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HERMATOBATES, A NEW GENERIC RECORD
FOR THE ATLANTIC OCEAN,
WITH DESCRIPTIONS OF NEW SPECIES
(HEMIPTERA: GERRIDAE)

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The genus *Hermatobates* is certainly the rarest and least known genus of marine Hemiptera. It was founded by Carpenter in 1892 for the reception of a new species, *H. haddoni*, based on a single specimen from Mabuiag Island in the Torres Straits, northern Australia. Since that time, five other species have been described. The descriptions of the six species were based on a total of nine specimens and several of the species are still known only from the type material. Females for the most part are either unknown or unassociated with the males. In 2½ years of entomological work in the South Pacific, I was able to collect only three specimens; so it is not surprising that very few museums have representatives of this remarkable genus.

The genus has a widespread distribution. One species, *haddoni*, the best known of the group, occurs from New Caledonia in the East to Australia, the Philippines, and the Ryukyus in the West. Two species, *weddi* China and *walkeri* China, are known from the Australian region: Monte Bello Island and the Arafura Sea, respectively. *H. marchei* (Coutiere and Martin) is known from the Philippines only,

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djiboutensis Coutiere and Martin occurs in the Red Sea (Gulf of Aden), and *hawaiiensis* China is known from Oahu, Hawaii. The new species described below from Dominica Island, British West Indies, represents the first record of this genus from the Atlantic Ocean. A second new species from Central Polynesia (Tuamoto Archipelago) is also described.

Esaki (1947) has given an interesting account of the habits of *H. haddonii*. It inhabits coral reefs and at low tide skates about on the surface of tidal pools and in the small pools of water contained in dead *Tridacna* mollusk shells, where it apparently feeds on Collembola, marine midges, and perhaps on water striders of the genus *Halovelis*. As the tide comes in, *Hermatobates* conceal themselves in the crevices of the coral, underneath blocks of loose coral, or in dead *Tridacna* shells so that at high tide these water striders may be submerged under 10 feet or more of water.

In addition to the type material described below, I am depositing my collection of *Hermatobates* (15 specimens, mostly females and nymphs) in the U.S. National Museum.

I take great pleasure in naming the following new species for Mr. Bruce Bredin, who sponsored the Smithsonian-Bredin Expeditions to the West Indies in 1956 and 1958.

Hermatobates bredini, new species

FIGURE 1

A small brown species with antennal segments in proportion 12:13:8:11. Anterior trochanter, femur, and tibia without teeth or spurs. Posterior margin of metasternum straight without median prominences, armed only with minute teeth.

Holotype male. Head viewed from above transverse, width across eye level four times greatest length; triangular; antenniferous tubercles not prominent nor visible from above; eyes small, with short erect bristles, ocular width about one-quarter that of vertex between eyes (4:17), this distance twice as great as length of head seen from above (17:7); covered with pale pubescence and longer tufts on apex and sides; frontal suture running close to base of head, sinuate, extending forward laterally, area between it and eyes flattened; clypeus prominent between antenniferous tubercles. Antenna densely covered with fine pubescence, relative lengths of segments 12:13:8:11. Rostrum extending a little beyond the bases of the anterior trochanters, relative lengths of segments 6:2:5:4.

Pronotum very short, little more than half the width of an eye, widening behind eyes, pubescence dense and fine. Fused meso- and metanotum and abdominal segments dull with short pubescence on

disc becoming longer laterally and posteriorly. Suture between meso- and metasternum distinct; posterior margin of metasternum gently rounded with very fine, indistinct black teeth at middle.

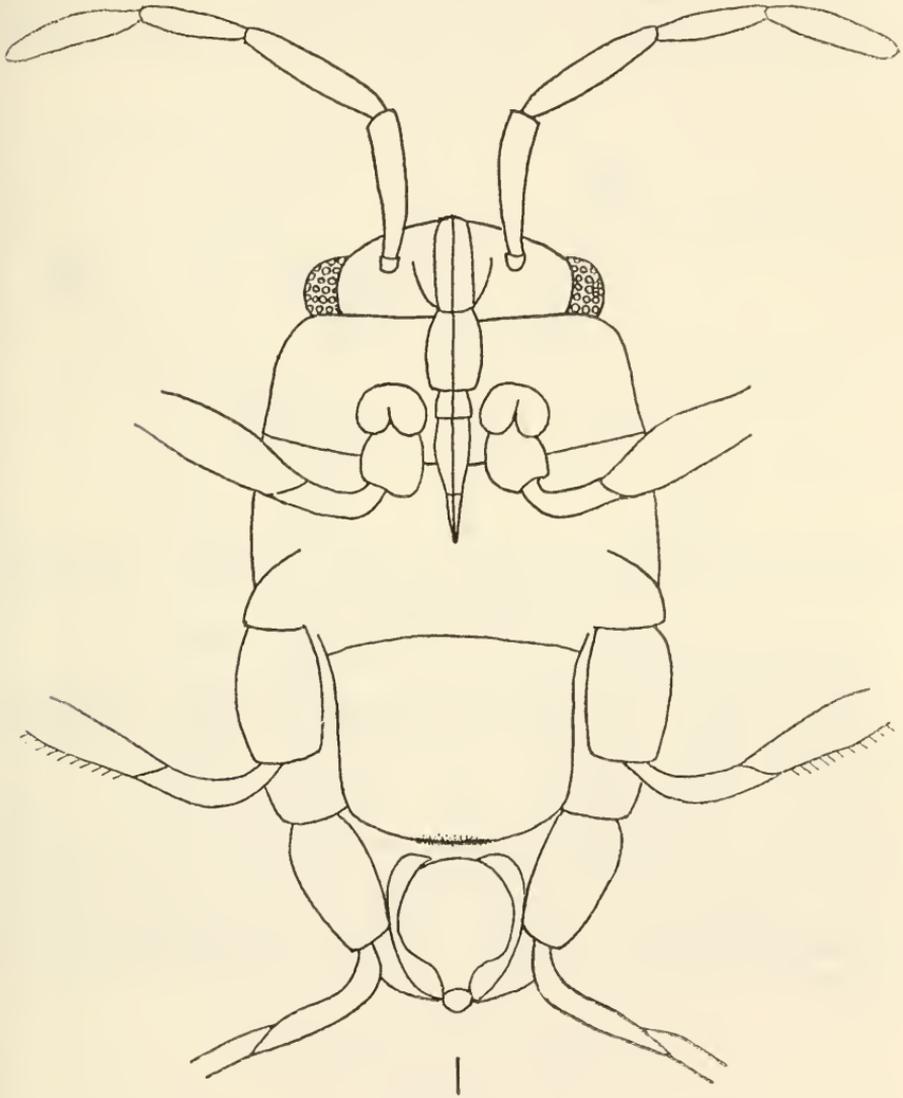
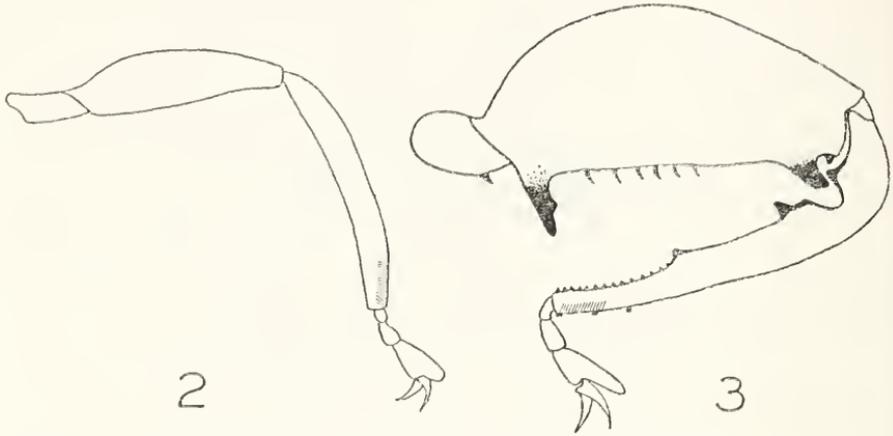


FIGURE 1.—*Hermatobates bredini*, new species: ventral view.

Anterior trochanter unarmed; anterior femur (fig. 2) only moderately incrassate, without teeth or tubercles of any kind, anterior tibia unarmed but with the usual oblique combs of spines at apex. Middle and hindfemur feebly incrassate, middle femur with row of approximately 20 black spines and a few long bristles; middle and hindtrochanter unarmed; hindfemur unarmed. Measurements (27.5

units=1 mm.): anterior femur 21, anterior tibia 25, anterior tarsus 1:2:4; middle femur 32, middle tibia 20, middle tarsus 2:13:10; hindfemur 32, hindtibia 21, hindtarsus 2:11:10.

Styliform processes of 8th abdominal segment prominent, their apices spoon shaped and covered with long hairs; genital capsule hemispherical, prominent.



FIGURES 2, 3.—Anterior femur: 2, *Hermatobates bredini*, new species; 3, *Hermatobates tiarac*, new species.

Total length, holotype male, 2.5 mm.; greatest width 1.2 mm.

Female unknown.

Type locality: Woodbridge Bay, Dominica, British West Indies, collected at light. Holotype (USNM 66875) collected by W. L. Schmitt, Mar. 25, 1956.

Diagnosis: This species resembles *H. hawaiiensis* China in that the forefemur and tibia are unarmed, but it differs in lacking a tooth on the anterior trochanter, in having the prosternum with rounded margin rather than a pair of prominences, and in having distinctive spoon-shaped styliform processes. *H. bredini* differs from all other species of the genus by the unarmed forefemur and tibia.

Hermatobates tiarac, new species

FIGURE 4

A medium-sized, dark-brown species with antennal segments I and II in proportion 19:23 (III and IV missing in unique male). Anterior trochanter with a single spine; femur very strongly swollen, armed with spines and teeth; tibia armed. Posterior margin of metasternum faintly but distinctly bilobed, armed only with minute black teeth.

Holotype male. Head viewed from above transverse, four times wider across eyes than long in middle, triangular; antenniferous

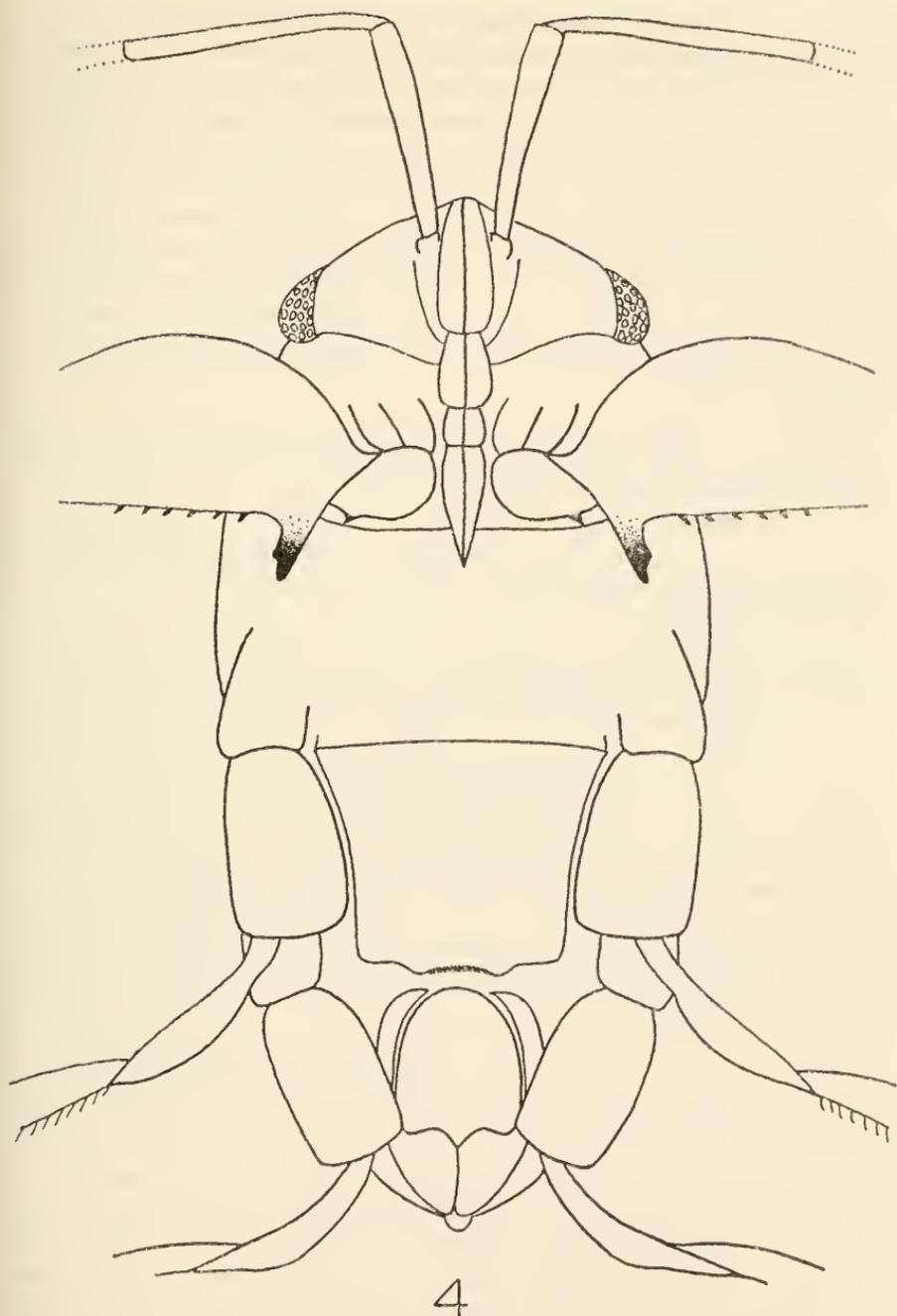


FIGURE 4.—*Hermatobates liarae*, new species: ventral view.

tubercles prominent but not visible from above; eyes small, with short erect bristles, ocular width about one-quarter that of vertex between eyes (6:23), this distance two and one-half times as great as length of head seen from above (23:9), head covered with pale pubescence and longer tufts on apex and sides; frontal suture running very close to base of head, sinuate, extending forward laterally, area between it and eyes gently sloping, not distinctly flattened; clypeus prominent between antenniferous tubercles. Antenna densely covered with erect silvery hairs that are denser and longer on the first segment than on second, relative lengths of segments 19:23:-:-. Rostrum extending a little beyond the anterior trochanters, relative lengths of segments 10:3:9:6.

Pronotum very short, little more than half the width of an eye, widening behind eyes, pubescence dense and fine. Fused meso- and metanotum and abdominal segments covered with very dense white pubescence becoming longer laterally and posteriorly. Suture between meso- and metasternum distinct, posterior margin of metasternum (fig. 4) faintly but distinctly bilobed at middle with fine black teeth between the lobes.

Anterior trochanter armed with a tooth near apex; anterior femur (fig. 3) strongly incrassate, slightly over twice as long as greatest width; its underside covered with long hairs, armed with a strong, very prominent long spine at base, directed posterolaterally, a blunt black tooth near apex followed by a small inwardly directed tooth; a row of six short, curved spines between the basal and apical spines; anterior tibia covered with long hairs that are erect on outer side and directed towards apex of tibia on inner side, base of tibia with a black thickening ending in a tooth, followed by a deep depression for the reception of the large tooth on apex of femur, beyond depression, a second thickening ending in a tooth, and a third tooth near apical third, followed by a row of small black triangular teeth that extend to apex; outer side of tibia with three fairly evenly spaced black pegs on apex, the usual pair of oblique combs of bristles present on apex. Middle femur distinctly thickened on basal third, densely covered with long hairs, some of these as long as the width of the segment at the point where they arise, a row of approximately 20 distinct hooked spines on under side; tibia and tarsus laterally compressed, covered with long, white hairs, tarsus three segmented; hindfemur unarmed, slightly thickened in middle, covered with long hairs; hindtibia and tarsus laterally compressed, covered with long hairs. Measurements (27.5 units=1 mm.): anterior femur 42, anterior tibia 40, anterior tarsus 2:4:11; middle femur 48, middle tibia 28, middle tarsus 3:14:15; hindfemur 48, hindtibia 28, hindtarsus 3:13:15.

Styloform processes of the 8th abdominal segment prominent, rather slender, acute at apices, covered with long hairs, dorsal lobes of 8th segment enlarged and conspicuous, covered with dense pubescence; genital capsule large.

Total length, holotype male, 3.45 mm., greatest width 1.60 mm. Female unknown.

Type locality: 14°56' S., 146°1' W. (Tuamotu Archipelago, French Oceania) collected at light by Martin W. Johnson, Jan. 21, 1953. Holotype (USNM 66876).

Diagnosis: This species superficially resembles *djiboutensis* C. and M. but differs from all known species of *Hermatobates* by the structure of the anterior femur and tibia. No other known species has such a large spine on the base of the femur or the socket at the base of the tibia for the reception of the apical spine of the femur. In addition, the head is four or more times as wide across eyes as length of head along midline, and the sinuate margin of the metasternum bears very small black spines or minute tubercles.

China and Usinger (1950) recorded *H. haddoni* from the Marquesas, on the basis of a single immature specimen collected by Miss Evelyn Cheesman at Tahuata. It seems unlikely that this record refers to *H. haddoni* since there are now two distinct species known in Central Polynesia, and there is no other record of *H. haddoni* from east of New Caledonia.

Literature Cited

CARPENTER, G. H.

1892. Reports on the zoological collections made in the Torres Straits by Professor A. C. Haddon, 1888-1891: Rhynchota from Murray Island and Mabuiag. Sci. Proc. R. Dublin Soc., new series, vol. 7, p. 144.

CHINA, W. E., and USINGER, R. L.

1950. *Hermatobates haddoni* Carpenter from the Marquesas Islands (Hemiptera: Gerridae). Proc. Hawaiian Ent. Soc., vol. 14, p. 53.

ESAKI, T.

1947. Notes on *Hermatobates haddoni* Carpenter (Hemiptera: Gerridae). Mushi, vol. 18, no. 7, pp. 49-51.

