

New Species and Additional Records of Heteroptera from the Marshall Islands

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In a previous report (Proc. Haw. Ent. Soc., 14:315-321, 1951) twenty species of Heteroptera were recorded from the Marshall Islands. Now, after only a year, so much additional material has come to hand that a supplementary report is needed. Most of the additional records and specimens were received from Dr. R. I. Sailer, who painstakingly extracted them from the voluminous collections in his charge at the U. S. National Museum. The National Museum material was collected by H. K. Townes, R. G. Oakley and A. C. Cole. Other supplementary records are based upon the collections of Dr. Ira La Rivers on Arno and Majuro atolls in 1950, made in connection with the Coral Atoll Project of the National Research Council through its Pacific Science Board with funds provided by the Office of Naval Research.

In the present paper two families of Heteroptera, the Coreidae and Cimicidae, are recorded from the Marshall Islands for the first time; three species are described as new (one of these was recorded in error as *Campylomma tahitica* Knight in the previous list); the family Aradidae is added on the basis of a published record which should be checked, preferably by comparison with China's type specimen in the British Museum (Natural History); and new records are given for eleven species which had been recorded previously from one or more of the Marshall Islands. The total count of Heteroptera is raised from 20 to 24 species. Types of the new species have been deposited in the U. S. National Museum.

The discovery of three apparently endemic species of Heteroptera in the Marshalls is of unusual interest. Coral atolls are generally characterized by lack of endemics. Nevertheless, close study in various parts of Micronesia indicates that certain groups of terrestrial animals show a tendency toward speciation. The Micronesian pigeon is a case in point among the birds and the mosquito, *Aedes marshalleensis* Stone and Bohart, is a local endemic of the "scutellaris" group, a group which is widely distributed on islands of the central Pacific. In the Heteroptera *Campylomma* and *Leptocoris*, in particular, show evidences of plasticity, with distinctive forms on every archipelago which has been collected intensively.

The occurrence of the oriental bed bug in the Marshalls is also noteworthy. Known also from the New Hebrides, Samoa and Guam, this species might be expected throughout the Marshalls. Surprisingly, this was not the case. An infestation was found in the dormitory of the Marshallese boys' school on Majuro but a diligent search in native dwellings on Arno failed to turn up any bed bugs at all.

Supplemental List of Heteroptera of the Marshall Islands

(Numbering as in previous list)

Family Pentatomidae

2. *Oechalia consocialis* (Boisduval)

Kwajalein, Aug. 15, '46 (Townes); Aug. 17, '46 (Oakley); Majuro, airfield, Aug. 27, '46 (Townes); Bikini, Aug. 12, '46 (J. P. E. Morrison) and July-Aug. '47 (Cole).

Family Coreidae

2a. *Leptocoris lariversi* new species

A relatively small species with red areas more or less infuscate, the fourth antennal segment more than one-third longer than second, the rostrum reaching only to base of second visible abdominal segment, and the pronotal disk finely, evenly punctate over most of its surface, including the inflated area in front of callosities.

Male. Head broader, including eyes, than long, 53::40, the surface impunctate, depressed along inner margins of eyes and obliquely behind bases of antennae, elsewhere inflated, the post-ocular lobes actually bulbous. Ocelli twice as far apart as distance from an ocellus to eye. Rostrum reaching to base of second visible abdominal segment, the proportion of segments one to four as 35:35:30:30. Antennae about two and one-half times as long as head and pronotum together, the proportion of segments one to four as 17:60:60:83.

Pronotum longer than head, 50::40, broader than long, 70::50, the lateral and posterior margins narrowly depressed, callosities depressed and impunctate, disk convex, very finely evenly punctate, the punctures not arranged so as to form rugosities. A narrow median carina extending from callosities backward to middle of disk. Anterior lobe finely punctured, moderately inflated and laterally lobed. Entire surface clothed with fine pubescence.

Clavus and corium finely punctured and pubescent. Membrane black, opaque.

Thoracic pleura densely clothed with an appressed, gray pubescence. Abdominal venter with fine appressed pubescence which is reddish laterally and posteriorly and gray medially and with numerous long, erect hairs arising from glabrous spots amidst the gray pubescence.

Male genitalia similar to *carnivorus* Usinger (Bishop Museum Bull. 189:26, Fig. 1b) except that the posterior arms are divergent apically. (see fig. 1c)

Color reddish with black appendages, broad black pleural areas adjacent to acetabula, black at middle of venter, black membrane and generally lightly infuscated dorsal surface.

Size: length 13 mm., width (pronotum) 3½ mm.

Holotype, male, Imrodj Island, Jaluit atoll, Aug. 24, 1946, H. K. Townes collector. One male paratype same data. Numerous paratypes, Ine island, Arno atoll, July 30, 1950, I. La Rivers collector. Also nymphs only of what is doubtless this species, Lönar island, Arno atoll, July 9, 1950, and Arno island, July 19, 1950, Earl Stone collector.

There is considerable variation in these specimens, the color being much brighter red in some with the appendages fulvous or even paler and the under surface not or scarcely infuscated. The rostrum varies a little in length, reaching middle of second visible abdominal segment in some specimens. The last antennal segment is longer as compared with the third segment, 87::60, in the Arno specimens.

Lariversi is closely related to *carnivorus* from Guam but in *carnivorus* the fourth antennal is less than one-third longer than third, 77::60, the rostrum reaches from middle of second to middle of third visible abdominal segment, the genital arms are slightly convergent, and the pronotal disk is finely but rugosely punctate. It is this last character and the more strongly inflated, superficially punctured anterior pronotal lobes that separate the two species most readily.

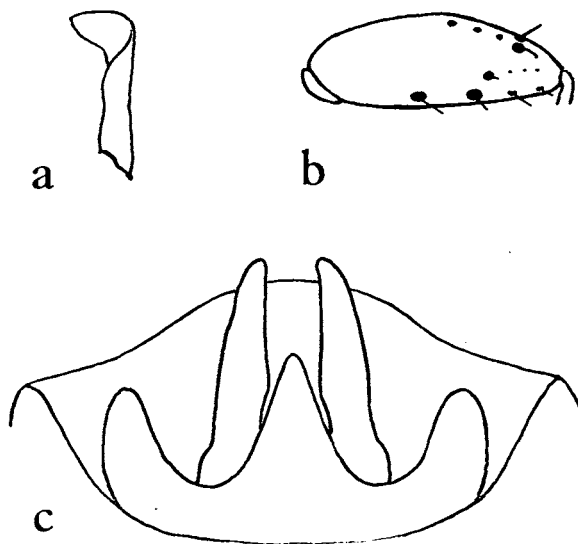


Figure 1. Outline drawings of: a, left genital clasper of *Riptortus saileri* Usinger, n. sp., dorsal view; b, hind femur of *Campylomma marshallensis* Usinger, n. sp., ventral view; c, genital segment of *Leptocoris lariversi* Usinger, n. sp., ventral view with pubescence omitted.

2b. *Riptortus saileri* new species

A relatively small species with upper surface and appendages brown, the sides of lateral fasciae nearly straight and continuous. Fourth antennal segment relatively short, only one-fifth longer than first segment and distinctly shorter than second and third together.

Male. Head slightly longer than wide including eyes, 46::43, the upper surface rugose and clothed with short, appressed hairs, not punctate. Ocelli closer to each other than to eyes, the distance between lenses distinctly less than distance from a lens to inner margin of eye, 13::19. Rostrum reaching hind coxae, the proportion of segments one to four as 30:34:17:33. Antennae about two-thirds as long as body, the proportion of segments one to four as 50:35:38:60. (The last segment broadly curved, measured in a straight line between base and apex.)

Pronotum about as long as wide, excluding humeral spines, 41::40, the spines slender, acute, directed postero-laterally, one-tenth as long as width of pronotum. Disk coarsely punctured behind callosities, becoming finer posteriorly, and clothed with a fine, appressed pubescence.

Apical margin of seventh abdominal tergite rather evenly arcuate. Genital claspers stout, pubescent, bent inward towards each other and broadly rounded at apices. (Fig. 1a.)

Color brown with black at apices of second and third antennal segments, humeral spines and broad stripe along middorsal surface of abdomen except at extreme base. Yellow fasciae along side of head and thoracic pleura, the head fascia slightly narrowed behind eyes, the propleural fascia a little narrower than posterior fasciae, its upper margin straight but a little higher than the posterior fasciae. Mesopleural and meta-pleural fasciae slightly interrupted but with their upper margins essentially in a straight line. Abdomen broadly yellow at sides including connexivum and part of the dorsal terga above and including lateral areas, sublateral areas and middle of venter, the median yellow stripe narrowing posteriorly to base of fifth segment and reappearing on sixth segment. Spiracles and trichobothria brown.

Size: length 13 mm., width (pronotum and abdomen) $2\frac{1}{2}$ mm.

Holotype, male, airfield, Kwajalein island, Kwajalein atoll, August 17, 1946, R. G. Oakley collector.

This species is quite distinct from all other species, described and undescribed, known to me from the Pacific area, the antennal proportions being entirely unique.

Riptortus insularis China from Samoa and Fiji differs further in that the male genital claspers taper to acute points at their apices. *Saileri* is closest to an undescribed species from Koror, Palau Islands, the genitalia being similar, but in the latter species the fourth antennal is of the usual type in *Riptortus*, being longer than the second and third segments together.

Family Lygaeidae

3. *Nysius pulchellus* Stål

Kwajalein, Aug. 16-17, '46 (Townes and Oakley).

4. *Nysius picipes* Usinger

Bikini, July, August '47 (Cole); Likiep atoll, Aug. 30, '46 (Townes); Bigatyelang island, Ailinglapalap, Aug. 25, '46 (Townes).

5. *Ninus insignis* Stål

Majuro, Aug. 28, '46 (Townes); Medyado island, Jaluit atoll, Aug. 24, '46 (Townes).

6. *Pachybrachius pacificus* (Stål)

Medyado island, Jaluit atoll, Aug. 24, '46 (Townes); Imrodj island, Jaluit atoll, Aug. 23, '46 (Townes).

7. *Pachybrachius nigriceps* (Dallas)

Sydney Pier, Jaluit atoll, Aug. 23, '46 (Oakley).

Family Aradidae

7a. *Chiastoplonia pygmaea* China

Chiastoplonia pygmaea China, Insects of Samoa, Pt. II. fasc. 3, pp. 104-105, fig., 1930.

Imej island, Jaluit atoll, Nov. 27, '37 (T. Esaki) (See Esaki and Matsuda, Hemiptera Micronesica, III. Mushi, 22:80, 1951).

Family Nabidae

9. *Nabis capsiformis* Germar

Bikini, July-Aug. '47 (Cole); Medyado island, Jaluit atoll, Aug. 24, '46 (Townes); Imrodj island, Jaluit atoll, Aug. 23-24, '46 (Townes); Kwajalein airfield, July 17, '46 (Townes); Begatyelang island, Ailinglapal atoll, Aug. 25, '46 (Townes).

Family Cimicidae

9a. *Cimex hemipterus* (Fabricius)

Acanthia hemiptera Fabricius, Syst. Rhyng., 113, 1803.
Uluga, Majuro, Aug. 21, '50 (La Rivers).

Family Miridae

12. *Trigonotylus brevipennis* Jakowlev

Kwajalein island, Aug. 17, '46 (Oakley); Likiep island, Aug. 30, '46 (Townes); Majuro atoll, Aug. 28, '46 (Townes); Medyado island, Jaluit atoll, Aug. 24, '46 (Townes).

14. *Orthotylellus brunnescens* Usinger

Medyado island, Jaluit atoll, Aug. 24, '46 (Townes).

15. *Halticus tibialis* Reuter

Medyado island and Sydney Pier, Jaluit atoll, Aug. 23 and 24, '46 (Townes).

16. *Campylomma marshallensis* new species

A relatively small, oval species of uniformly pale color except for the brown eyes, fuscous annuli at apex of first and base of second antennal segments, and distinctive arrangement of spots on the legs. The rostrum reaches the middle of the hind trochanters.

Male. Body surface shining, clothed with subappressed, concolorous hairs above. Head nearly twice as broad as long, 40::24, interocular space half again as wide as an eye, 18::11. Rostrum reaching middle of posterior trochanters, the proportion of segments one to four as 15:15:13:15. Antennae less than half again as long as greatest width of pronotum, 73::52; proportion of segments 10:30:19:14; first two segments stout, last two slender; second segment three-fourths as long as width of head, 30::40.

Pronotum slightly more than twice as wide as long, 52::23, about as long as head and scutellum (including exposed portion of mesoscutum). Commissure of clavus scarcely longer than scutellum. Corial margin distinctly longer than width of pronotum, 65::52, cuneus about one-fourth as long as corial margin, the membrane extending half again as far beyond apex of cuneus as length of cuneus.

Color pale fulvous with brown eyes, a fuscous annulus at apex of first and base of second antennal segments, black spines on tibiae and a distinctive pattern of dots on the femora (figure 1b).

Size: length $2\frac{1}{2}$ mm., width (hemelytra) 1 mm.

Female. Similar to the male but slightly shorter and wider with less incrassate second antennal segment.

Size: length 2.44 mm., width 1.1 mm.

Holotype, male, allotype, female, and fourteen paratypes, Likiep islet, Likiep atoll, Aug. 30, 1946, H. K. Townes collector.

Campylomma marshallensis runs to *adamsoni* in Knight's key (B. P. Bishop Museum Bulletin 142, p. 181, 1938) but differs from that Marquesan species in its relatively shorter second antennal segment and its antennal annuli, as well as in the pattern of dots on the femora. I have seen no species from Guam or elsewhere in the western Pacific which can be confused with *marshallensis*. This is further evidence of the rapid speciation which apparently is characteristic of *Campylomma* in the Pacific. Each isolated island or island group appears to have one or more endemic species. I collected a single specimen of the new species on Kwajalein atoll, June 10, 1950 (erroneously recorded as *Campylomma tahitica* Knight, Usinger, Proc. Haw. Ent. Soc., 14:318, 1951).

Family Veliidae

20. *Halovelia marianarum* Usinger

Bikarej, Arno atoll, July 14, 1950 (La Rivers).

Since this manuscript was submitted a collection has been received from Miss Amy Suehiro of the B. P. Bishop Museum. The material was collected by Y. Oshiro on Eniwetok atoll and includes two species new to the Marshalls and three new records for Eniwetok as follows: Pentatomidae—2. *Oechalia consocialis* (Boisd.), Engebi Island, Dec. 24, 1950, *Tournefortia*; 2c. *Platynopus melacanthus* (Boisd.), Bogombogo, Dec. 30, 1950, on flowers; Coreidae 2d. *Liorhyssus hyalinus* (Boisd.), Elugelab, Jan. 14, 1951, sweeping Ilima; Lygaeidae—3. *Nysius pulchellus* Stål, Engebi Island, Jan. 11, 1951; Nabidae—9. *Nabis capsiformis* German, Elugelab, Jan. 28, 1951.