÇAO; ARUBA.

- ST. THOMAS: Brookman River Bridge, *Sta. 687*, 17.VI.1955, 1♂, 3♀ micropterous.
 ST. CROIX: Trough at Canaan, *684*, 10.VI.1955, 2♀ micr.; same, *684A*, 1♂ micr.
 BARBUDA: Low Pond N. of Village, *674*, 5.VII.1955, 1♂ macropterous.
 MARIE-GALANTE: Mare du Moulin de Grand Pierre, *754*, 1.II.1964, 1♂, 1♀ macr.
 MARTINIQUE: Ruisseau de la Pagerie, *770*, 10.II.1964, 1♂ micr.
 BARBADOS: Bellair's pool, Holetown, *787*, 21.II.1964, 6♂, 5♀ micr.
 TRINIDAD: Bamboo Groove, *654*, 29.I.1955, 1♀ macr., 2♂ micr.

BONAIRE: Pos Caranja, salinja, 630, 27.III. 1955, 1♀ macr., 2♀ micr.

These specimens have been identified by Mr. L. VAN DIJK, during predoctoral studies. A number of specimens labeled *L. guerini* have been distributed before the above synonymy was noticed.

Length, male 6.4 – 6.7 – 7.2, female 6.9 – 7.2 – 7.4 mm.

Pronotum laterally with yellowish stripe extending to front lobe,

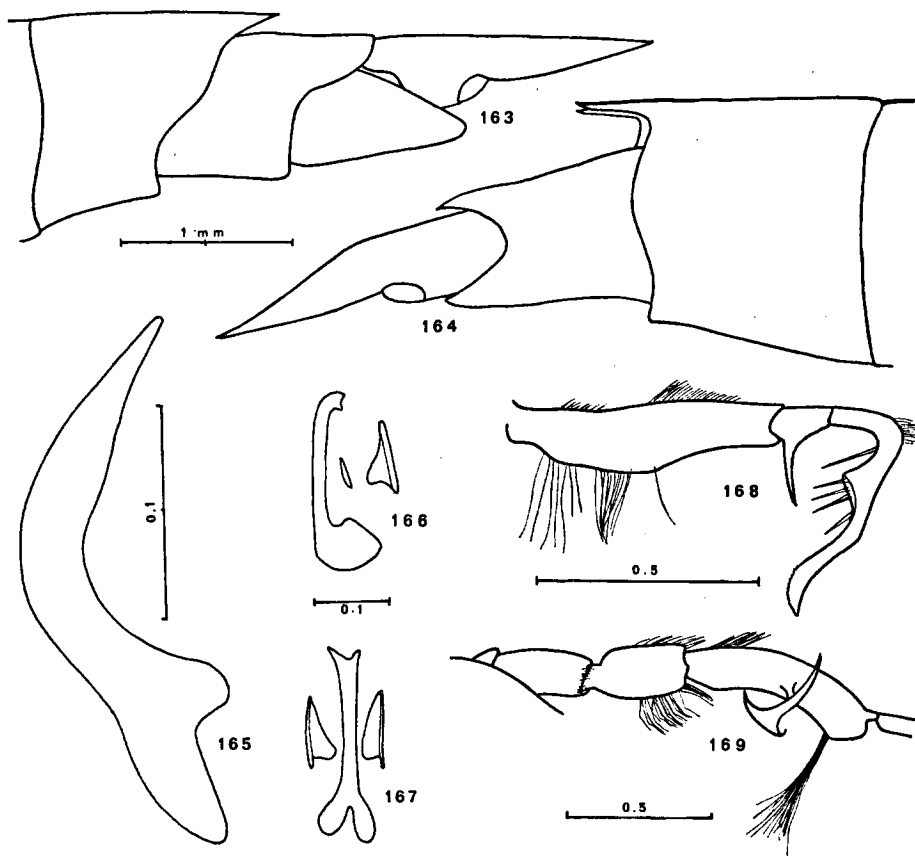


Fig. 163–164. *Cylindrostethus palmaris*, from Trinidad, apex of abdomen: 163, male; 164, female.

Fig. 165–167. *Brachymetra albinervis*, male, from Grenada: 165, paramere; 166, chitinous parts in aedeagus, lateral view; 167, chitinous parts in aedeagus, dorsal view.

Fig. 168–169. *Rheumatobates imitator*, male, from Guadeloupe: 168, antenna; 169, basal part of hind leg.

upper part of mesopleurae black with a broad yellowish stripe, connexivum dorsally with a broad uninterrupted longitudinal yellowish stripe. Length of first antennal segment nearly twice the width of head across eyes. Connexivum distally with short projections extending beyond last abdominal tergite and sternite. Last sternite broadly rounded. Male first genital segment not produced at apex, slightly impressed on each side.

Cylindrostethus palmaris Drake & Harris, 1934

Cylindrostethus linearis; DRAKE & HARRIS (nec ERICHSON), 1930, p. 238.

Cylindrostethus palmaris; DRAKE & HARRIS, 1934, p. 222 (Trinidad).

Cylindrostethus palmaris; KUITERT 1942, p. 136-137.

Cylindrostethus palmaris; HYNES 1948, p. 346 (Trinidad).

BOLIVIA; BRASIL, Amazonas, Pará; GUYANA; TRINIDAD.

TRINIDAD: Pond between Four Roads and Tetron Bay, *Sta. 117*, 7.V.1936, 2♂, 1♀ apt.

Length male 17.3-17.5; female about 20 mm.

Colour grayish-blackish. Antennae entirely dark, length of first antennal segment distinctly more than the width of the head across eyes. Apex of abdomen male Fig. 163, female Fig. 164.

These specimens are aberrantly coloured but their structural characteristics agree with *C. palmaris* from Brasil and Surinam. As the specimens were partly decayed it is not sure they had this colour when living.

Brachymetra albinervis (Amyot & Serville, 1843)

Halobates albinervis AMYOT & SERVILLE, 1843, p. 412.

Brachymetra albinervis; UHLER 1894, p. 212-213 (St. Vincent, Grenada).

Brachymetra albinerva; SHAW 1933, p. 228-229, fig. 1 (Trinidad).

Brachymetra albinerva; ROBACK 1966, p. 213.

PANAMÁ; CANAL ZONE; PERÚ, Amazonas; BRASIL, São Paulo; PARAGUAY; MARTINIQUE!; ST. VINCENT; GRENADA; TRINIDAD; MARGARITA!.

MARTINIQUE: Ruisseau de la Pagerie, Trois-lets, *Sta. 770*, 10.II.1964, 1♀ macr.

GRENADA: Corinth River, 100 m, *660*, 25.I.1955, 1♀ brach., 2♂, 5♀ macr.

TRINIDAD: Pond between Four Roads and Tetron Bay, 117, 7.V.1936, 3♂ apt.
MARGARITA: Río Asunción, 22, 3.VII.1936, 1♀ brach.

Length of body, male 5.9, female 5.7 – 6.3 – 6.5 mm; hemielytra surpassing apex of abdomen about 0.5 mm.

Colour brown with a reddish tinge, brachypterous specimens somewhat lighter than macropterous. Eyes black. Antennae dark except the small annulus between segment two and three, which is lighter brown. Hind margin of pronotum blackish. Hemielytra with whitish-yellowish veins. Middle and hind acetabula with small patches of silvery hairs dorsally at apex. Length of antennal segments identical in males and females, I = 1.15 – 1.29 – 1.35; II = 0.64 – 0.69 – 0.70; III = 0.80 – 0.87 – 0.93; IV = 0.60 – 0.63 – 0.66 mm. The annulus between segment II and III is measured with segment III. Apex of first antennal segment, if folded back, surpassing the hind margin of eyes. Anterior femur distinctly wider than intermediate femur. Male clasper Fig. 165, chitinous plates in aedeagus Fig. 166.

Halobates micans Eschscholtz, 1822

Halobates micans ESCHSCHOLTZ, 1822, p. 107.
Halobates micans; ESAKI 1926, p. 130.
Halobates micans; HYNES 1948, p. 349 (Trinidad).
Halobates micans; POISSON 1965, p. 1496.

Tropical parts of the ATLANTIC, INDIAN and PACIFIC OCEAN.

ANTIGUA: Antigua Beach Hotel, beach, 11.VI.1965, 1♂ (leg. D. C. Geijskes).
TRINIDAD: Cocos Beach at Nariva Bridge, among debris, Sta. 789, 17.I.1964, 4♂,
2♀ (S).

Length, male 4.2 – 4.4 – 4.5; female 3.5 – 3.6 mm.

Colour grey. Middle legs with long hairs along inner margin of tibia and first tarsal segment. Abdomen strongly reduced.

The only other species of *Halobates* known to occur in the Atlantic Ocean, *H. flaviventris* Eschsch., measures 4.9–5.2 mm.

Rheumatobates imitator (Uhler, 1894)

- Hymenobates imitator* UHLER, 1894, p. 214 (Grenada).
Rheumatobates imitator; BARBER 1939, p. 407 (Puerto Rico).
Rheumatobates imitator; DRAKE & HARRIS 1942, p. 401 (Puerto Rico, St. Croix, Trinidad).
Rheumatobates imitator; HYNES 1948, p. 347 (Trinidad).
Rheumatobates imitator; HUNGERFORD 1954, p. 567-568, fig. 25 (Puerto Rico, Trinidad).

PUERTO RICO; ST. CROIX; GUADELOUPE!; GRENADA; TRINIDAD;
 VENEZUELA!.

- GUADELOUPE: Source de la Baie Nord-Ouest, W. of Moule, *Sta. 727*, 28.I.1964, 2♀, 2 lv; Source d'Audouin, S.E. of Moule, *728*, 28.I.1964, 2♂, 2♀, 2 lv; Pond de Boisvin, S. of Moule, *729*, 29.I.1964, 3♀, 6 lv.
 VENEZUELA: Río Guanta, N. Barcelona, *2*, 7.IV.1937, 1♀.

Length, male 2.49 – 2.50, female 2.75 – 2.86 – 2.92 mm.

Colour dorsally, brownish black, spot on pronotum, mesonotum, base of antennae and legs and apical part of connexivum yellowish. Male, antenna Fig. 168, basal part of hind leg Fig. 169. Female, length of antennal segments I = 0.23, II = 0.10 – 0.11, III = 0.31, IV = 0.24 – 0.27 mm.

This species is similar to *R. mexicanus* D. & Hott., which has the posterior trochanters distinctly narrower than the coxae and to *R. bergrothi* Meinert and *R. meinerti* Schroeder which have the posterior trochanter relatively longer, at least $\frac{4}{5}$ of the length of hind femur. The remaining *Rheumatobates* lack the T-shaped projection on hind femur.

Rheumatobates minutus Hungerford, 1936

- Rheumatobates minutus* HUNGERFORD, 1936, p. 147-148.
Rheumatobates minutus; DRAKE & HARRIS 1937 (Puerto Rico).
Rheumatobates minutus; HUNGERFORD 1954, p. 545-546, fig. 4 (Puerto Rico).
Rheumatobates minutus; HUSSEY 1955, p. 122.

U.S.A., Florida; MÉXICO, Yucatán; PANAMÁ; PUERTO RICO.

- FLORIDA, Everglades National Park, Anhinga Trail (fresh water ditch), 6.IX.1963, 2♂, 2♀, 4 lv apt.

Length, male 1.60, female 2.07 – 2.12 mm.

Colour dorsally blackish, posterior margin of head, median spot on pronotum and the, often large, spot on mesonotum yellowish. In males the spot on mesonotum is subtriangular, broadest caudally, in females it is bilobed caudally. First genital segment of males lighter, in females with a central lighter spot. Antennae and legs not modified, nor greatly thickened. Length of antennal segments male I = 0.17, II = 0.08, III = 0.20, IV = 0.16; female I = 0.16, II = 0.08, III = 0.20, IV = 0.16 mm. Anterior femora 1.2 – 1.3 times thicker than middle femur. First genital segment not distinctly hairy. Male front femur with hairs but without row of distinct spines on caudal side.

R. minutus differs from other species of *Rheumatobates* with apterous males measuring under 2 mm, by the unmodified legs and having third and not first antennal segment longest.

VELIIDAE Amyot & Serville, 1893

Microvelia pulchella Westwood, 1834

Velia (Microvelia) pulchella WESTWOOD, 1834, p. 647–648, pl. 6 fig. 5 (St. Vincent).

Rhagovelia incerta KIRBY, 1890, p. 548.

Microvelia pulchella; DRAKE & HUSSEY 1955, p. 102–104 (Cuba, Puerto Rico, St. Vincent, Grenada, Trinidad).

Microvelia pulchella incerta; DRAKE & HUSSEY 1955, p. 104–106.

Microvelia pulchella; COBBEN 1960, p. 20–23, fig. 10–11 (St. Martin, Saba, Bonaire, Klein Bonaire, Klein Curaçao, Curaçao, Aruba).

CANADA; U.S.A.; NEOTROPICAL REGION (where it is not yet recorded from Chile only); CUBA; JAMAICA; GRAND CAYMAN; PUERTO RICO; ST. THOMAS!; ANGUILLA!; ST. MARTIN; SABA; NEVIS!; GUADELOUPE!; LA DÉsirADE!; MARIE-GALANTE!; ILES-DES-SAINTES!; ST. VINCENT; GRENADA; TRINIDAD; BLANQUILLA!; ORCHILA!; BONAIRE; KLEIN BONAIRE; KLEIN CURAÇAO; CURAÇAO; ARUBA.

PUERTO RICO: Laguna Cartagena, Valle de Lajas, *Sta.* 706, 18.IX.1963, 1♀ apt.

ST. THOMAS: Brookmans River, 687, 17.VI.1955, 2♀, 2 lv apt., 2♂ macr.

ANGUILLA: Spring of Maze Bay, 545, 18.VI.1949, 1♀ apt.

- ST. MARTIN: Pond of Point Blanche, 528a, 5.VI.1955, 2♂, 1♀, 1 lv; Old Battery Cistern, 529b, 3.VI.1955, 1♂; Puddle in Rambeau Valley, 532, 20.V.1949, 1♀; Doctor's Well, 538b, 16.X.1963, 4♀; Trough of Doctor's Well, 538A, 16.X.1963, 1♂, 3 lv apt.; Puddle near Doctor's Well, 539a, 29.VI.1955, 7♂, 8♀, 1 lv apt., 2♂ macr.
- NEVIS: Nelson's Spring, 500, 28.VI.1949, 21♂, 83♀, 119 lv apt.; 18♂, 4♀, 5 lv macr.; Jones' River, 501, 28.VI.1949, 1♀ macr.
- GUADELOUPE: Pond de Boisvin, near Moule, 729, 29.I.1964, 1♀, 1 lv apt., 1♀ macr.
- LA DÉsirADE: Puits des Galets, 737, 25.I.1964, 3♂, 4♀, 3 lv apt., 1♂ macr.; Saline de Grande Anse, 1436, 23.I.1964, 1♂, 2 lv macr.
- MARIE-GALANTE: Mare Lagon, Capesterre, 749, 2.II.1964, 12♂, 13♀, 8 lv apt.; 2♂, 8♀, 2 lv macr.; Rivière du Vieux Fort, Vangôut, 751, 31.I.1964, 1♂, 1♀ macr.; Mare Médecinié, Meynard, 753, 31.I.1964, 4♂, 8♀, 2 lv, macr.; Mare du Moulin de Grand Pierre, 754, 1.II.1964, 11♂, 10♀, 10 lv apt., 4♂, 8♀ macr.
- ILES-DES-SAINTES: Terre-de-haut, mare basse, 759, 6.II.1964, 8♂, 13♀, 13 lv apt., 3♂, 2♀, 1 lv macr.

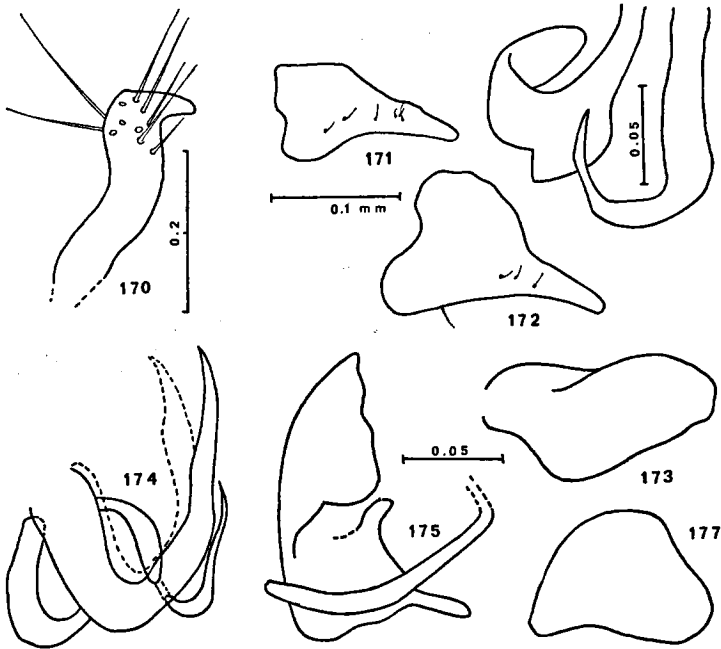


Fig. 170. *Hebrus consolidus*, male, from Curaçao, paramere.
 Fig. 171-173. *Microvelia pulchella*. - Male from Marie-Galante: 171, right paramere; 172, left paramere. - Male from Nevis; 173, chitinous parts in aedeagus.
 Fig. 174. *Microvelia longipes*, male from St. Martin, chitinous parts in aedeagus.
 Fig. 175-177. *Rhagovelia angustipes*, male, from Martinique: 175, chitinous parts in aedeagus; 176, left paramere; 177, right paramere.

- MARTINIQUE: Fosse du Baie de Tartane, 767, 9.II.1964, 3♂, 2♀, 9 lv apt., Ruisseau de la Pagerie, 770, 10.II.1964, 2♀, 8 lv apt.
- GRENADA: Well of Calliste, Pointe Salines, 659, 23.I.1955, 1♀ apt.
- TRINIDAD: Icacos Swamp, 793, 16.I.1955, 9♂, 2♀, 2 lv apt., 3♂, 3♀ macr.; Pitch Lake pool, 796, 16.I.1964, 2♂, 3♀ apt., 2♂, 1♀ macr.
- BLANQUILLA: Pozo de la Playa del Jaque, 36, 21.VII.1936, 1♂ apt.; Pozo de Aguada, 38, 22.VII.1936, 9♂, 12♀ apt.
- ORCHILA: Huespen, Pozo Chiquito, 40, 24.VII.1936, 2♂, 11♀, 2 lv apt.
- BONAIRE: Pos Boven Bolivia, 49, 24.III.1937, 20♂, 22♀, 4 lv apt., 1♀ macr.; Tanki di Nene George, Deentera, 50, 25.III.1937, 1♀ macr.; Pos Baca, 53a, 31.III.1937, 7♀ apt., 3♂, 1♀ macr.; same, 53d, 21.II.1947, 2♂, 3♀, 6 lv apt.; same, 53e, 26.III.1955, 60♂, 74♀, 42 lv apt., 1♂, 1♀ macr.; same, 53g, 4.XII.1963, 1♂, 7 lv apt.; Pos Baca Grandi, 379g, 4.XII.1963, 1♀ apt.
- KLEIN BONAIRE: Pos di Cas, 61d, 3.XII.1963, 2♂, 9♀, 28 lv; Tanki Calbas, 63a 23.III.1937, 8♂, 16♀ apt.
- KLEIN CURAÇAO: Pos N. of Lighthouse, 64, 29.VIII.1936, 35♀ apt., 3♀ macr.
- CURAÇAO: Curaçaosche Museum pool, 390, 25.IV.1949, 1♂ apt., 1♂, 1♀ macr.; Tanki Steenen Koraal, 392, 17.IV. 1949, 3♂, 2♀, 5 lv apt., 1♂, 3♀ macr.

Head, vertex laterally with light silvery bands. Antenna four-segmented with small intersegments between antennal segments II–IV, fourth segment longest, fusiform. Antennal ratio I : II : III : IV = 3 : 2 : 3 : 4. Pronotum short, with an uninterrupted transverse orange-yellow band anteriorly. Mesonotum bilobed, metanotum covered by mesonotum except at sides. Fore and middle leg with femur longer than tibia, hindleg with tibia longer than femur. In apterous and some macropterous males the hind tibia is curved. Wings if present just exceeding the apex of abdomen. Male, parameres Fig. 171–172, chitinous parts in aedeagus Fig. 173.

***Microvelia longipes* Uhler, 1894**

Microvelia longipes UHLER, 1894, p. 219–220 (Grenada).

Microvelia longipes; DRAKE & HUSSEY 1955, p. 114.

Microvelia longipes; COBBEN 1960, p. 23–26, fig. 12–13 (St. Martin, St. Eustatius, Bonaire, Curaçao, Aruba).

COLOMBIA; ECUADOR; PERÚ; PARAGUAY; ARGENTINA; BRASIL; GUYANA; VENEZUELA; HISPANIOLA, República Dominicana; ST. MARTIN; ST. EUSTATIUS; BARBADOS!; GRENADA; TOBAGO; TRINIDAD; BLANQUILLA!; BONAIRE; CURAÇAO; ARUBA.

St. MARTIN: Old Battery Cistern, *Sta. 529b*, 3.VI.1955, 33♂, 87♀, 45 lv apt., 19♂, 5♀ macr.; Trough of Doctor's Well, *538Aa*, 16.X.1963, 1♂ apt.

- ST. EUSTATIUS: Manahoga Well, 506, 7.VII.1949, 2♀ apt., 4♀ macr.
 BARBADOS: Joe's River at Frizers, W. of Bathseba, 784, 16.II.1964, 1♀ macr.
 BLANQUILLA: Pozo de la Playa del Jaque, 36, 22.VIII.1936, 19♂, 19♀, 52 lv apt.,
 1♂, 2♀ macr.
 BONAIRE: Dos Pos, 45, 27.III.1937, 1♂, 1♀ apt.

This species is recognized at once by its long hind legs, the femur at least reaching the apex of abdomen. Male, chitinous parts in aedeagus Fig. 174.

Rhagovelia angustipes Uhler, 1894

- Rhagovelia angustipes* UHLER, 1894, p. 215-216 (Grenada).
Rhagovelia angustipes; BACON 1956, p. 713-714, pl. 3 fig. 1.

MÉXICO; PANAMÁ; ECUADOR; VENEZUELA; MARTINIQUE!; ST. VINCENT; GRENADA; TRINIDAD!

- MARTINIQUE: Rivière Monsieur, *Sta.* 768, 9.II.1964, 12♂, 16♀, 1 lv apt., 2♀ macr.
 Ruisseau de la Pagerie, 770, 10.II.1964, 2♀ apt.
 TRINIDAD: Maracas Valley, 24.IX.1956, 14♀ apt. (R. H. Cobben coll., W.).

Male, parameres Fig. 176-177, chitinous parts in aedeagus Fig. 175.

Dr. J. T. POLHEMUS (Englewood, Colorado) very kindly compared some specimens from Martinique with material in his collection. He remarks (in litt.) that the series of *R. angustipes* studied by BACON 1956 was not typical as the specimens have more (8-10) small spines on the posterior femur than the four or five which seem to be usual in Antillean populations of this species.

More extensive notes on *Rhagovelia* species of the Antilles will be given in a subsequent paper.

Rhagovelia elegans Uhler, 1894

- Rhagovelia elegans* UHLER, 1894, p. 216 (Grenada).
Rhagovelia elegans; BACON 1956, p. 770-771, pl. 4 fig. 7 (Grenada, St. Vincent, Dominica).

DOMINICA; MARTINIQUE!; ST. VINCENT; GRENADA; TRINIDAD.

- MARTINIQUE: Ruisseau de la Pagerie, Trois lets, *ISta.* 770, 10.II.1964, 1♂ apt.

GRENADA: Grand Étang River at bridge, 500 m, 663, 24.I.1955, 6♂, 3♀ apt., 1♀ macr.; Corinth River, 660, 25.I. 1955, 1♂, 4♀ apt., 1♀ macr.
 TRINIDAD: Maracas Valley, 24.IX.1956, 14♀ apt. (lgt. R. H. Cobben, W).

REFERENCES

- AMYOT, E. & SERVILLE, A., 1843. *Histoire naturelle des Insectes. Hémiptères*: 409–454.
- BACON, J. A., 1956. A taxonomic study of the genus *Rhagovelia* (Veliidae) of the Western Hemisphere. *Univ. Kansas Sci. Bull.* 38: 695–913.
- BARBER, H. G., 1939. Insects of Puerto Rico and the Virgin Islands, Heteroptera (exclusive of Miridae and Corixidae). *Sci. Surv. Puerto Rico* 14: 261–441.
- BEATTY, H. A., The insects of St. Croix, V.I. *J. Agric. Univ. Puerto Rico* 28: 114–172.
- COBBEN, R. H., 1960. The Heteroptera of the Netherlands Antilles – I. Gerridae, Veliidae, Mesoveliidae (Water Striders). *Stud. Fauna Curaçao* 11: 1–34.
- DRAKE, C. J. & COBBEN, R. H., 1960. The Heteroptera of the Netherlands Antilles – II. Hebridae. *Stud. Fauna Curaçao* 11: 35–43.
- DRAKE, C. J. & HARRIS, H. M., 1930. Notes on some South American Gerridae. *Ann. Carneg. Mus.* 19: 235–239.
- DRAKE, C. J. & HARRIS, H. M., 1934. The Gerrinae of the Western Hemisphere (Hemiptera). *Ann. Carneg. Mus.* 23: 179–240, pl. 21–26.
- DRAKE, C. J. & HARRIS, H. M., 1935. Notes on some American Gerridae (Hemiptera). *Arkiv Zool.* 28B: 4 pp.
- DRAKE, C. J. & HARRIS, H. M., 1937. Notes on some American Halobatinae (Gerridae, Hemiptera). *Rev. Entom. (Rio de Janeiro)* 7: 357–362.
- DRAKE, C. J. & HARRIS, H. M., 1942. Notas sobre Rheumatobates, com descrição de uma nova espécie (Hemiptera, Gerridae). *Rev. Brasil. Biol.* 2: 399–402.
- DRAKE, C. J. & HUSSEY, R. F., 1955. Concerning the genus *Microvelia* Westwood, with descriptions of two new species and a checklist of the American forms. (Hemiptera, Veliidae). *Florida Entom.* 38: 94–115.
- ESAKI, T., 1926. The water-striders of the subfamily Halobatinae in the Hungarian National Museum. *Ann. Hist. Nat. Mus. Hung.* 23: 117–164.
- GUÉRIN-MÉNEVILLE, F. E., 1857. Animaux articulés à pieds articulés de l'île de Cuba. In: R. DE LA SAGRA: *Historia física, política y natural de la Isla de Cuba* 7.
- HUNGERFORD, H. B., 1936. Aquatic and semiaquatic Hemiptera collected in Yucatan and Campeche. *Ann. Carneg. Inst.* 457: 145–150.
- HUNGERFORD, H. B., 1954. The genus *Rheumatobates* Bergroth (Hemiptera – Gerridae). *Univ. Kansas Sci. Bull.* 36: 529–588.
- HUSSEY, R. F., 1955. Some records of Hemiptera new to Florida. *Quart. J. Fla. Acad. Sci.* 18: 120–122.
- HYNES, H. B. N., 1948. Notes on aquatic Hemiptera-Heteroptera of Trinidad and Tobago B.W.I., with a description of a new species of *Martarega*. *Trans. R. Entom. Soc. London* 99: 341–360.
- JACZEWSKI, T., 1930. Notes on the American species of the genus *Mesovelia* Muls. (Heteroptera, Mesoveliidae). *Ann. Mus. Zool. Polon.* 9: 1–12, pl. 1–3.
- KIRBY, W. F., 1890. *J. Linn. Soc. London, Zool.* 20 (n.v.), p. 548, description of *Rhagovelia incerta*.
- KUITERT, L. C., 1942. Gerrinae in University of Kansas Collections. *Univ. Kansas Sci. Bull.* 28: 113–143.

- LETHIERRY, L., & SEVERIN, G., 1896. Catalogue général des Hémiptères. III, 275 pp., Berlin.
- NEERING, T., 1954. Morphological variations in *Mesovelia mulsanti* (Hemiptera, Mesoveliidae). *Univ. Kansas Sci. Bull.* 36: 125-148.
- NIESER, N. Hydrometridae of Suriname and the Amazon Region. *Stud. Fauna Suriname* 12 (in press).
- POISSON, R. A., 1965. Catalogus des Insectes Hétéroptères Gerridae Leach, 1807, africano-malgaches. *Bull. I.F.A.N.* 27, ser. A: 1466-1503.
- RAMOS, J. A., 1946. The insects of Mona Island (West Indies). *J. Agric. Univ. Puerto Rico* 30: 1-74.
- ROBACK, S. S., 1966. The Catherwood Foundation Peruvian-Amazon Expedition VIII - Aquatic Hemiptera-Heteroptera. *Monogr. Acad. Nat. Sci. Philadelphia* 14: 211-215.
- SHAW, J. G., 1933. A study of the genus *Brachymetra* (Hemiptera-Gerridae). *Univ. Kansas Sci. Bull.* 21: 221-233.
- STAL, C., 1859. Hemiptera. in: *Fregattens Eugénies Resa, 1851-1853. Zoologie* 4: 219-298.
- UHLER, P. R., 1884. *Standard Natural History II*; Order VI - Hemiptera; Suborder III - Heteroptera: 249-296.
- UHLER, R. R., 1894. On the Hemiptera-Heteroptera of the Island of Grenada, West Indies. *Proc. Zool. Soc. London* 1894: 167-224.
- WESTWOOD, P. O., 1834. Mémoire sur les genres... *Velia*, *Microvelia* et *Hebrus*... *Ann. Soc. Ent. France* 3: 637-653, pl. 6.
- WHITE, F. B., 1879. List of the Hemiptera collected in the Amazone by Prof. J. W. Trail, M.A., M.D., in 1873-1875, with descriptions of the new species. *Trans. Entom. Soc. London* 4: 267-276.