

# Review of the *Enochrus* THOMSON of the West Indies (Coleoptera: Hydrophilidae)

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## Abstract

The genus *Enochrus* THOMSON is reviewed for the West Indies. Nine species in two subgenera are recorded from the region: *Enochrus* (*Methydrus*) *bartletti* and *E. (M.) punctipalpus* are described as new and illustrated; *E. (M.) sayi* is newly recorded from the region, and additional distributional information is provided for *E. (M.) pseudochraceus*, *E. (M.) pygmaeus*, *E. (M.) ochraceus*, *E. (Lumetus) hamiltoni*, and *E. (L.) reflexipennis*. Previous records of a tenth species, *E. (M.) debilis*, may refer to *E. (M.) bartletti* sp.n. A key to the *Enochrus* of the West Indies is presented.

**Key words:** Coleoptera, Hydrophilidae, *Enochrus*, taxonomy, new species, West Indies, Caribbean.

## Introduction

*Enochrus* THOMSON is the third largest genus in the Hydrophilinae with 202 species placed in six subgenera worldwide. Whereas the genus has been reviewed in some detail in both North America (GUNDERSEN 1977, 1978) and South America (FERNÁNDEZ 1988, 1994a, 1995, 1997) little has been published on the fauna of Central America and the West Indies. Several species have been recorded in works that covered the aquatic beetle fauna of certain island groups (e.g. Cuba, SPANGLER 1981; Bahama Islands, YOUNG 1953) and GUNDERSEN (1978) included a partial treatment of the region, although some species were omitted (e.g. *E. aequalis*).

Most species of *Enochrus* in the West Indies are largely similar in size and color. The most reliable characters to separate species are the form of the pro- and metasternum, the labroclypeal margin, the dorsal punctation of the elytra, and the shape of the aedeagus.

A review of 919 specimens from more than fifteen islands showed nine species present, two of which are described as new: *E. bartletti* and *E. punctipalpus*. *Enochrus sayi*, found on Grand Bahama Island, is newly recorded from the region. A tenth species, *E. debilis*, has previously been recorded from the region (GUNDERSEN 1977) but no specimens were seen and the mention of this species is likely to represent a misidentification of *E. bartletti*.

## Abbreviations

AEZS	Collection of the Author, Ithaca, NY, USA
CUIC	Cornell University Insect Collection, Ithaca, NY, USA
NMW	Naturhistorisches Museum Wien, Austria
UDCC	University of Delaware Insect Collection, Newark, DE, USA
USNM	United States National Museum, Washington, DC, USA

## Material and Methods

All specimens were examined using a binocular Wild M-5 microscope to 100x magnification. Measurements were taken with the aid of an ocular micrometer. Drawings were made with the help of an ocular grid and camera lucida.

## Subgenus *Methydrus* REY

*Methydrus* REY 1885: 253.

*Methydrus* is the most speciose and widespread subgenus of *Enochrus* with 127 species in all major biogeographic regions. It is represented by seven species in the Caribbean.

### *Enochrus (M.) aequalis* (SHARP)

*Philydrus aequalis* SHARP 1882: 68.

*Enochrus (Lumetus) aequalis* (SHARP) - ZAITZEV 1908: 385.

*Enochrus (Methydrus) aequalis* (SHARP) - d'ORCHYMONT 1939: 374.

MATERIAL EXAMINED (7): DOMINICAN REPUBLIC: La Vega Prov., Jarabacoa, 13.XI.1984, P. & P. Spangler and R. Faitoute (1 AEZS, 2 USNM); La Vega Prov., La Vega, 20.VII.1969, P. & P. Spangler (2 USNM); Copey, 21.VII.1969, P. & P. Spangler (1 USNM); Rio Quisibani, E. El Seibo, 12.V.1995, O. S. Flint (1 USNM).

DIAGNOSIS: *E. aequalis* can be distinguished from other Caribbean species by the dorsal strut of the aedeagus not extending above the median lobe (also observed in *E. punctipalpus*), the prosternum without carination, the long, thin mesosternal crest, and distinct elytral punctation.

DISTRIBUTION: Cuba, Dominican Republic, Guadeloupe?, Guatemala, Mexico, Nicaragua (see FERNÁNDEZ 1994b and SPANGLER 1981).

REMARKS: Although described as a Central American species, BLACKWELDER (1944) recorded *E. aequalis* in checklist form from Guadeloupe. SPANGLER (1981) subsequently referred several specimens from Cuba to this species. FERNÁNDEZ (1994b) designated a lectotype for (the syntype series was found to composite with *E. cristatus*) and redescribed *E. aequalis*. Specimens examined from the Dominican Republic agree well with the illustrations and description of FERNÁNDEZ (1994b).

### *Enochrus (M.) bartletti* sp.n.

(Figs. 2, 4, 6)

TYPE LOCALITY: US Virgin Islands: St. John, Cruz Bay.

TYPE MATERIAL: **Holotype** ♂(USNM): "Virgin Islands/ St. John, Cruz/ Bay I-23-63/ Spangler & Zani/", "♂", "Holotype/ *Enochrus (M.) bartletti*/ A.E.Z.Short". **Paratypes** (203). BARBADOS: 2.III.1936, Chaplin & Blackwelder (3 USNM). DOMINICA: 2 mi. NW of Pont Casse, 26.X.1964, P. J. Spangler (7 AEZS, 4 CUIC, 4 NMW, 40 USNM); Café, 17.X.1964, P. J. Spangler (1 AEZS, 5 USNM). DOMINICAN REPUBLIC: La Vega Prov., nr. Jarabacoa, 4.XI.2000, creek margin, A. E. Z. Short (10 AEZS, 1 CUIC, 1 NMW, 8 UDCC); La Vega Prov., La Vega, 20.VII.1969, P. & P. Spangler (2 USNM); Rio Baiguete, 1-2 km S. Jarabacoa, 19-21.V.1995, O. Flint (1 USNM); Salto Guasara, 9.5 km W. Jarabacoa, 9.V.1995, O. S. Flint (1 USNM). HAITI: Dept. de Sud., Marcelline, 5 km NE @ Saut Mathurine, 11.IX.1981, P. Spangler and R. Faitoute (1 USNM); Diguini, 20.V.1945, A. Curtiss (1 USNM). MONTSERRAT: 24.VII.1936, Blackwelder (1 USNM); 4.IV. (no year), H. G. Hubbard (1 USNM). PUERTO RICO: Hwy 31, km 15.4, nr. Paso Seco jct., 8.I.1963, P. Spangler (1 AEZS, 8 USNM); Nr. Fajardo, Hwy 194, 31.XII.1962, P. & P. Spangler (3 USNM); Laguna Cartagena, 20.XII.1962, P. & P. Spangler (1 USNM); Laguna Tortuguera, 11.I.1963, P. J. Spangler (1 USNM); Vieques Isd., 28.III.1900, L. Steineger (3 USNM). ST. LUCIA: "Union Agr. Sta.", 28.VII.1963, O. S. Flint (2 USNM). CUBA: Cayamas, E. A. Schwarz (1 USNM); Rio Ceiba, 1.III.1973, V. Decu (1 USNM); Pinares de Mayari, 2.III.1973, V. Decu (1 USNM); Quemado de Pineda, arroyo, 14.IV.1973, V. Decu (1 USNM); El

Cavo, at Baire, 21.III.1973, V. Decu (1 USNM); Sancti Spiritus Prov., Sierra Escambray, 13.II.1981, P. Spanger & A. Vega (2 USNM). VIRGIN ISLANDS: Same data as Holotype (7 AEZS, 4 CUIC, 2 NMW, 31 USNM). St. Thomas, 21.I.1963, P. J. Spangler (3 USNM); St. Thomas, Charlotte Amalie, 2.VI.1917, H. Morrison (5 USNM); same data but 4.VI.1917 (3 USNM); same but no date (1 USNM); St. Croix: 1.XII.1936, Blackwelder (1 AEZS, 13 USNM); same but 29.XI.1936 (1 AEZS, 2 USNM); same but 17.XI.1936 (1 USNM); same but XI.1936 (1 USNM); same but 23.XI.1936 (4 USNM); no date, H. A. Beatty (3 USNM); Christiansted, 19.XI.1941, H. A. Beatty (2 USNM).

**DIAGNOSIS:** Length 3.5 - 4.0 mm. Distinguished by the prosternum with small anteromedial carination in apical quarter to third, the mesosternum raised into a narrow triangular crest (Fig. 6), the fine dorsal punctation of the elytra and pronotum, and the distinctive shape of the aedeagus (Fig. 2).

**DESCRIPTION:** Head. Labrum yellow to light brown. Lateral sides of clypeus yellow with central third brown, with small emargination anteromedially, width approximately two thirds labral width, exposing small gap between clypeus and labrum; punctation distinct, width between punctures about 1.0 - 1.5x width of one puncture; slightly more impressed than that of pronotum and elytra. Top of head dark brown. Maxillary palpi evenly yellow with last segment shorter than penultimate; segments not modified (Fig. 4). Antennae with nine segments.

**Thorax.** Prosternum and epiplura brown; prosternum not carinate, at most with small apicomedial tooth on projecting anteriorly; set with sparse setae. Metasternum with elongate, narrow crest to form broad triangle (Fig. 6); sparse setae on lateral portions of the crest. Pronotum yellow to brown, distinctly darkened to brown or dark brown on disc. Elytra yellow to light brown with dark humeral spots; sutural stria present in basal two thirds. Punctation on pronotum and elytra moderately impressed and evenly distributed; punctures spaced between 1-2x width of one puncture. Elytra with four rows of irregularly spaced systematic punctures that blend easily with the surrounding punctation. Femora densely pubescent on basal four fifths. Legs evenly light brown with pubescent area of femora slightly darker. All tarsi with five segments; protarsal claws of male with base slightly enlarged.

**Abdomen.** All ventrites brown and evenly pubescent. Fifth visible ventrite with small emargination subequal in width and depth, lined with coarse yellow setae. Aedeagus with parameres broad basally and narrowed abruptly anteriorly, with tips almost appearing outwardly bent. Dorsal strut extended slightly above median lobe (Fig. 2).

**DISTRIBUTION:** Barbados, Cuba, Dominican Republic, Haiti, Montserrat, Puerto Rico, St. Lucia, US Virgin Islands.

**REMARKS:** It is likely this fairly common Caribbean species has previously been confused with *E. debilis* (see remarks under that species).

**ETYMOLOGY:** Named in honor of Charles R. Bartlett, a previous advisor of the author, who first encouraged him to work on the Hydrophilidae.

### *Enochrus (M.) debilis* (SHARP)

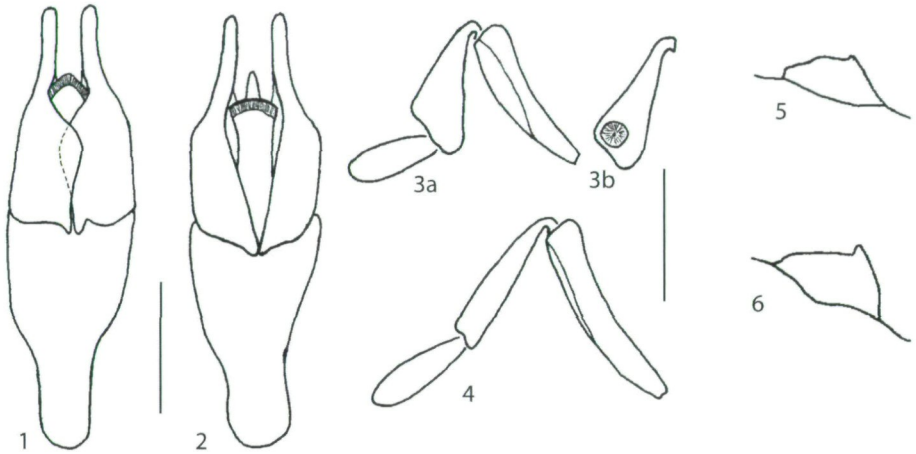
*Philydrus debilis* SHARP 1882: 69.

*Enochrus (Lumetus) debilis* (SHARP) - ZAITZEV 1908: 386.

*Enochrus (Methydrus) debilis* (SHARP) - GUNDERSEN 1978: 31.

**MATERIAL EXAMINED:** No specimens seen from the West Indies. COSTA RICA: Guanacaste Prov., near Carmona, 16.I.2003, stream with pools, A. E. Z. Short (11 AEZS); Alajuela Prov., Los Lagos-Colonia Road, Rio San Lorenzo, 12.I.2003, A. E. Z. Short (5 AEZS).

**DIAGNOSIS:** Distinguished by the parameres of the aedeagus overlapping on basal two thirds ventrally, the prosternum carinate at least on apical third, the mesosternal crest broadly triangular, and the very fine dorsal punctation of the elytra.



Figs. 1 - 2: Aedeagus, ventral view, 1) *Enochrus punctipalpus* sp.n., 2) *E. bartletti*, sp.n.

Figs. 3 - 4: Maxillary palpus, 3) *E. punctipalpus* sp.n., a) Dorsal view, b) penultimate segment, ventral view, 4) *E. bartletti*, sp.n.

Figs. 5 - 6: Mesosternal crest, lateral view, 5) *E. punctipalpus* sp.n., 6) *E. bartletti* sp.n.

Scale bars = 0.25 mm.

**DISTRIBUTION:** Mexico, Costa Rica, and the "West Indies" (GUNDERSEN 1978).

**REMARKS:** Although this species is recorded as occurring in the Caribbean region by GUNDERSEN (1977), I have seen no specimens from the region, and I have not been able to study specimens that were used in the 1977 work. I suspect that many if not all of these records may refer to *E. bartletti*, because of similarities in the sternal structure, size, and color.

### *Enochrus (M.) ochraceus* (MELSHEIMER)

*Philhydrus ochraceus* MELSHEIMER 1844: 101.

*Philhydrus (Helochares) lacustris* LECONTE 1855: 369. – Syn.: FALL 1924: 97.

*Philhydrus simlex* LECONTE 1863: 24. – Syn.: HORN 1873: 129.

*Philhydrus ochraceus* MELSHEIMER. – HORN 1890: 246.

*Enochrus (Lumetus) ochraceus* (MELSHEIMER). – ZAITZEV 1908: 388.

*Enochrus (Methydrus) ochraceus* (MELSHEIMER). – WINTERS 1927: 20.

**MATERIAL EXAMINED** (38): BAHAMA ISLANDS: Andros Island, Fresh Creek, V-VII.1917, W. M. Mann (1 USNM); Cat Island, Bennett's Harbor, 24.III.1953, E. B. Hayden & L. Giovannoli (1 USNM); South Bimini Island, V.1951, Cazier & Gertsch (4 USNM); South Bimini Island, VIII.1951, C. & P. Vaurie (4 USNM). CAYMEN ISLANDS: Grand Caymen Island, 3 km W. Colliers, 21.II.1993, W. E. Steiner, W. J. Swearington (2 USNM). CUBA: La Fe at light, 22.IV.1973, V. Decu (2 USNM); Laguna Base J. A. Mella, 24.III.1973, V. Decu (1 USNM). DOMINICAN REPUBLIC: La Vega Prov., El Rio, 3 km. NE, 12.XI.1984, P. Spangler & R. Faitoute (1 USNM); Copey, 21.VII.1969, P. & P. Spangler (1 USNM). HAITI: Dept. du Sud, Levy 1 km. NE, Etang Lachaux, 10-11.IX.1981, P. Spangler & R. Faitoute (2 USNM). JAMAICA: Mt. Diablo, St. Ann, 13.III.1966, S.S. & W. D. Duckworth (1 USNM); Mt. Hope, 17.VIII.1966, A. T. Howden (1 USNM). TURKS & CAICOS ISLANDS: Providenciales, Malcolm Roads area, 29.I.1998, blacklight, W. E. Steiner & J. M. Swearington (3 AEZS, 13 USNM); Providenciales, Crystal Bay, 31.I.1998, blacklight, W. E. Steiner & J. M. Swearington (3 USNM).

**DIAGNOSIS:** The only species recorded from the Caribbean with a low, rounded mesosternal crest. Also distinguished by the prosternum without carination.

**DISTRIBUTION:** Cayman Islands, Cuba, Bahama Islands, Dominican Republic, Haiti, Jamaica, Turks & Caicos Islands, and the eastern, central, and southern United States, Mexico, and Central America (GUNDERSEN 1978, YOUNG 1953).

**REMARKS:** Specimens from Turks and Caicos Islands are much darker dorsally than continental specimens of this species, and their elytral punctation is distinctly finer. Nevertheless, they agree well in other aspects of this species to which they are here referred.

***Enochrus (M.) pseudochraceus* GUNDERSEN**

*Enochrus (Methyrus) pseudochraceus* Gundersen 1977: 256.

**MATERIAL EXAMINED (382):** CAYMEN ISLANDS: Grant Caymen Island, 1.5 km S. Hutland, 18.II.1993, W. E. Steiner & J. M. Swearington (2 USNM). CUBA: Matias, V. Sierra Maestra, 21.III.1973, L. Botosaneanu (1 USNM); Pinar del Rio, La Caridad, 4-5.XII.1994, O. S. Flint, Jr. (2 USNM); Laguna Base J. A. Mella, 24.III.1973, V. Decu (1 USNM); Arroyo Landivar, Finca Ponzon, 10.III.1973, V. Decu (1 USNM); Quemado de Pineda, arroyo, 14.IV.1973, V. Decu (1 USNM). DOMINICA: Cabrit Swamp, 3.XI.1964, P. J. Spangler (8 AEZS, 3 CUIC, 3 NMW, 99 USNM); Cabrit Swamp, 4.VI.1964, O. S. Flint, Jr. (6 USNM); Cabrit Swamp, 10-13.V.1965, D. R. Davis (24 USNM); Cabrit Swamp, 3.II.1965, light trap, W. W. Wirth (1 USNM); Melville Hall, 9.VI.1964, O. S. Flint, Jr. (1 USNM). DOMINICAN REPUBLIC: Distrito Nacional, 4 km N Guerra, 15.XI.1984, P. & P. Spangler & R. Faitoute (5 USNM); La Vega Prov, La Vega, 20.VII.1969, P. & P. Spangler (2 AEZS, 1 CUIC, 1 NMW, 26 USNM); La Vega Prov., Jarabacoa, 13.XI.1984, P. & P. Spangler & R. Faitoute (1 USNM); Los Hidalgos, 4-5.VI.1969, Flint & Gomez (1 USNM); Rio Quisibani, E. El Seibo, 12.V.1995, O. S. Flint (2 USNM); Copey, 21.VII.1969, P. & P. Spangler (16 USNM). HAITI: Dept. du Sud, 1 km NE Levy, Etang Lachaux, 10-11.IX.1981, P. Spangler & R. Faitoute (4 AEZS, 2 CUIC, 2 NMW, 24 USNM); Dept. du Sud, 0.3 km E Limbe, 13.IX.1981, P. Spangler & R. Faitoute (3 USNM). JAMAICA: Elizabeth Par., Braes River, 24.V.1975, P. J. Spangler (11 USNM); Elizabeth Par., Pepper, 24.V.1975, P. J. Spangler (3 AEZS, 1 CUIC, 1 NMW, 17 USNM); St. Andrew Par., Kingston, 3 mi. W., 22.V.1975, P. J. Spangler (1 USNM); Catherine Par., Ferry, Fresh River, 22.V.1975, P. J. Spangler (2 USNM); Catherine Par., Ferry, Fresh River, 22.VII.1962, O. & R. Flint (3 USNM); Trelawny Par., Windsor Estate, Pond, 29.VII.1962, O. & R. Flint (3 USNM); Good Hope, 8-17.VIII.1966, A. T. Howden (12 USNM). PUERTO RICO: El Crisis, 22.XI.1952 (1 USNM); nr. Pta. Puerto Nuevo, 11.I.1963, P. J. Spangler (74 USNM). US VIRGIN ISLANDS: St. John, Caneel Bay, 22.I.1963, Spangler & Muller (1 AEZS, 9 USNM).

**DIAGNOSIS:** Characterized by the low mesosternal crest with the apex sharply recurved into a small posteriorly pointing tooth and the prosternum without carination. The tips of the aedeagus also are unique among *Enochrus* in North and Central America in being outwardly hooked.

**DISTRIBUTION:** Cuba, Dominica, Dominican Republic, Haiti, Jamaica, Puerto Rico. Widespread from central Mexico through Central America. (GUNDERSEN 1977, Spangler 1981).

**REMARKS:** This common species is often associated with the margins of ponds, marshes and other standing water bodies and is often common when found. It is attracted to lights.

***Enochrus (M.) punctipalpus* sp.n.**  
(Figs. 1, 3, 5)

**TYPE LOCALITY:** Haiti: Dept. du Nord, Ravine Reine Catalone.

**TYPE MATERIAL:** **Holotype** ♂ (USNM): "HAITI: Dept. du Nord/ Camp Coq (.2 km W./ Ravine Reine Catalone", "13 Sept. 1981, Seepage/ under matted plants/ P. Spangler & R. Faitoute" (USNM). **Paratypes (55)**. CUBA: Pico Cuba, Sierra Maestra, stream, 4.III.1982, P. Brown (1 AEZS, 7 USNM); Sancti Spiritus Province, Sierra Escambray, 13.II.1981, P. J. Spangler & A. Vega (1 USNM). DOMINICAN REPUBLIC: La Vega Province, Costanza, 10.XI.1984, P. Spangler & R. Faitoute (1 AEZS, 2 USNM); same but 9.XI.1984 (2 USNM); Distrito Nacional Guerra, 15.Nov.1984, P. Spangler & R. Faitoute (1 USNM); Salto Guasara 9.5 km W Jarabacoa, 9.V.1995, O.S. Flint (1 USNM). HAITI: Same data as type (6 AEZS, 4 CUIC, 2 NMW, 26 USNM); Dept. de Nord, 0.3 km E. Limbe, 13.IX.1981, roadside ditch, P. Spangler & R. Faitoute (1 USNM).

**DIAGNOSIS:** Length 2.7 - 3.4 mm. The enlarged and punctate segment 3 of the maxillary palpi of the male makes this species unmistakable (Fig. 3). Also characterized by the prosternum carinate only on anterior third, the abrupt elevation of the mesosternal crest at the posterior margin, and the distinctive aedeagal shape.

**DESCRIPTION:** Head. Labrum yellow to light brown. Lateral margins of clypeus yellow with central third brown, not emarginate on anterior margin; punctation fine but distinct, slightly more impressed than that of pronotum and elytra, distance between punctures equal to one to two widths of one puncture. Top of head brown to dark brown. Small cluster of systematic punctures on lateral side of head mesad to each eye. Maxillary palpi evenly yellow with last segment shorter than penultimate. Segment 3 of males enlarged, triangular in shape and bearing a circular depression on the ventral side (Fig. 3). Segment 3 of females unmodified. Antennae with nine segments, including a three segmented club.

**Thorax.** Prosternum and epipleura light brown, often slightly paler than metasternum; prosternum with carination on anteromedial third. Metasternum with elongate, narrow crest, anteriorly slightly pointed (Fig. 5); sparse setae on lateral portions of the crest. Pronotum medium brown, slightly darker centrally. Elytra yellow to brown; sutural stria present in basal two thirds. Punctation on pronotum and elytra finely impressed and evenly distributed; in specimens from Cuba, the elytral punctation not observable at 50x magnification in most specimens. Four rows of distinct, irregularly spaced systematic punctures present, often inset with fine setae. Legs evenly brown; hind femora pubescent on at least basal three fourths. Protarsal claws of the male slightly enlarged at base.

**Abdomen.** All ventrites brown and evenly pubescent. Fifth visible ventrite with small emargination, slightly wider than deep, lined with coarse, yellow setae. Aedeagus with basal two thirds of parameres overlapping, apices of parameres narrowed and outwardly turned. Dorsal strut not rising above median lobe (Fig. 1).

**DISTRIBUTION:** Known only from Cuba, Dominican Republic, and Haiti.

**REMARKS:** Based on available label information, this species has been collected in both seeps "under matted plants" and along streams.

**ETYMOLOGY:** Named for the unique palpomere 3 of the males which bears a large punctate-like depression on the ventral surface.

### *Enochrus (M.) pygmaeus* (FABRICIUS)

*Hydrophilus pygmaeus* FABRICIUS 1792: 186.

*Enochrus (Lumetus) pygmaeus* (FABRICIUS). – ZAITZEV 1908: 288.

*Enochrus (Methydrus) pygmaeus* (FABRICIUS). – YOUNG 1954: 176.

**MATERIAL EXAMINED** (214): CAYMEN ISLANDS: Grand Caymen Island, 1.5 km S. Hutland, 18.II.1993, W. E. Steiner & J. M. Swearington (7 USNM); Grand Caymen Island, north side, 22.II.1993, W. E. Steiner & J. M. Swearington (1 USNM); Grand Caymen Island, 3 km W. Colliers, 21.II.1993, W. E. Steiner and J. M. Swearington (4 USNM); Grand Caymen Islands, 4 mi. N. Georgetown, 26.V.1975, P. J. Spangler (2 USNM); same data but 3 mi. N. (3 USNM). CUBA: Pinar del Rio, La Caridad, 2 km NW Soroa, 4-5.XII.1994, O. S. Flint, Jr. (2 USNM); Cienfuegos, Rio Caburni, 5 km WNW, Topes de Collantes, 10.-11.XII.1994, O. S. Flint, Jr. (1 USNM); Arroyo Jarahuca, at Mayari Arriba, 25.III.1973, V. Decu, det. P. J. Spangler (2 USNM); Rio Mogote at Matias, 21.III.1973, V. Decu (2 USNM); Rio Contramaestre at Pozo Caliente, 21.III.1973, V. Decu (1 USNM). DOMINICAN REPUBLIC: La Vega Prov., Jarabacoa, 13.XI.1984, P. & P. Spangler and R. Faitoute (4 AEZS, 2 CUIC, 2 NMW, 36 USNM); La Vega Prov., La Vega, 20.VII.1969, P. & P. Spangler (15 USNM); Copey, 21.VII.1969, P. & P. Spangler (1 USNM); Rio Quisibani, E. El Seibo, 12.V.1995, O. S. Flint (2 USNM); La Toma N of San Cristobal, 9.-10.VI.1969, Flint & Gomez (9 USNM). HAITI: Dept. du Sud, Camp Perrin, 10.IX.1981, ditch, P. J. Spangler & R. Faitoute (1 AEZS, 2 USNM); Dept. du Nord, Camp Coq, 0.2 km W., Ravine Reine Catalone (1 USNM). JAMAICA: St. Andrew Par., Hermitage Dam, 22.-23.VII.1962, O. & R. Flint (2 USNM); St.

Andrew Par., Hardwar Gap, 23.V.1975, "in mountain stream", P. J. Spangler (1 USNM); St. Catherine Par., Fresh River at Ferry, 22.VII.1962, O. & R. Flint (1 USNM). PUERTO RICO: Bayamon, Rio Bayamon, rt. 174, 19.VIII.1961, Flint & Spangler (2 AEZS, 7 USNM); nr. Isabela, Punta Rosario, 14.I.1963, P. J. Spangler (60 USNM). US VIRGIN ISLANDS: St. Croix: Sandy Point, 12.II.1966, brackish pond, P. J. Spangler (6 AEZS, 3 CUIC, 3 NMW, 29 USNM).

**DIAGNOSIS:** Distinguished from other Caribbean species by the sharp, high carina on the prosternum, and the acutely triangular mesosternal crest bearing only fine and spare setae.

**DISTRIBUTION:** Cuba, Bahama Islands, Dominican Republic, Haiti, Jamaica, Puerto Rico, US Virgin Islands (GUNDERSEN 1978, YOUNG 1953).

**REMARKS:** GUNDERSEN (1977) recognized three subspecies of *E. pygmaeus* which were common and broadly distributed in North America and Northern Mexico. Specimens from the Caribbean were attributed to *E. pygmaeus pygmaeus*. Subsequent authors have discussed conflicting distributions of the various subspecies, including specimens from the West Indies (see EPLER 1996). I have come to similar conclusions after reviewing material throughout the southern United States and the West Indies. The subspecific boundaries between these forms, if they indeed exist as separate entities, is not yet satisfactorily demonstrated to allow assignment of subspecific names with confidence. The most striking variation observed within the Caribbean is in relation to the coarseness of the elytral punctuation. Most specimens observed have very faint and lightly impressed punctuation, but specimens from St. Croix have more deeply and coarsely impressed punctuation.

### *Enochrus (M.) sayi* GUNDERSEN

*Enochrus (Methydrus) sayi* GUNDERSEN 1977: 262.

**MATERIAL EXAMINED** (12): BAHAMA ISLANDS: Grand Bahama Island, Freeport, 20.-27.VI.1987, W. E. Steiner and M. J & R. Molineaux (3 AEZS, 9 USNM).

**DIAGNOSIS:** Characterized by the prosternum carinate along its entire length, the densely setiferous, obtusely triangular mesosternal crest, and the elytra and pronotum punctuation with heavily impressed punctuation.

**DISTRIBUTION:** Known only in the Caribbean from Grand Bahama Island. Widely distributed in the Eastern United States (GUNDERSEN 1977).

**REMARKS:** Not previously recorded from the Caribbean.

### Subgenus *Lumetus* ZAITZEV

*Philydrus* SOLIER 1843: 302.

=*Lumetus* ZAITZEV 1908: 385.

=*Pseudenochnrus* LOMNICKI 1911: 266.

The subgenus *Lumetus* is represented by five species in the Nearctic region (SHORT, unpublished data). Two of these are known to occur in the Caribbean. They can be distinguished from all other Caribbean *Enochrus* by the lack of an emargination on the fifth visible ventrite.

### *Enochrus (L.) hamiltoni* (HORN)

*Philydrus fuscus* MOTSCHULSKY 1859: 178. – Syn. dub. GUNDERSEN 1978: 22.

*Philydrus (Philydrus) hamiltoni* HORN 1890: 249.

*Enochrus (Lumetus) hamiltoni* (HORN). – ZAITZEV 1908: 387.

*Enochrus (Lumetus) hamiltoni pacifica* LEECH 1950: 253. – Syn.: GUNDERSEN 1977: 264.

*Enochrus (Lumetus) hamiltoni pyretus* LEECH 1950: 255. – Syn.: GUNDERSEN 1977: 264.

*Enochrus (Lumetus) species near hamiltoni*, YOUNG 1953: 15.

MATERIAL EXAMINED (5): BAHAMAS: South Bimini Island, 20.VI.1950, Cazier & Rindge (2 USNM); South Bimini Island, 3.VII.1951, C. & P. Vaurie, det. F. N. Young (1 USNM). CAYMEN ISLANDS: Grand Caymen Island, north side, 22.II.1993, W. E. Steiner & J. M. Swearington (1 USNM). PUERTO RICO: Punta Vacía, Tulega, 1.IX.1961, beach pool, H. Heatwole (1 USNM).

DIAGNOSIS: In addition to its large size, distinguished from *E. reflexipennis* by the straight anterior margins of the elytra, lack of an emargination of the anterior margin of the clypeus, and the top of the head dark brown to nearly black.

DISTRIBUTION: Bahamas, Cayman Islands, Puerto Rico, and the east and west coasts of the United States; probably more widespread in the Greater Antilles.

REMARKS: Usually taken in or near brackish water.

GUNDERSEN (1977) considered *E. hamiltoni* to be polymorphic and synonymized three species and two subspecies to form the "Hamiltoni complex". Subsequent authors (e.g. HILSENHOFF 1995) broke the complex back into several species. Here, *E. hamiltoni* refers to the coastal form characterized by the straight anterior margin of the clypeus, lacking an emargination. Contrary to HILSENHOFF (1995), the lectotype of *E. hamiltoni* designated by GUNDERSEN (1977) does indeed lack this emargination.

### *Enochrus (L.) reflexipennis* (ZIMMERMANN)

*Philhydrus reflexipennis* ZIMMERMANN 1869: 250.

*Philhydrus angustulus* CASEY 1884: 83. – Syn.: ZAITZEV 1908: 389.

*Philhydrus reflexipennis* ZIMMERMANN. – HORN 1890: 250.

*Enochrus (Lumetus) reflexipennis* (ZIMMERMANN). – ZAITZEV 1908: 389.

MATERIAL EXAMINED (1): CAYMAN ISLANDS: Grand Cayman Island, Georgetown, 26.V.1975, brackish water lagoon, P.J. Spangler (1 USNM).

DIAGNOSIS: Distinguished from all other *Enochrus* except *E. hamiltoni* by the complete fifth visible ventrite. Characterized by the posterior half of the elytra slightly reflexed, although this character is sometimes subtle; head, clypeus and labrum yellow. Anterior margin of clypeus with a broad, deep emargination.

DISTRIBUTION: Bahama Islands, Cayman Islands and the East and Gulf Coasts of the United States (See also GUNDERSEN 1978 and YOUNG 1953).

REMARKS: Usually taken in brackish water.

### Key to the *Enochrus* THOMSON of the West Indies

- 1 Fifth visible ventrite entire, without trace of emargination or coarse yellow bristles ..... (subgenus *Lumetus*) 2
- Fifth visible ventrite with emargination lined with coarse yellow bristles on posteromedial margin ..... (subgenus *Methhydrus*) 3
- 2 Anterior margin of clypeus not emarginate, meeting labrum at straight suture..... *hamiltoni* HORN
- Anterior margin of clypeus emarginated, a small trapezoidal gap present between clypeus and labrum ..... *reflexipennis* ZIMMERMANN
- 3 Prosternum without median carina or only carinate on anterior third..... 5
- Prosternum with distinct median carina along entire length ..... 4



- 4 Mesosternal crest acutely pointed with sparse setae; dorsal punctation of elytra usually fine ..... *pygmaeus* (F.)
- Mesosternal crest obtusely pointed, more rounded posteriorly with dense setae; dorsal punctation coarse and distinct..... *sayi* GUNDERSEN
- 5 Prosternum with median carina in anterior third or at least with small anteromedial tooth ..... 6
- Prosternum without trace of median carina and without anteromedial tooth..... *aequalis* (SHARP)
- 6 Mesosternal crest low, rounded or with small posteriorly directing tooth..... 7
- Mesosternal crest in the shape of a laminar triangular projection..... 8
- 7 Mesosternum low and rounded, without a posteriorly directing tooth; tips of parameres straight..... *ochraceus* (MELSHEIMER)
- Mesosternum with small posteriorly pointing tooth; tips of parameres outwardly curved....  
..... *pseudochraceus* GUNDERSEN
- 8 Anterior margin of clypeus without medial emargination; males with third maxillary palpomere enlarged and with ventral pit..... *punctipalpus* sp.n.
- Anterior margin of clypeus with emargination; males without third palpomere enlarged ..... 9
- 9 Dorsal punctation of elytra fine; base of parameres overlapping ventrally in basal half.....  
..... *debilis* (SHARP)
- Dorsal punctation of elytra moderately impressed, distinct; base of parameres not overlapping ventrally ..... *bartletti* sp.n.

### Species incertae sedis

CHEVROLAT (1863) described *Phylhydrus coriaceus* (= *Enochrus (Lumetus) coriaceus*) from two examples from Cuba. This name has not been used since it was published in 1863 save for three catalogue references (GEMMINGER & HAROLD 1868, ZAITZEV 1908, HANSEN 1999). There is one specimen in the Paris Museum from the Bedel collection with an old label that reads "type de /coriaceus Chev ?". It is otherwise labeled as follows: "573/1292", "grandis/antilles/ [illegible]/ Coll. Chevrolat", "Helobata Bergtrh/Helopeltis Horn/ larvalis". The specimen is in fact *Helobata larvalis* HORN. Because CHEVROLAT described *P. coriaceus* from two specimens specifically from Cuba, this specimen cannot be confirmed as the type. Therefore, *Phylhydrus coriaceus* CHEVROLAT is here listed as *incertae sedis*.

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