

INSECTS OF MICRONESIA

HETEROPTERA: MIRIDAE¹

By JOSÉ C. M. CARVALHO

MUSEU NACIONAL, RIO DE JANEIRO, BRAZIL

INTRODUCTION

This paper deals with the Miridae of Micronesia and is based on collections assembled from 1947 to 1953 by the Pacific Science Board of the National Research Council; by Kyushu University, Japan; by Bernice P. Bishop Museum; and by other organizations. The collectors are listed on pages 195-199 of volume 1 of this series.

The specimens are principally deposited in the United States National Museum and Bishop Museum, as well as the Chicago Natural History Museum, the California Academy of Sciences, and the Museum of Comparative Zoölogy. Some paratypes are being sent to the British Museum (Natural History). The following symbols are used in locality citations: United States National Museum (US), California Academy of Sciences (CAS), and Kyushu University (KU).

The only papers dealing exclusively with the Hemiptera and treating the Miridae of part of Micronesia are those of Usinger, 1946 (B. P. Bishop Mus., Bull. 189: 11-103), in which 31 species are recognized, and Usinger [1951, Hawaiian Ent. Soc., Proc. 14 (2): 315-321; 1952, 14 (3): 519-524], in which four species are recorded from the Marshall Islands.

A history of the Heteroptera recorded from Guam and other islands of the Marianas can be found in Usinger (1946). A detailed account of the Micronesian Islands, including history, geography, faunas, bibliography, and so forth, is to be found in Gressitt (1954, *Insects of Micronesia—Introduction*, vol. 1).

A table with the distribution of the Micronesian Miridae and the neighboring islands is here included to give a general zoogeographic picture of the fauna and its possible relationships with other Pacific islands.

I wish to present my best thanks to Dr. J. L. Gressitt, who kindly arranged for this study and to express appreciation to Drs. R. I. Sailer, R. L. Usinger, and E. G. Linsley for technical cooperation and friendly help. The work was

¹ This represents, in part, Results of Professor T. Esaki's Micronesian Expeditions (1936-1940), No. 83.

done at the United States National Museum and the Department of Entomology, University of California, Berkeley. The United States Office of Naval Research, the Pacific Science Board (National Research Council), the National Science Foundation, and Bishop Museum have made this survey and the publication of the results possible. Field research was aided by a contract between the Office of Naval Research, Department of the Navy, and the National Academy of Sciences, NR 160-175. E. C. Zimmerman and the University of Hawaii Press lent several illustrations from "Insects of Hawaii," volume 3.

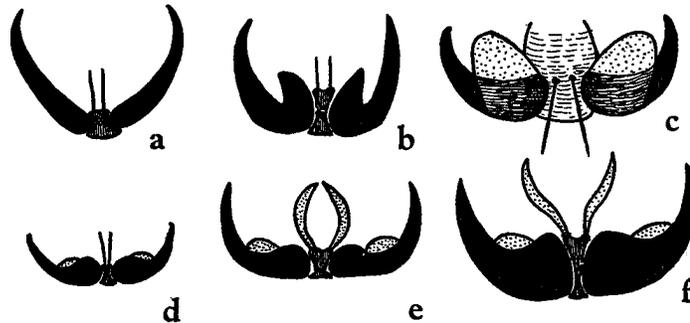


FIGURE 1.—Tarsal claws: a, Cylapinae; b, Deraeocarinae; c, Bryocarinae; d, Phylinae; e, Orthotylinae; f, Mirinae.

FAMILY MIRIDAE HAHN

KEY TO SUBFAMILIES OF MIRIDAE

1. Arolia present, large and free, arising between claws (fig. 1, e, f)..... 2
- Arolia absent, substituted by a pair of straight hairs (fig. 1, a-c)..... 4
- 2(1). Claws strongly toothed subapically; arolia large, enlarged distally, with small spinelike tubercles at their bases (fig. 29, c, d).....Palaucorinae
- Claws not toothed subapically; arolia if enlarged apically, without small spinelike tubercles at base..... 3
- 3(2). Arolia distinctly divergent toward their apices (fig. 1, f), usually dilated; pronotal collar usually present and well separated from pronotum by a furrowMirinae
- Arolia parallel or convergent toward their apices (fig. 1, e), usually slender; pronotal collar, if present, of depressed type not separated from pronotum by a furrow.....Orthotylinae
- 4(1). Pseudarolia present, free or connected with claw, sometimes very minute and difficult to see (fig. 1, c, d); in this case, pronotal collar absent..... 5
- Pseudarolia absent (fig. 1, a, b); pronotal collar present or, if not, claws very long, smooth, and slender..... 6
- 5(4). Pseudarolia arising from the base or inner margin of claw (fig. 1, d); membrane with two cells; tarsi linear.....Phylinae
- Pseudarolia arising from ventral surface of claw (fig. 1, c); membrane with one cell; tarsi thickened toward apices.....Bryocorinae
- 6(4). Claws toothed or thickened at base (fig. 1, b).....Deraeocarinae
- Claws smooth at base, long and slender (fig. 1, a).....Cylapinae

SUBFAMILY CYLAPINAE KIRKALDY

KEY TO TRIBES

1. Calli large, confluent, occupying anterior two-thirds of pronotum; clypeus distinctly curved, head usually long and pointed.....**Fulviini**
 Calli not occupying anterior two-thirds of pronotum; clypeus flat, vertical, head short and vertical.....**Cylapini**

TRIBE FULVIINI UHLER

KEY TO GENERA

1. Pronotal collar absent or obscured by calli; tarsi two-segmented; body shagreened, oval or rounded in outline.....**Peritropis**
 Pronotal collar present; tarsi three-segmented; body elongate..... 2
 2. Eyes very large, reaching gula below in lateral view; head more or less horizontal, pointed**Fulvius**
 Eyes not reaching gula below in lateral view; head inclined, not pointed in front**Rhinocylapidius**

Genus *Fulvius* StålKEY TO MICRONESIAN SPECIES OF *FULVIUS*

1. Body unicolorous, castaneous to dark brown.....**concolor**
 Body with pale or whitish areas..... 2
 2(1). Head and pronotum with three longitudinal pale fasciae.....**variegatus**
 Head and pronotum unicolorous..... 3
 3(2). Second antennal segment on apical third and basal half of clavus whitish....
**brevicornis**
 Second antennal segment and clavus unicolorous.....**angustatus**

1. *Fulvius angustatus* Usinger (fig. 2, e, f).

Fulvius angustatus Usinger, 1946, B. P. Bishop Mus., Bull. 189: 68.

Characterized by its color (especially pale area of vertex) and male genitalia.

Male: Length 2.7 mm., width 0.9 mm. *Head*: Length 0.4 mm., width 0.4 mm., vertex 0.17 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.7 mm.; III, 0.3 mm.; IV, 0.3 mm. *Pronotum*: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 1.5 mm.

General color dark brown, basal fourth of head and portion immediately beyond middle of vertex brownish ochraceous; mesoscutum laterally brownish ochraceous; extreme base of corium pale and outer apex of corium just before cuneus white for about width of embolium; first antennal segment brown, second pale brown, fulvous to ochraceous, last two segments more or less infuscated; underside of body brown, trochanters, tibiae and tarsi testaceous, coxae and femora brownish, the latter pale at apices.

Elongate, slender, head strongly pointed; humeral angles produced; mesoscutellar lateral carinae prominent; pubescence very short, whitish, somewhat adpressed; cuneus very short, about as long as wide at base, membrane (female) just covering abdomen; rostrum reaching third (male) or fourth (female) abdominal segment.

Genitalia: Left clasper (fig. 2, e) curved, with upper basal portion raised and beset with setae, apical portion tapering, the extreme apex with a small hooklike process. Right clasper (fig. 2, f) smaller, also with dorsal setae, ended by a narrow, pointed sclerotized portion.

Female: Slightly larger and more robust than male, with membrane of hemelytra distinctly shorter, just covering distal portion of abdomen.

DISTRIBUTION: Mariana Is. Three males, seven females.

N. MARIANA IS. PAGAN: Apr. 1940, Yasumatsu and Yoshimura.

S. MARIANA IS. SAIPAN: Garapan, May 1940, Yasumatsu and Yoshimura. GUAM: Pt. Ritidian, June 1945, Stuntz; Pilgo River, rotten papaya, May 1945, G. Bohart and Gressitt.

I also studied six paratypes from Mount Alifan, Guam.

This species is closest to *F. tagalicus* Poppius and *F. macgillavryi* Poppius, but it differs from the first in the shorter pronotum and from the second in its narrower vertex.

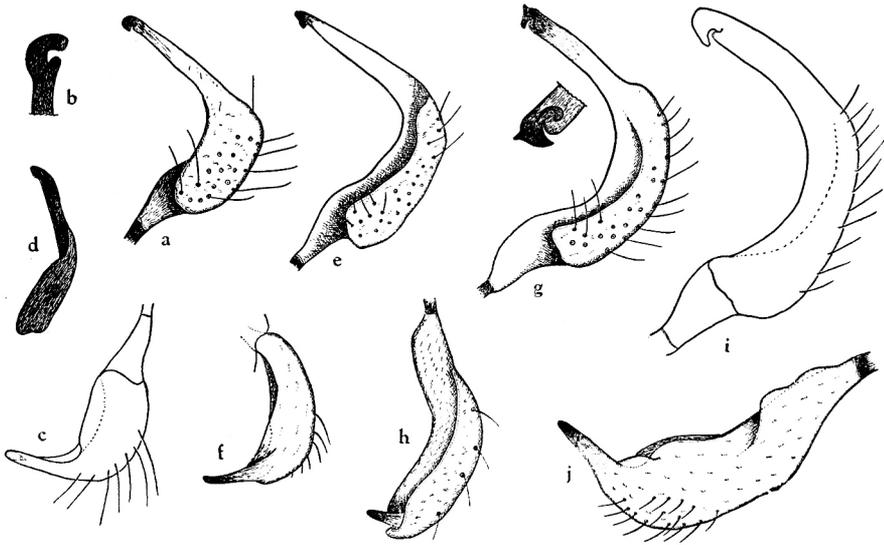


FIGURE 2.—Male genitalia. a-d, *Fulvius variegatus*: a, left clasper; b, apex of left clasper; c, right clasper; d, spiculum of vesica. e, f, *F. angustatus*: e, left clasper; f, right clasper. g, h, *F. brevicornis*: g, left clasper and apex of same; h, right clasper. i, j, *F. concolor*: i, left clasper; j, right clasper.

2. *Fulvius brevicornis* Reuter (fig. 2, g, h).

Fulvius brevicornis Reuter, 1895, Rev. d'Ent. 14: 138.

Teratodella anthocoroides Reuter, 1875, nec Stål, K. Sven. Vet.-Akad., Bihang., Handl. 3 (1): 8.

Fulvius samoanus Knight, 1935, Insects of Samoa 2 (5): 203, new syn.

Characterized by its color and the male genitalia.

Male: Length 2.9 mm., width 0.9 mm. *Head*: Length 0.5 mm., width 0.5 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.3 mm.; II, 0.7 mm.; III, 0.3 mm.; IV, 0.4 mm. *Pronotum*: Length 0.2 mm., width at base 0.8 mm. *Rostrum*: Length 1.7 mm.

General color dark castaneous to brown; apical third of second antennal segment, basal third of hemelytra (more pronounced on clavus) and a triangular area on extreme apex of embolium reaching slightly over exocorium, white; apices of coxae, trochanters, extreme apices of femora and tibiae toward apices pale yellow. Some specimens show a reddish tinge on apex of clypeus and bucculae.

Rostrum reaching genital segment.

Genitalia: Left clasper (fig. 2, *g*) with apical portion longer and more slender than in other species, the apex typical. Right clasper (fig. 2, *h*) slightly curved, ended by a point.

Female: Identical with male in color, slightly more robust. Length 3.2 mm., width 1.1 mm.

DISTRIBUTION: Christmas Is., France (on ship), Venezuela, Martinique, Ceylon, Formosa, Africa, Cuba, St. Thome, Burma, East Indies, Asia, Brazil, North America, Bonin Is., Mariana Is. Twenty-one males and 10 females.

BONIN IS. CHICHI JIMA: Sakaiura, June 1949, Mead.

S. MARIANA IS. GUAM: Pt. Ritidian, light trap, Aug. 1945, Gressitt; Pt. Oca, light trap, June, July 1945, G. Bohart and Gressitt, Dec. 1945, Gressitt; near Agana, June 1945, G. Bohart and Gressitt.

It differs from other species in the extensive white area on the hemelytra and second antennal segment, and in the structure of the male genitalia.

3. *Fulvius concolor* Carvalho, n. sp. (fig. 2, *i, j*).

Characterized by color, length of rostrum, relative proportions of antennal segments, and male genitalia.

Male: Length 2.8 mm., width 1.1 mm. *Head*: Length 0.5 mm., width 0.5 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.7 mm.; III, 0.3 mm.; IV, 0.5 mm. *Pronotum*: Length 0.4 mm., width at base 0.8 mm. *Rostrum*: Length 1.8 mm.

Unicolorously castaneous to dark brown. Some specimens have basal portion of hemelytra and apices of femora paler, while others also show a paler embolium: posterior portion of vertex, cuneus, and scutellum usually darker.

Rostrum reaching sixth or seventh abdominal segment.

Genitalia: Left clasper (fig. 2, *i*) long, curved with a typical apex. Right clasper (fig. 2, *j*) smaller, ending in an acute point.

Female: Similar to male in color and dimensions, slightly more robust.

Holotype, male (US), Koror I., Palau Is., Limestone Ridge north of inlet, Jan. 16, 1948, H. S. Dybas; allotype, female (US), Koror, Palau, July 16, 1953, J. W. Beardsley. Paratypes, 27 males and 19 females. Palau: Ngardok, Babelthuap (Babeldaob), Feb. 11, 1938, T. Esaki; Koror, July 16, 1953, Beardsley; Koror, Limestone Ridge north of inlet, Jan. 16, 1948, Dybas; Nov. 28, 1947, under bark of banyan log, Dybas; southwest Koror, 25 m., light trap, Dec. 1952, J. L. Gressitt. Yap: East Rumung I., July 1950; Ruul District, Yap I., July 1950, R. J. Goss. Ponape: Matalanim Plantation, June 1950, P. A. Adams; Colonia, Jan. 1, 1938, T. Esaki; Ronkiti, July 18, 1939, Esaki; Nanipil (Nampil), Feb. 27, 1948, Dybas.

DISTRIBUTION: Caroline Is. (Palau, Yap, Ponape).

This species differs from *F. pallidus* Poppius in the length of the rostrum (reaching to the sixth or seventh abdominal segment), in the proportion of the antennal segments (second segment more than 2.5 times longer than first segment), and in the length of the hemelytra.

4. *Fulvius variegatus* Poppius (figs. 2, a-d; 3).

Fulvius variegatus Poppius, 1909, Acta Soc. Sci. Fenn. 27 (4): 31, 38.

Fulvius peregrinator Kirkaldy, 1910, Hawaiian Ent. Soc., Proc. 2(3): 120;
new syn.

Fulvius buxtoni Knight, 1935, Insects of Samoa 2 (5): 203; new syn.

Fulvius peregrinator Zimmerman, 1948, Insects of Hawaii 3: 197, fig. 83.

Characterized by the pale vittae of head and pronotum and the male genitalia.

Male: Length 2.8 mm., width 0.9 mm. *Head*: Length 0.5 mm., width 0.5 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.4 mm. *Pronotum*: Length 0.4 mm., width at base 0.8 mm. *Rostrum*: Length 1.7 mm.

Color castaneous to dark brown; three longitudinal stripes on head and pronotum, basal half of corium and embolium and basal outer portion of clavus, extreme apex of clavus and cuneus pale yellow; a triangular spot on apex of embolium white; first and second antennal segments, apices of coxae, trochanters, apices of femora, and tibiae paler; femora with reddish tinge at apices.

Rostrum reaching second visible abdominal segment.

Genitalia: Aedeagus with a typical spiculum (fig. 2, d). Left clasper (fig. 2, a) with a slender apical portion ending with a hook. Right clasper also pointed apically, as in figure 2, e.

Female: Length 3.2 mm., width 1.1 mm. Similar to male in color but more robust.

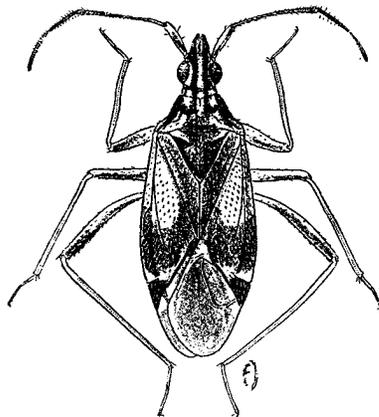


FIGURE 3.—*Fulvius variegatus* (after Zimmerman).

DISTRIBUTION: New Guinea, Hawaii, Samoa and Caroline Is. Eight males and 14 females.

PALAU IS. KOROR: Nerubodoru, Mar. 1936, Esaki.

YAP. East Rumung I., east Map I., south Map I., south Yap I., Gagil District, July 1950, Goss.

TRUK. MOEN: South valley, Mt. Tonaachau, May 1949, Potts.

PONAPE. Jokaj I., Feb. 1948, Dybas.

KUSAIE. Malem, Dec. 1937, Esaki.

This species differs from others in the genus in the characteristic longitudinal stripes of head and pronotum, in the unicolorous antenna, and in the

structure of the male genitalia. It has been described from New Guinea, and occurs also in Hawaii and Samoa.

Genus *Peritropis* Uhler

KEY TO MICRONESIAN SPECIES OF PERITROPIS

1. Second antennal segment unicolorous; clypeus strongly compressed.....*ponapensis*
 Second antennal segment with a pale spot or ring; clypeus not noticeably compressed 2
- 2(1). Second antennal segment with a distinct pale ring at middle; posterior margin of calli distant from hind margin of pronotum by an espacement equal to two diameters of second antennal segment.....*guamensis*
 Second antennal segment with a pale spot on upper surface only; calli almost touching posterior margin of pronotum, this espacement equals diameter of second antennal segment or less..... 3
- 3(2). Embolium mostly red; second antennal segment 1.1 mm. long.....*yapensis*
 Embolium mostly brown; second antennal segment only 0.8 mm. long.....*gressitti*

5. *Peritropis gressitti* Carvalho, n. sp. (fig. 6, *c*, *d*).

Characterized by color of second antennal segment, structure of pronotum and head, length of rostrum, and male genitalia.

Male: Length 3.0 mm., width 1.3 mm. *Head*: Length 0.3 mm., width 0.7 mm., vertex 0.23 mm. *Antennae*: Segment I, length 0.3 mm.; II, 0.8 mm.; III, 0.1 mm.; IV, 0.3 mm. *Pronotum*: Length 0.3 mm., width at base 1.0 mm. *Rostrum*: Length 1.6 mm.

General color mottled with brown, reddish, and yellow; head pale yellow with a reddish longitudinal fascia following frontal sulcus, two reddish-brown spots contiguous to inner margin of eyes, about level with lower end of frontal sulcus, a reddish stripe beginning at front margin of antennal peduncle following down jugum, apical two-thirds of clypeus, gena, portion of buccula, and first rostral segment reddish; eyes dark brown; antennae with first segment marmorate with reddish brown and yellow; second segment fuscous brown with a submedian whitish spot on upper portion; third and fourth segments, brown to fuscous; pronotum mottled with reddish, yellow, and brown, calli with a longitudinal line of four to five yellowish spots, lateral and posterior margins of pronotum with four to five yellowish spots, the two largest ones on posterior margin, level with the two on mesoscutum, the latter with lateral pit brown; scutellum more noticeably brownish at sides and at base, mottled with yellow, the apex yellowish white; hemelytra brownish, mottled with yellow and red, embolium marmorate with red and yellow, showing a brownish tinge on extreme base and apex, and on basal third, endocorium with reddish brown areas, the two largest ones near middle of clavus; exocorium fuscous brown, its extreme apex with a marked brown spot surrounded externally (bordering membrane) by an angulate whitish line interrupted at longer arm by a small brownish spot, cuneus mottled with yellow and brown basally and reddish with yellow apically, membrane fuscous cinnamon slightly mottled with yellow; underside of body also mottled with reddish, brown, and yellow, a large reddish brown spot on posterior portion of pro- and mesopleura, sides of coxal cleft and middle of mesosternum yellow; apical half of anterior femora, apical third of middle pair, a submedian ring and a narrow subapical ring on hind pair brown (between the two are three to four reddish brown spots inferiorly), apices of femora and extreme bases of tibiae, reddish; anterior and median tibiae with at least three yellow and three brown rings or areas, hind pair reddish brown with yellow spots; tarsi yellowish (first segment sometimes darker). Some specimens show color variation, with head, pronotum and scutellum noticeably darker, mottled with yellow and a slight tinge of red, scutellum entirely brown, whitish apically, embolium with seven yellowish spots.

Head with a marked frontal sulcus and two raised tubercular areas on middle of front bordering eyes (this area surrounding a somewhat ocellate depression present on both sides of vertex), pronotum with calli strongly raised and deeply sulcate at middle, occupying almost entire disc (area of disc between hind margin of pronotum and calli equal to an espacement less than diameter of second antennal segment); clypeus compressed only at base, rostrum reaching to fourth or fifth abdominal segment (male) or only to hind coxae (female).

Genitalia: Aedeagus with sclerotized median portion (fig. 6, *d*) which seems to be the ejaculatory duct; left clasper (fig. 6, *c*) somewhat laminate and strongly twisted, beset with long, fine dorsal setae, ended by a very narrow, bent apex. Right clasper also laminate, strongly bent, with long, fine dorsal setae, ended by a pointed and narrowed apex; a small toothlike tubercle is to be seen on ventral side of clasper just behind end of narrowed apical portion. The apical portion of left clasper (fig. 6, *c*) seems to be characteristic.

Female: Length 3.5 mm., width 1.7 mm. *Head*: Length 0.5 mm., width 0.6 mm., vertex 0.28 mm. *Antennae*: Segment I, length 0.3 mm.; II, 1.0 mm.; III, 0.2 mm.; IV, 0.3 mm. *Pronotum*: Length 0.5 mm., width at base 1.1 mm.

Similar to male in appearance but larger and broader, the membrane noticeably shorter, first antennal segment somewhat bent externally with an inner median excrescence and two setae. Color as in male but with larger brown, yellow, and reddish areas, cuneus with a more or less hyaline area at base, light spots of membrane more distinct.

Holotype, male (US), Koror I., Palau Is., Limestone Ridge south of inlet, Jan. 21, 1948, H. S. Dybas; allotype, female (US), Peleliu I., Palau, east coast, Jan. 26, 1948, Dybas. Paratypes, 17 males. Palau: Ngaiangel (Ngajangel) I., Kayangel Atoll, light trap, Dec. 15, 1952, J. L. Gressitt; northwest Auluptagel, 25 m., Dec. 12, 1947, Dybas; southwest Koror, 25 m., light trap, Dec. 5, 1952, Gressitt; Peleliu, east coast, Jan. 26, 1948, Dybas.

DISTRIBUTION: Caroline Is. (Palau).

This species is near *P. guamensis* but differs in that the whitish spot of the second antennal segment is present on the upper surface only, in the shorter rostrum, in the absence of a reddish oblique line on the cuneus, and in the structure of the male genitalia.

6. *Peritropis guamensis* Carvalho, n. sp. (figs. 4; 5, *b*; 6, *h, i*; 8, *c*).

Characterized by the short head, frontal ocellate area being obsolete, color of cuneus and antennae, length of rostrum, and male genitalia.

Male: Length 2.8 mm., width 1.2 mm. *Head*: Length 0.4 mm., width 0.6 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.8 mm.; III and IV broken. *Pronotum*: Length 0.4 mm., width at base 1.0 mm. *Rostrum*: Length 1.7 mm.

General color mottled with brown, pale yellow, and orange; head mottled with brown and yellow, the brown spot following frontal sulcus forming a mushroom-like area; eyes dark brown; antennae dark brown, apex and base of first segment, median ring, and apex of second segment whitish, third and fourth segments fuscous (first joint in some specimens shows a reddish tinge near apex, bases of setae are whitish); pronotum mottled with brown and pale yellow, anterior angles with a marked whitish spot bearing a whitish seta, lateral and posterior margins with small whitish spots (three more marked ones on posterior margin within mesoscutelar area); mesoscutum and scutellum dark brown, finely mottled with yellow, margins of mesoscutelar pit and apex of scutellum whitish; hemelytra with clavus and endocorium mottled with orange; exocorium finely mottled with yellow and minute apical fuscous areas, its apex with a dark brown spot; embolium with seven to eight yellow spots alternated with brown areas; cuneus whitish apically, with a typical

reddish line curved obliquely in its middle and a light portion on inner angle; membrane infumate with yellow, roundish spots; underside of body mostly brown to reddish brown, sides of pleural cleft, ostiolar peritreme, spot on metapleura, coxae, and bases of femora whitish to yellow, apical portion of femora dark brown with a subapical yellow ring or spots, tibiae with extreme base and three rings dark.

Clypeus flat and broad above, ocellate spot on vertex obsolete, calli convex, but not strongly raised as in *P. ponapensis* or *P. gressitti*, leaving a flat area behind them (fig. 5, b) and the posterior margin of pronotum equal to about half width of vertex, rostrum reaching genital segment (male) or only middle of abdomen (female), head fairly short, not noticeably protruded in front.

Genitalia: Aedeagus with two sclerotized structures (fig. 6, i). Left clasper (fig. 6, h) as seen in pictures from dorsal and ventral aspects. Right clasper (fig. 8, c) complex, twisted apically, with several small setae on lateral margin.

Female: Length 3.6 mm., width 1.7 mm. *Head*: Length 0.5 mm., width 0.7 mm., vertex 0.28 mm. *Antennae*: Segment I, length 0.3 mm.; II, 1.0 mm.; III and IV broken. *Pronotum*: Length 0.6 mm., width at base 1.2 mm.

More robust and more ovate than male, whitish spot on cuneus and yellow spots of membrane more marked.

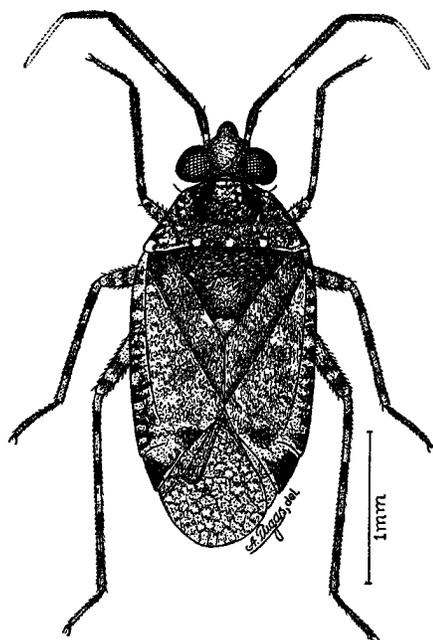


FIGURE 4.—*Peritropis guamensis*, male, holotype.

Holotype, male (US), Pt. Oca, Guam, light trap, May 27, 1945, G. E. Bohart and J. L. Gressitt; allotype, female (US), Pt. Oca, Guam, light trap, July 16, 1945, Bohart and Gressitt. Paratypes, 23 males. Guam: Pt. Ritidian, light trap, Aug. 5, 1945; Agana, May 23, 1945, Bohart and Gressitt; Pt. Oca, May 27-28, June 5, June 22, July 16, 1945, light trap, Bohart and Gressitt; Pt. Oca, at light, Dec. 20, 1945, Gressitt.

DISTRIBUTION: Southern Mariana Is. (Guam).

This species is near *P. gressitti* but differs in the complete whitish ring of the second antennal segment, in the much longer rostrum, in the reddish oblique line on the cuneus, and in the structure of the male genitalia. It also differs from *P. annulicornis* Poppius in the single pale ring of the second antennal segment and from *P. lugubris* Poppius in the absence of scale-like hairs and in the color of body and tibiae.

7. *Peritropis ponapensis* Carvalho, n. sp. (figs. 5, a; 6, a, b; 8, a).

Characterized by the noticeably produced head, strongly compressed clypeus, the absence of whitish spot of second antennal segment, and male genitalia.

Male: Length 2.8 mm., width 1.2 mm. *Head*: Length 0.3 mm., width 0.6 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.3 mm.; II, 0.9 mm.; III, 0.2 mm.; IV, 0.2 mm. *Pronotum*: Length 0.4 mm., width at base 1.0 mm. *Rostrum*: Length 1.7 mm.

General color testaceous to cinnamon, mottled with pale yellow, brown, and cinnamon (some specimens with orange mottlings); head yellowish with frontal sulcus brown, a spot on anterior margin of eyes, a longitudinal fascia above antennal peduncle, dark brown, genae reddish; eyes brown to black; antennae with first and second segments yellow cinnamon, third and fourth segments dark fuscous; pronotum mottled with yellow, cinnamon, and fuscous; two longitudinal fasciae beginning inside inner margin of eyes and reaching about to outer angles of mesoscutum darker; lateral margins of pronotum with five to six small yellow spots, sunken portion of pronotum anteriorly paler; mesoscutum and scutellum unicolorous (slightly mottled with pale yellow), the latter with a pale-yellow area before extreme apex which is brown; hemelytra with clavus mottled with yellow and fuscous orange, corium with three darker and three paler areas, the larger dark one near middle of clavus, extreme apex of endocorium with a dark brown spot surrounded distally by three whitish areas, embolium with 10 to 12 dark areas alternated with yellow ones, cuneus uniformly mottled with brown and yellow, membrane paler at base, darker apically where yellow spots are more distinct, veins with dark and yellow portions; underside mottled with yellow and reddish brown, mesopleura with a large reddish brown spot, coxae yellow, apical two-thirds of anterior femora, apical third of middle pair, a submedian and one apical ring on hind femora (between them four to five dark brown spots are to be seen) dark brown, extreme apices of femora reddish, tibiae yellowish with three dark or brown rings (extreme base brown), tarsi (except extreme base of first joint) yellow.

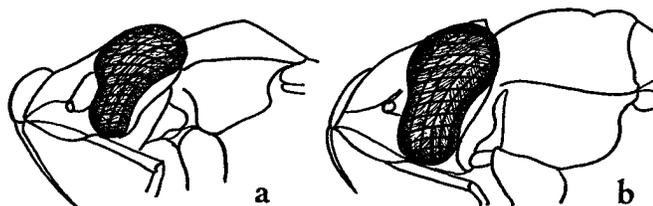


FIGURE 5.—Side view of head and pronotum: a, *Peritropis ponapensis*; b, *P. guamensis*.

Head strongly produced in front, clypeus strongly compressed, gula deeply sulcate, second antennal segment long, slightly curved, calli of pronotum noticeably raised as in *P. gressitti*, sulcate at middle, ocellate area of vertex raised anteriorly; rostrum reaching seventh abdominal segment.

Genitalia: Aedeagus (fig. 6, b) also with two sclerotized appendages internally. Left clasper (fig. 6, a) curved, with a subapical tooth. Right clasper (fig. 8, a) somewhat falciform, tapering to apex.

Female: Unknown.

Holotype, male (US), Mt. Kupwuris, Ponape, north slope at 1,000 to 1,500 ft. alt., Mar. 11, 1948, H. S. Dybas. Paratypes, four males. Ponape: Mt. Kupwuris, north slope at 1,000 ft. alt., Mar. 11, 1948, Dybas; Mt. Temwetemwensekir, Jan. 16, 1953, J. L. Gressitt.

DISTRIBUTION: Caroline Is. (Ponape).

This species differs from *P. gressitti* and *P. guamensis* in the strongly produced head with a strongly compressed clypeus, in the absence of a whitish spot or ring on the second antennal segment, and in the structure of the male genitalia; it differs from *P. lewisi* Distant in the size and color.

8. *Peritropis yapensis* Carvalho, n. sp. (figs. 6, e-g; 8, d).

Characterized by long second antennal segment, color, and male genitalia.

Male: Length 3.0 mm., width 1.2 mm. *Head*: Length 0.4 mm., width 0.6 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.1 mm.; III and IV broken. *Pronotum*: Length 0.4 mm., width at base 0.9 mm. *Rostrum*: Length 1.6 mm.

Color castaneous to dark brown mottled with pale yellow and reddish; two more marked reddish vittae running obliquely over calli toward humeral angles; pale spot of second antennal segment on dorsal side only and situated at middle of segment; undersides of body ochraceous, gena and area surrounding dark spot of mesopleura reddish; femora with two castaneous rings (between them inferiorly a few dark spots) and reddish extreme apices, tibiae with two wide fuscous rings.

Calli occupies whole upper surface of disc, reaching posterior margin of pronotum, ocellate depression on vertex distinctly marked, lateral margins of pronotum flat, horizontal, head pointed but without a compressed clypeus.

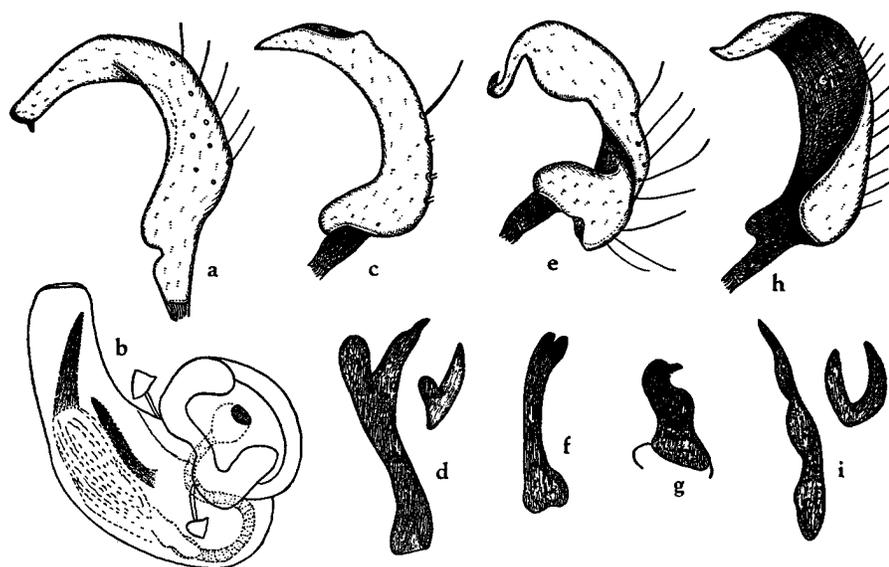


FIGURE 6.—Male genitalia. a, b, *Peritropis ponapensis*: a, left clasper; b, aedeagus. c, d, *P. gressitti*: c, left clasper; d, spiculi of vesica. e-g, *P. yapensis*: e, left clasper; f, spiculum of vesica; g, apex of left clasper. h, i, *P. guamensis*: h, left clasper; i, spiculi of vesica.

Genitalia: Aedeagus with a typical spiculum (fig. 6, f). Left clasper strongly curved and twisted, as shown in figure 6, e. Right clasper (fig. 8, d) also strongly curved.

Female: Unknown.

Holotype, male (US), hill behind Yaptown, Yap I., Nov. 28, 1952, J. L. Gressitt.

DISTRIBUTION: Caroline Is. (Yap).

This species differs from *P. guamensis* in the larger calli, in the color, and in the male genitalia; from *P. ponapensis* in the lack of a compressed clypeus, in the presence of a white spot on the second antennal segment, and in the male genitalia; from *P. gressitti* in the color, in the larger calli, in the longer second antennal segment, and in the male genitalia.

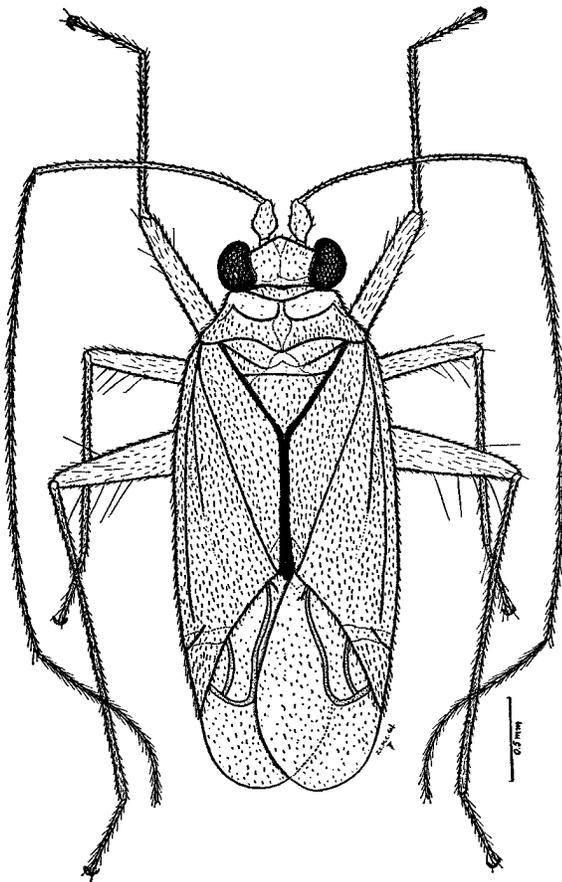


FIGURE 7.—*Cylapomorpha pacifica*, male, holotype.

TRIBE CYLAPINI KIRKALDY

KEY TO GENERA

1. First antennal segment shorter than width of vertex; pronotum not constricted at middle, disc smooth.....*Cylapomorpha*
 First antennal segment longer than width of vertex; pronotum constricted at middle, disc rugose.....*Mycetocylapus*

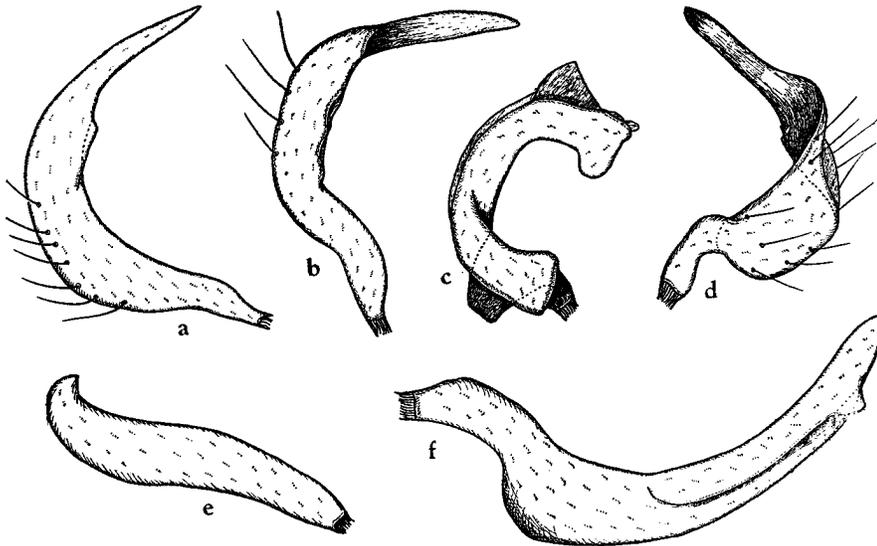


FIGURE 8.—Male genitalia. a-d, *Peritropis* species: a, right clasper of *P. ponapensis*; b, right clasper of *P. gressitti*; c, right clasper of *P. guamensis*; d, right clasper of *P. yapensis*. e, f, *Cylapomorpha pacifica*: e, right clasper; f, left clasper.

9. *Cylapomorpha pacifica* Carvalho, n. sp. (figs. 7; 8, e, f).

Characterized by its color, dimensions, and male genitalia.

Male: Length 3.4 mm., width 1.4 mm. *Head*: Length 0.3 mm., width 0.8 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.2 mm.; II, 1.5 mm.; III, 2.8 mm.; IV, 1.3 mm. *Pronotum*: Length 0.3 mm., width at base 1.1 mm. *Rostrum*: Length 1.8 mm.

Color olive brown to cinnamon variegated with silvery tomentose areas; longitudinal fascia on disc of pronotum (broadest at middle), scutellum, extreme apex of embolium, and extreme base of cuneus white; membrane infumate, veins and cuneus tending to castaneous; hemelytra with darker longitudinal lines over veins and small darker areas alternated with silvery tomentose ones; mesoscutum, head, and first antennal segment tending to castaneous; underside of body pale, pleural area and upper portion of abdominal tergites dark brown; femora infuscate apically with a subapical white ring, tibiae dark with three white rings, tarsi infuscate at base, pale apically; front femora basally and sides of mesosternum with silvery tomentose areas.

Rostrum reaching genital segment (male) or base of terebra (female); first antennal segment strongly globose at middle, tapering to apex and base, remaining segments very long and slender, eyes large, reaching over anterior angles of pronotum, calli large, transverse, collar visible, not reaching lateral margins, posterior margin of pronotum bisinuate, the mesoscutum broadly exposed.

Male: Length 5.5 mm., width 2.6 mm. *Head*: Length 0.3 mm., width 1.2 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.6 mm.; II, 1.9 mm.; III, 0.7 mm.; IV, 0.6 mm. *Pronotum*: Length 1.1 mm., width at base 2.2 mm. *Rostrum*: Length 2.5 mm.

General color dark brown with reddish ochraceous on basal half of vertex, at insertions of antennae, and laterally and at apex of tylus; pronotum with three reddish fasciae behind callosities, the longest at middle, tapering posteriorly, and a shorter one on either side sublaterally; humeral angles reddish ochraceous; scutellum tinged with red at basal angles and at apex; hemelytra brown with a partially obscured pale longitudinal line on either side of claval suture; cuneus reddish at outer basal angle; membrane entirely clouded, palest apically, brown on and around veins; under surface brown, the ostiolar area paler; antennae brownish, the first segment somewhat paler, second with a pale ring at base and another at middle, third and fourth narrowly pale basally; rostrum and legs ochraceous, the femora more or less infuscated with one or two pale rings subapically, tibiae brown, ringed with ochraceous subbasally, at basal fourth, and broadly beyond middle; tarsi brown basally and apically, pale at middle.

Rostrum not reaching hind margins of middle coxae, upper surface almost entirely glabrous, scutellum and head impunctate, head transversely carinate at hind margin, pronotum and hemelytra coarsely punctate.

Genitalia: Left clasper as shown in illustration (fig. 11, f) with a basal lobe and setae. Right clasper as shown in figure 11, g.

Female: Length 6.2 mm., width 2.5 mm. Similar to male in color.

DISTRIBUTION: Mariana Is. One male and one female.

S. MARIANA IS. GUAM: Pt. Oca, June 1945, G. E. Bohart and Gressitt.

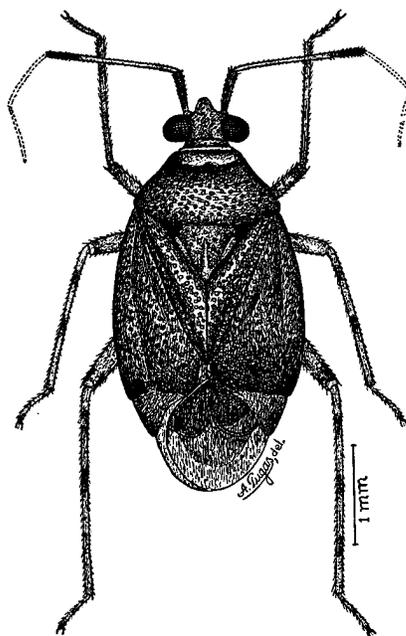


FIGURE 10.—*Deraeocoris trukensis*, female, paratype.

12. *Deraeocoris trukensis* Carvalho, n. sp. (figs. 10; 11, a, b).

Characterized by the opaque body, length of second antennal segment (male), color, and male genitalia.

Male: Length 4.5 mm., width 1.9 mm. *Head*: Length 0.5 mm., width 0.9 mm., vertex 0.22. *Antennae*: Segment I, length 0.4 mm.; II, 1.8 mm.; III, 0.7 mm.; IV, 0.5 mm. *Pronotum*: Length 1.0 mm., width at base 1.7 mm. *Rostrum*: Length 1.7 mm.

General color shining brownish testaceous with a few pale-yellow markings and a reddish spot on cuneus; eyes castaneous, frons with two yellow areas bordering eyes; antennae brownish yellow, all segments more or less infuscate apically; pronotum with collar and extreme posterior margin yellowish (punctures just behind collar and calli, darker); scutellum with two lateral and one median and apical area, yellow; hemelytra with lighter lines following veins and commissures (sometimes only the punctures of clavus are dark brown), cuneus with a typical reddish spot over lighter basal portion, membrane infumate with darker cloudings; underside of body and legs yellowish testaceous; femora with two subapical, and tibiae with two subbasal, rings, infuscate.

Body glabrous, strongly shining, punctate (including scutellum and hemelytra), rostrum reaching hind coxae, hemelytra and membrane opaque.

Genitalia: Left clasper (fig. 11, a) much larger than other, dilated basally, strongly bent, tapering to apex. Right clasper small, as shown in figure 11, b.

Female: Length 4.8 mm., width 2.2 mm. *Head*: Width 1.0 mm., vertex 0.30 mm. *Antennae*: Segment II, length 1.7 mm.; III, 0.8 mm. *Pronotum*: Width 1.8 mm.

Similar to male in color, slightly more robust.

Holotype, male (US), Civ. Ad. Area, Moen I., Truk, Mar. 10, 1949, R. W. L. Potts; allotype, female (US), same data as type. Paratypes, nine males and 27 females. Truk: Moen, Civ. Ad. Area, Feb. 10, 1949, Potts; May 16, 1946, R. J. Pelzer; Toloas-Erin, Apr. 14, 1940, K. Yasumatsu and S. Yoshimura.

DISTRIBUTION: Caroline Is. (Truk).

This species is near *D. ponapensis*, but it differs in the opaque body, in the longer second antennal segment (male), and in the color and structure of the male genitalia.

13. *Deraeocoris trukensis marianae* Carvalho, n. subsp.

Characterized by pale marginal posterior margin of pronotum and length of rostrum.

Female: Length 5.1 mm., width 2.3 mm. *Head*: Length 0.5 mm., width 0.9 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.6 mm.; III, 0.6 mm.; IV, 0.6 mm. *Pronotum*: Length 1.1 mm., width 2.0 mm. *Rostrum*: Length 1.7 mm.

Color identical with that of typical subspecies, but with posterior margin of pronotum pale throughout; rostrum reaching middle coxae.

No males were studied.

Holotype, female (US), Guam, Mt. Lamlam, Nov. 27, 1952, N. L. H. Krauss. Paratype, female, Pt. Oca, June 9, 1945, J. L. Gressitt.

DISTRIBUTION: Mariana Is. (Guam).

It is probable that when the male is known this subspecies will be raised to specific rank. It differs from *D. trukensis* in the above-mentioned characters and in the size, being noticeably larger.

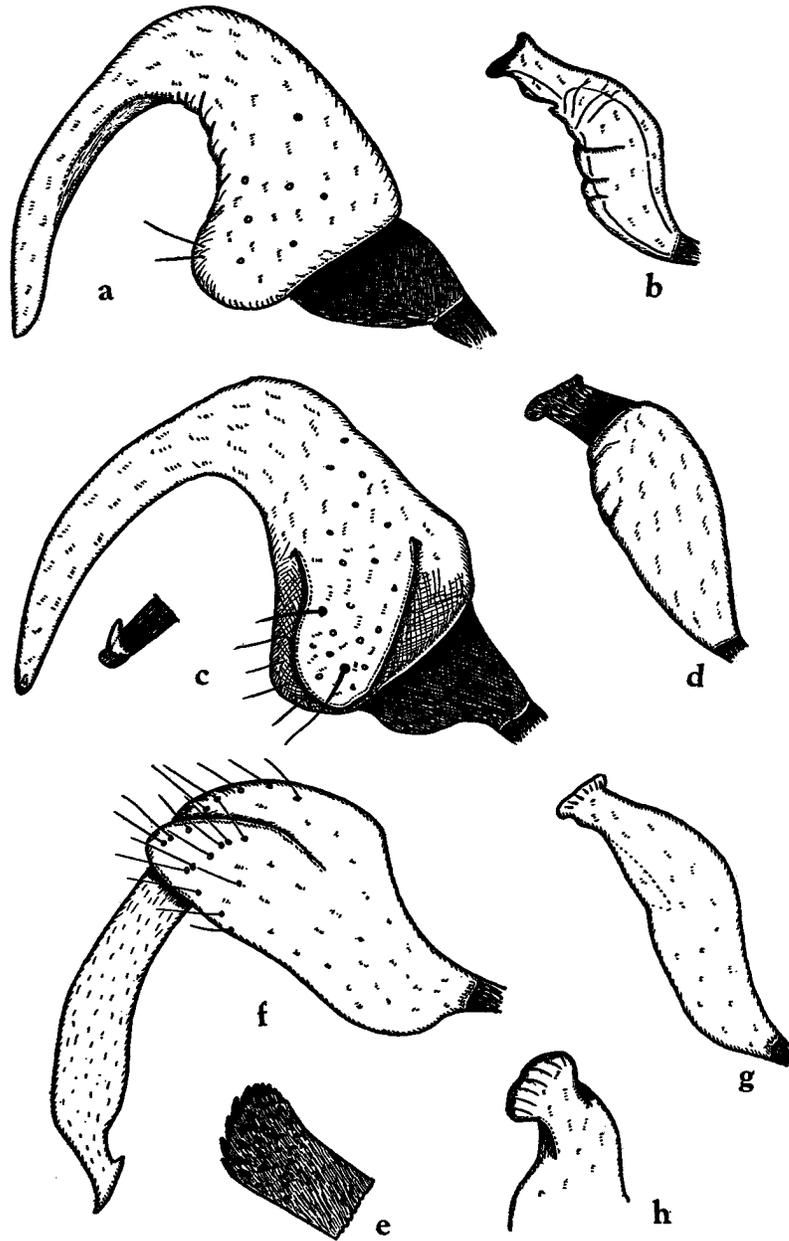


FIGURE 11.—Male genitalia. a, b, *Deraeocoris trukensis*: a, left clasper; b, right clasper. c-e, *D. ponapensis*: c, left clasper; d, right clasper; e, apex of vesica. f, g, *D. guamensis*: f, left clasper; g, right clasper. h, apex of right clasper.

14. *Deraeocoris ponapensis* Carvalho, n. sp. (figs. 11, *c-e*; 12).

Characterized by its translucent hemelytra, length of second antennal segment (male), color, and male genitalia.

Male: Length 4.9 mm., width 2.2 mm. *Head:* Length 0.5 mm., width 1.1 mm., vertex 0.25 mm. *Antennae:* Segment I, length 0.4 mm.; II, 1.1 mm.; III, 0.5 mm.; IV, broken. *Pronotum:* Length 1.0 mm., width at base 1.8 mm. *Rostrum:* Length 2.2 mm.

General color yellowish testaceous mottled with brown; head, antennae, and calli yellowish testaceous, eyes castaneous; collar, extreme posterior margin of pronotum, and three obsolete longitudinal fasciae on pronotum whitish yellow; scutellum with lateral margins, median line, and apex whitish yellow (much more pronounced than in *trukensis*); hemelytra brownish testaceous mottled with pale yellowish translucent areas; embolium mostly translucent; paler areas to be seen near base of corium, on third apical portion of exocorium, and on basal portion of cuneus (the latter in some specimens with traces of orange or reddish color); membrane infumate, translucent with darker cloudings; underside of body and legs yellowish to hyaline, apices of femora and two rings on tibiae infusate.

Body glabrous, shining, punctate (including scutellum and hemelytra), rostrum reaching hind coxae; hemelytra and membrane noticeably translucent.

Genitalia: Aedeagus with a characteristic sclerotized appendage (fig. 11, *e*) beset with several teeth apically. Left clasper (fig. 11, *c*) with a protuberance over dilated base, bent internally, tapering to apex where it shows a subapical, typical spinelike projection. Right clasper small, as shown in figure 11, *d*.

Female: Length 5.6 mm., width 2.5 mm. *Head:* Width 1.1 mm., vertex 0.34 mm. Second antennal segment, length 1.8 mm.

Similar to male in color, slightly more robust.

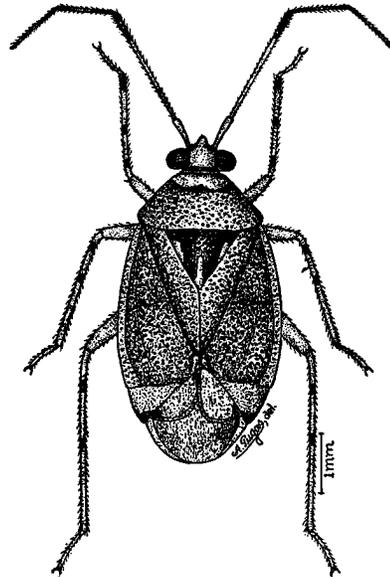


FIGURE 12.—*Deraeocoris ponapensis*, male, paratype.

Holotype, male (US), Mt. Temwetemwensekir, Ponape, 100 m., Jan. 11, 1953, J. L. Gressitt; allotype, female, Colonia, Ponape, Feb. 29, 1948, H. S. Dybas. Paratypes, seven males and 15 females. Saipan: Garapan, May 2, 1940,

K. Yasumatsu and S. Yoshimura. Truk: Mt. Teroken, Moen I., Feb. 1, 1953, J. L. Gressitt. Ponape: Agric. Exper. Sta., Colonia, cacao grove, Jan. 20, 1953, Gressitt; Mt. Temwetemwensekir, 100 m., Jan. 11, 1953, Gressitt; Mt. Kupwuriso, summit, Mar. 8, 1948, Dybas; Colonia near sea level, Feb. 29, 1948, Dybas; Hydroelectric Plant, Aug. 9, 1946, H. K. Townes; Peipalap Pk., June 1950, P. A. Adams; Colonia, Feb. 2, 1936, Z. Ono, Jan. 31, 1936, Ken Kuya.

DISTRIBUTION: Mariana Is. (Saipan) and Caroline Is. (Truk, Ponape).

SUBFAMILY BRYOCORINAE BAERENSPRUNG

KEY TO GENERA

1. Pronotum smooth, usually shining, sometimes rugose but never punctate; head with a distinct neck; pronotum strongly narrowed in front; hemelytra glassy..... **Felisacus**
 Pronotum punctate; head without a distinct neck; hemelytra usually opaque..... 2
2. Pronotal collar distinct not wider than width of second antennal segment but distinctly delimited from disc of pronotum; usually dark, small species....**Monalocoris**
 Pronotal collar absent, if anterior collar-like area present, then not distinctly delimited from disc of pronotum; species of medium size..... 3
3. Anterior portion of pronotum strongly raised and somewhat hooded over head; eyes small, placed at middle of head.....**Felisacoris**
 Anterior portion of pronotum not strongly raised or hooded over head; eyes placed at posterior portion of head.....**Bryocorella**

Genus **Bryocorella** Carvalho, new genus

Bryocorinae, Bryocorini. Body elongate, very finely pubescent, hemelytra narrowed posteriorly.

Head smooth, shining, about twice as wide as long, vertex slightly carinate posteriorly, sulcate or excavate at middle, frons prominent, round between antennal bases, eyes small, a little exserted; seen from side, clypeus is noticeably concave, gena very high. Rostrum extremely short reaching only apex (or slightly beyond) of anterior coxae, the first segment very thick and short, about equal in length to second, third segment very short, together with fourth about subequal in length with second or first.

Antennae inserted in front of eyes, first segment noticeably more slender on basal half, slightly bent outward, second segment a little incrassate toward apex, pubescence long (length of hairs about twice diameter of segment) and erect, third and fourth segments with approximately same thickness, also very long and erectly pubescent.

Pronotum strongly shining and coarsely punctate, convex, the lateral margins bluntly rounded, anterior and posterior margins truncate, humeral angles rounded and prominent, collar area sunk, punctate, calli shining, smooth; mesoscutum small, partially exposed; scutellum shining, moderately convex, punctate, long and finely pilose.

Hemelytra with very wide, slightly reflexed and glabrous embolium, broadest on basal fourth, clavus and corium very finely shagreened, scantily and erectly pilose, cuneus about as wide as long, the apex blunt, external portion flat or depressed at middle; membrane noticeably long and narrow, the areola small, vein reaching apical third of cuneus which is noticeably more pubescent than remainder of hemelytra.

Legs slender, tarsi and claws of the bryocorine type.

Type of genus: *Bryocorella emboliata* Carvalho, new species.

This genus belongs to the group of genera in which the rostrum reaches only to the anterior coxae or slightly beyond. The very wide embolium easily differentiates it from the others in that group.

15. *Bryocorella emboliata* Carvalho, n. sp. (figs. 13; 14, *d-f*).

Characterized by its color and male genitalia.

Male: Length 3.5 mm., width 1.3 mm. *Head*: Length 0.2 mm., width 0.6 mm., vertex 0.35 mm. *Antennae*: Segment I, length 0.3 mm.; II, 0.8 mm.; III, 0.4 mm.; IV, 0.3 mm. *Pronotum*: Length 0.5 mm., width at base 0.9 mm. *Rostrum*: Length 0.4 mm. *Embolium*: Width 0.2 mm.

Head, pronotum, and scutellum piceous, shining; eyes reddish; hemelytra black, embolium and outer portion of cuneus, hyaline, membrane infumate with paler outer margin; antennae with first segment pale (except dark inner apex), second segment black, third segment yellow, fourth segment castaneous to reddish; legs pale on femora, apex of coxae and first segment of tarsi, tibiae, base of coxae and apex of tarsi black to fuscous; first segment of rostrum black, remaining segments hyaline; underside black, shining.

Morphological characters as given for genus.

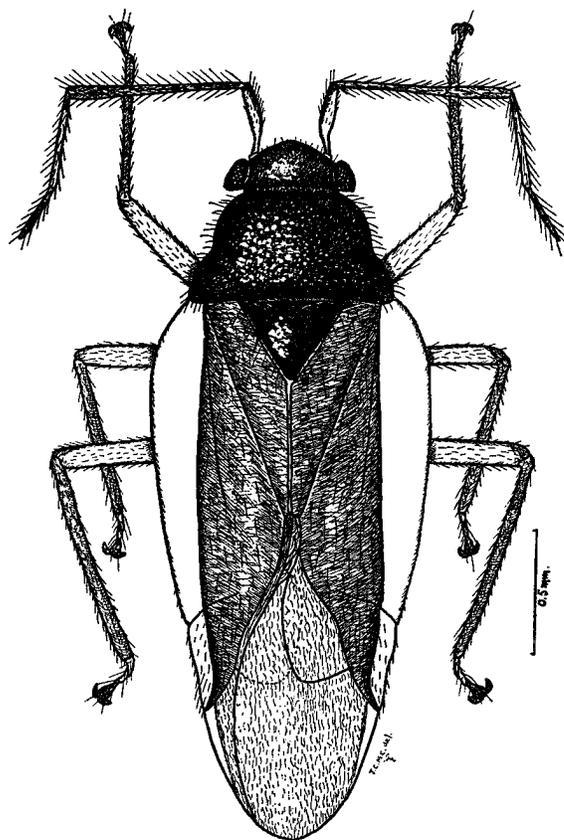


FIGURE 13.—*Bryocorella emboliata*, male, holotype.

Genitalia: Aedeagus very simple without sclerotized areas or appendages on the vesica. Left clasper (fig. 14, *d, e*) long, twisted basally, strongly bent at middle, with a characteristic laminate outgrowth near apex showing a serrate margin. Right clasper (fig. 14, *f*) long, simple, ended by a spatulate apex.

Female: Similar to male in color and dimensions.

Holotype, male (US), Mt. Tafeayat, Kusaie, Aug. 20, 1946, H. K. Townes; allotype, female (US), same data as for holotype. Paratypes, one male and one female, same data as for types.

DISTRIBUTION: Caroline Is. (Kusaie).

Genus *Felisacoris* Carvalho, new genus

Bryocorinae, Bryocorini. Very near *Felisacus* Distant but easily differentiated by raised anterior portion of pronotum which is somewhat hooded over head (fig. 14, *a*); head and neck shorter than in *Felisacus*; rostrum reaching only about middle of mesosternum.

Type of genus: *Felisacoris ponapensis* Carvalho, new species.

This genus shows most of the characters found in *Felisacus* Distant, but with the differences mentioned above. The male genitalia shows, however, marked differences in the structure of the aedeagus and shape of the claspers. The pronotum is also finely punctate.

16. *Felisacoris ponapensis* Carvalho, n. sp. (figs. 14, *a-c*; 15, *a*).

Characterized by its color, dimensions, and male genitalia.

Male: Length 3.8 mm., width 1.0 mm. *Head*: Length 0.3 mm., width 0.6 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.8 mm.; II, 1.1 mm.; III, 1.2 mm.; IV, 0.5 mm. *Pronotum*: Length 0.9 mm., width at base 1.0 mm. *Rostrum*: Length 0.7 mm.

General color greenish yellow to citrine, the hemelytra translucent; eyes, second antennal segment reddish; third and fourth antennal segments, claval commissure, and median portion of veins of membrane fuscous to brown.

Morphological characters as given for genus.

Genitalia: Left clasper smaller than the other (fig. 14, *c*), bent and somewhat twisted at middle where there are a few setae and a toothlike outgrowth. Right clasper (fig. 14, *b*) very long, narrowed at middle and curved on apical half.

Female: Length 4.1 mm., width 1.2 mm. *Antennae*: Segment I, length 0.8 mm.; II, 1.0 mm.; III, 1.1 mm.; IV, 0.4 mm. *Pronotum*: Length 1.0 mm., width at base 1.1 mm. Similar to male in color but more robust.

Holotype, male (US), Hydroelectric Plant, Colonia, Ponape, Aug. 9, 1946, H. K. Townes; allotype, female (US), Matalanim, Ponape, July 11, 1946, Townes. Paratypes, 18 males and 29 females. Ponape: Matalanim, Aug. 11, 1946, R. G. Oakley; Toloton, June 1950, P. A. Adams; Mt. Kubersoh, June 1950, Adams; Peipalap Pk., June 1950, Adams; Hydroelectric Plant, Colonia, Aug. 9, 1946, Townes; Mt. Temwetemwensekir, 180 m., Jan. 16, 1953, J. L. Gressitt; Mt. Dolennankap, Aug. 10, 1946, Townes; Nampil-Sankaku Yama, Jan. 8, 1938, T. Esaki.

DISTRIBUTION: Caroline Is. (Ponape).

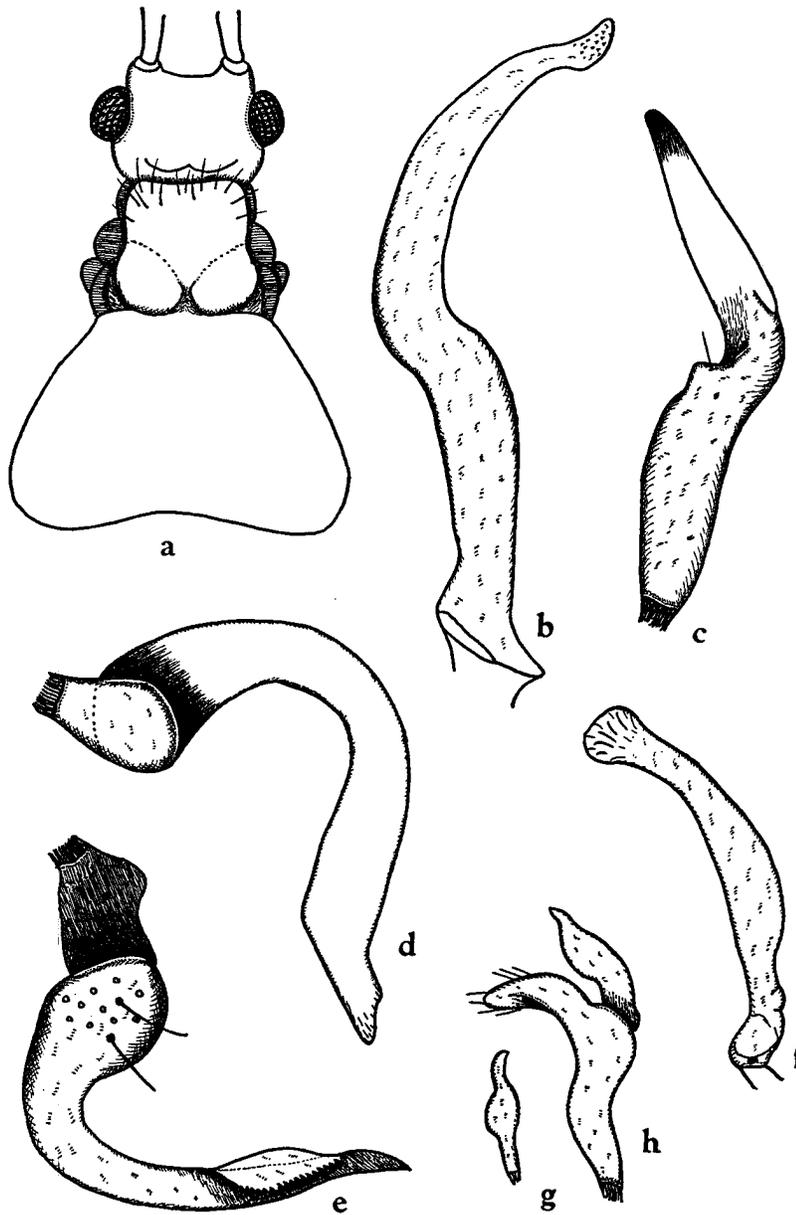


FIGURE 14.—Bryocorini species. a-c, *Felisacoris ponapensis*: a, dorsal view of head and pronotum; b, right clasper; c, left clasper. d-f, *Bryocorella emboliata*: d, e, left clasper; f, right clasper. g, h, *Monalocoris filicis*: g, right clasper; h, left clasper.

One specimen of this species is labeled Tinian I., June 9, 1946, H. K. Townes. This record is here regarded as doubtful, since it may be a mis-handling of the specimen.

Genus *Felisacus* Distant

KEY TO MICRONESIAN SPECIES OF FELISACUS

1. First antennal segment swollen subbasally..... 2
 First antennal segment cylindrical..... 3
- 2(1). First antennal segment, head, and pronotum dark brown; cuneus reddish.....
 *rubricuneus*
 First antennal segment darkened only apically, the body totally pale.....
 *crassicornis*
- 3(1). Inner portions of clavus and cuneus infuscate to brown..... *ochraceus*
 Clavus and cuneus totally pale..... *adamsi*

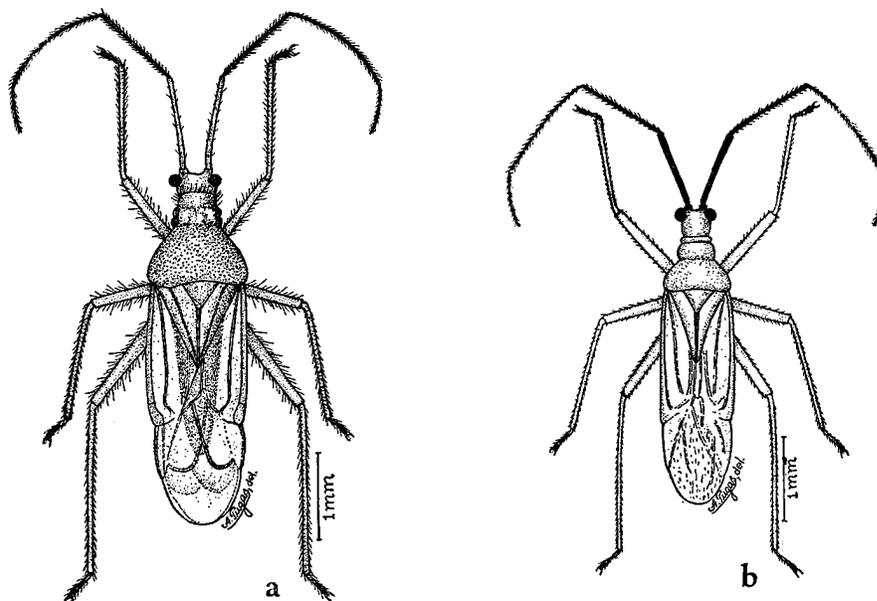


FIGURE 15.—a, *Felisacoris ponapensis*, male, paratype; b, *Felisacus adamsi*, female, paratype.

17. *Felisacus adamsi* Carvalho, n. sp. (figs. 15, b; 17, c-e).

Characterized by its color, very small eyes, and structure of male genitalia.

Male: Length 3.2 mm., width 0.8 mm. *Head*: Length 0.3 mm., width 0.4 mm., vertex 0.23 mm. *Antennae*: Segment I, length 0.7 mm.; II, 0.8 mm.; III and IV broken. *Pronotum*: Length 0.6 mm., width at base 0.7 mm. *Rostrum*: Length 1.0 mm.

General color pale yellow to citrine with reddish markings, the hemelytra translucent; A transverse fascia on frons, longitudinal fasciae of head and neck behind eyes laterally, reaching also sides of anterior portion of pronotum; antennae, apical upper surface of femora, basal upper portion of tibiae or whole tibiae (except apex) reddish; hemelytra translucent, the clavus (especially on inner margin) tending to fuscous or reddish fuscous; inner angles of cuneus reddish; membrane translucent. Some specimens

are yellow or citrine with only eyes and antennae reddish fuscous (third and fourth antennal segments brown).

First antennal segment cylindrical, diameter of eye 0.153 mm., length of postocular space of head and neck 0.170 mm., length of cuneus 0.74 mm., rostrum reaching base of hind coxae, posterior margin of pronotum very slightly curved inward.

Genitalia: Aedeagus with a characteristic sclerotized portion divided into four lobes (fig. 17, *e*). Left clasper (fig. 17, *d*) smaller than the other, with a typical subapical tooth. Right clasper (fig. 17, *c*) with a median enlarged area beset with two groups of setae, the apical half falciform and broad.

Female: Similar to male in color, slightly more robust.

Holotype, male (US), Colonia, Ponape, Aug. 20, 1946, H. K. Townes; allotype, female, Dolotomw (Toloton), Ponape, July-Aug. 1950, P. A. Adams. Paratypes, 14 males and 12 females. Ponape: Dolotomw, June-Sept. 1950, Adams.

DISTRIBUTION: Caroline Is. (Ponape).

This species is near *F. amboinae* Woodward and *F. ochraceus* Usinger but differs in the size of the eye, in the color of the body, and in the structure of the male genitalia.

18. *Felisacus crassicornis* Usinger (figs. 16; 17, *h, i*).

Felisacus crassicornis Usinger, 1946, B. P. Bishop Mus., Bull. 189:70, fig. 16.

Characterized by structure of first antennal segment, color, and male genitalia.

Male: Length 2.9 mm., width 0.8 mm. *Head*: Length 0.3 mm., width 0.5 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.6 mm.; II, 0.7 mm.; III, 0.9 mm.; IV, 0.5 mm. *Pronotum*: Length 0.7 mm., width at base 0.8 mm. *Rostrum*: Length 0.9 mm.

General color ochraceous to fulvous, eyes red, sides of hind lobe of pronotum brown, the inner, elevated portion of clavus pale brown, inner margins of corium adjacent to and beyond apex of clavus brown, membrane faintly clouded, the veins dark; costal margins white to ochraceous, disc of corium subhyaline, partially suffused with white and finely, sparsely punctured; clavus pale fulvous, subhyaline; first antennal segment ochraceous at middle, fulvous basally and black at apex, second segment narrowly black at base and thence ochraceous, becoming infuscated apically, apical segments dark brown to black; underside of body in great part testaceous, the legs pale with lightly infuscated tarsal apices.

First antennal segment incrassate at basal third, diameter of eye 0.170 mm., length of postocular espacement of head and neck 0.170 mm., length of cuneus 0.47 mm., rostrum attaining hind coxae.

Genitalia: Left clasper (fig. 17, *i*) as seen in figure. Right clasper (fig. 17, *h*) long, slender, and curved with a few setae near basal third.

Female: Similar to male in color, slightly larger. Length 3.5 mm., width 1.0 mm.

DISTRIBUTION: Mariana Is. Ten males and nine females.

S. MARIANA IS. Guam: Asan, Dec. 1945, Gressitt; Pilgo River, May 1945, G. Bohart and Gressitt; Mt. Lamlam, Oct. 1952, Krauss; Mt. Bolanos, Aug. 1952, Krauss.

This species has the aspect of *F. adamsi* but has larger eyes, a longer neck, and the second antennal segment incrassate at basal third.

HOSTS: Ferns (Swezey and Bryan).

19. *Felisacus ochraceus* Usinger (figs. 17, f, g; 18).

Felisacus ochraceus Usinger, 1946, B. P. Bishop Mus., Bull. 189:69, fig. 15.—Woodward, 1954, Pacific Science 8 (1):49, fig. 5.

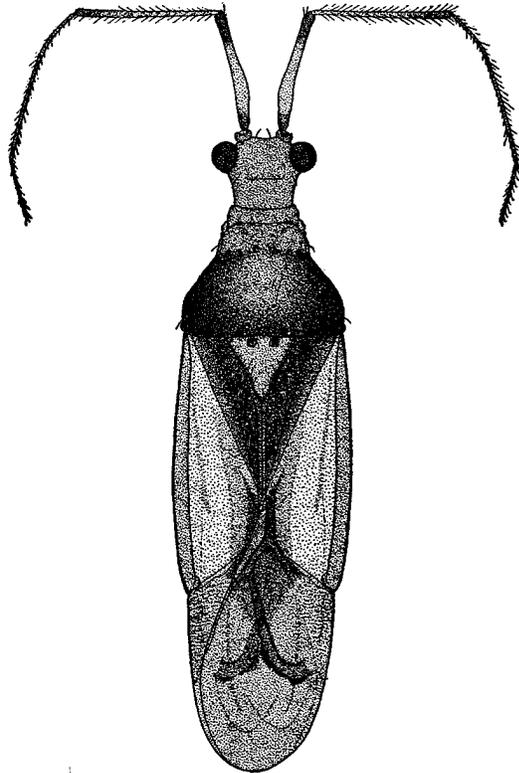


FIGURE 16.—*Felisacus crassicornis*, female, holotype (after Usinger).

Characterized by its color and male genitalia.

Male: Length 3.5 mm., width 0.9 mm. *Head*: Length 0.4 mm., width 0.5 mm., vertex 0.22 mm. *Antennae*: Segment I, length 0.8 mm.; II, 1.1 mm.; III, 1.2 mm.; IV, 0.5 mm. *Pronotum*: Length 0.6 mm., width at base 0.7 mm. *Rostrum*: Length 1.0 mm.

General color testaceous to ochraceous, hind margin of pronotum at bases of clavi, inner half of clavus, and inner margins of corium adjacent to apex of clavus and extending to cuneus brown; cuneus reddish or yellow on inner half; veins of membrane and costal margins of corium, at least apically, ochraceous; elsewhere clear to hyaline; eyes brown to black; first antennal segment white on basal fourth, fulvous apically, second segment fuscous tinged with red on apical half, third and fourth infuscated; underside of body pale yellowish testaceous, legs pale with infuscated tarsal apices.

First antennal segment cylindrical, diameter of eye 0.255 mm., length of postocular espacement of head and neck 0.187 mm., pronotum slightly curved inward at middle of posterior margin, cuneus, length 0.57 mm., rostrum reaching about middle of mesosternum.

Genitalia: Left clasper (fig. 17, g) smaller than right one with a subapical tooth. Right clasper, as shown in figure 17, f, with a group of setae ventrally.

Female: Similar to male, slightly larger. Length 4.0 mm., width 1.0 mm.

DISTRIBUTION: Mariana Is., Caroline Is. Nineteen males and 24 females.

S. MARIANA IS. SAIPAN: Matansha-Calabera, May 1940, Yasumatsu and Yoshimura. GUAM: Mt. Santa Rosa, June 1945, G. Bohart and Gressitt; Pt. Oca, May 1945, G. Bohart and Gressitt; Mt. Lamlam, Oct. 1952, Krauss; Mt. Bolanos, Sept. 1952, Krauss.

PALAU. BABELTHUAP: Gakip, July 1946, Townes; east Ngatpang, Dec. 1952, Gressitt. KOROR: Sept. 1952, Krauss; islet near Koror, Sept. 1952, Krauss. Ulebsehel (Auluptagel), Oct. 1952, Krauss. NORTHEAST URUK-THAPEL: Ngaremediu, 180 m., Dec. 1952, Gressitt.

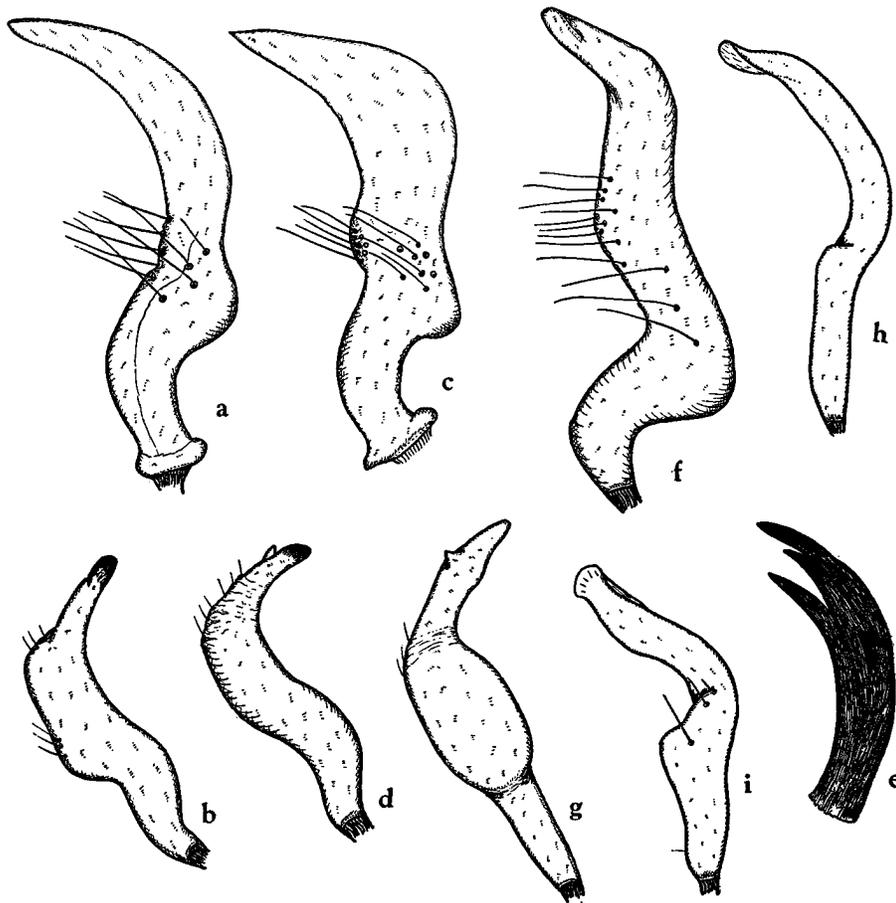


FIGURE 17.—Male genitalia. a, b, *Felisacus rubricuneus*: a, right clasper; b, left clasper. c-e, *F. adamsi*: c, right clasper; d, left clasper; e, spiculi of vesica. f, g, *F. ochraceus*: f, right clasper; g, left clasper. h, i, *F. crassicornis*: h, right clasper; i, left clasper.

YAP. Gagil District, July 1950, Goss.

CAROLINE ATOLLS. SONSOROL: Sept. 1952, Krauss.

This species is very near *F. amboinae* Woodward; but it differs in the color and length of the cuneus, in the straight posterior margin of the pronotum, and in the structure of the male genitalia.

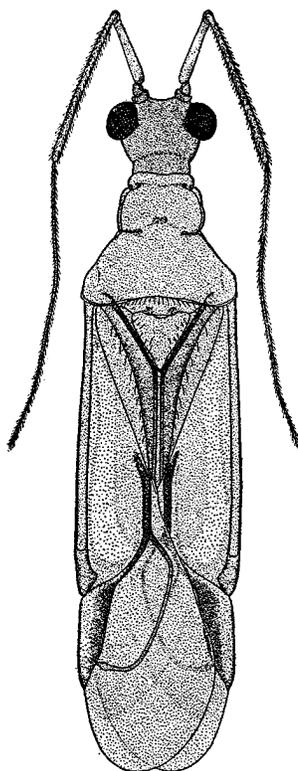


FIGURE 18.—*Felisacus ochraceus* (after Usinger).

20. *Felisacus rubricuneus* Carvalho, n. sp. (figs. 17, *a, b*; 19, *a*).

Characterized by its color and male genitalia.

Male: Length 3.4 mm., width 0.8 mm. *Head*: Length 0.3 mm., width 0.4 mm., vertex 0.23 mm. *Antennae*: Segment I, length 0.7 mm.; II, 0.9 mm.; III, 0.9 mm.; IV, 0.9 mm. *Pronotum*: Length 0.6 mm., width at base 0.7 mm. *Rostrum*: Length 1.1 mm.

Antennae with first segment brownish black to brownish testaceous, second segment hyaline to white with extreme apex fuscous to reddish, third and fourth segments fuscous, the third pale at base. Head and neck brownish testaceous, the upper surface paler, frons with reddish areas above antennal peduncles, under surface of head (clypeus and neighboring portions) including rostrum, yellowish to hyaline. Pronotum brownish testaceous to piceous laterally, median longitudinal area paler as in head, the sides and humeral angles noticeably darker; scutellum pale brownish testaceous. Hemelytra glassy translu-

cent, clavus brownish black internally to claval vein, light testaceous to translucent externally, corium brownish black on internal commissure tending to form a spot around claval apex, cuneus and extreme apex of embolium red, the inner portion of cuneus brownish red; membrane hyaline with a fuscous tinge which increases toward base, veins fuscous. Legs hyaline, the femora slightly fuscous to reddish at apices. Underside of body hyaline to light yellow.

First antennal segment incrassate at basal third, diameter of eye 0.170 mm., length of postocular espacement of head and neck 0.255 mm., length of cuneus 0.40 mm., pronotum slightly curved posteriorly at middle, rostrum reaching middle coxae.

Genitalia: Left clasper smaller than the other, as shown in figure 17, b. Right clasper falciform (fig. 17, a) with a subbasal dorsal enlarged area and two groups of setae, the apical inner portion with minute tubercles.

Female: Similar to male in color and dimensions, some specimens very slightly more robust.

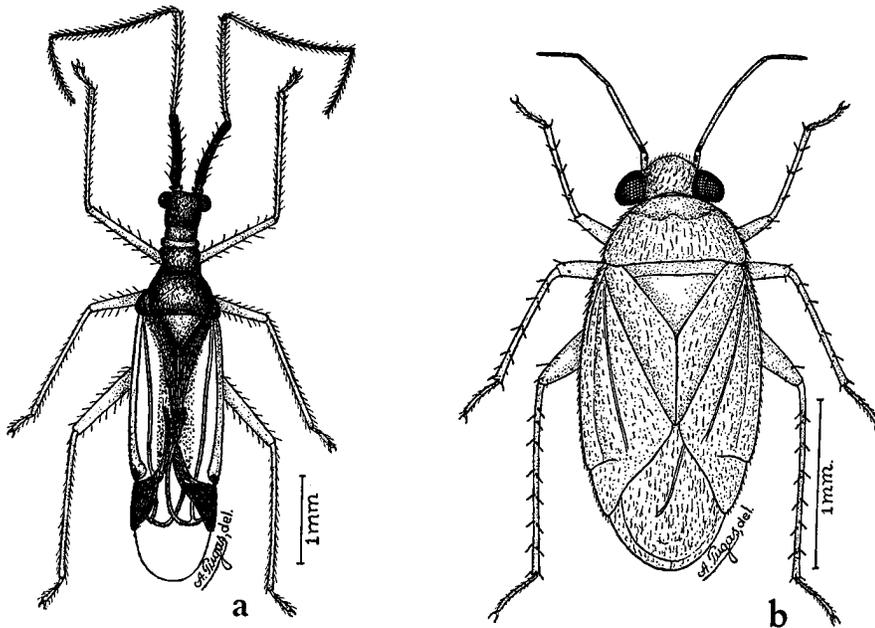


FIGURE 19.—a, *Felisacus rubricuneus*, male, paratype; b, *Campylomma lividicornis*, female.

Holotype, male (US), Mt. Tafeayat, 300-800 ft., Kusaie, Aug. 20, 1946, H. K. Townes; allotype, female (US), same data as for type. Paratypes, eight males and 18 females: Kusaie, Lele (Lelu, Lelo) I., Mar. 2, 1953, J. F. G. Clarke; Dec. 24, 1937, T. Esaki; Matanluk (Yepan), June 23, 1953, J. L. Gressitt; Mt. Tafeayat, 300-800 ft., Sept. 20, 1946, Townes.

DISTRIBUTION: Caroline Is. (Kusaie).

This species is near *F. magnificus* (Distant) but differs in the color, in the size, and in the structure of the male genitalia.

21. **Monalocoris filicis** (Linnaeus). (Figure 14, *g, h*.)*Cimex filicis* Linnaeus, 1758, Syst. Nat., ed 10, 1: 443.*Phytocoris filicis* Hahn, 1834, Wanzen. Ins. 2: 86, fig. 172.*Monalocoris filicis* Douglas and Scott, 1865, British Hem., 279, pl. 10, fig. 2.—Saunders, 1892, Hem. Het. Brit. Is., 229, pl. 21, fig. 2.—Wagner, 1952, Tierw. Deut. Blindw., 8, fig. 6.

Characterized by its color and by structure of male genitalia.

Male: Length 2.5 mm., width 1.4 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.7 mm.; III, 0.3 mm.; IV, 0.2 mm. *Pronotum*: Length 0.5 mm., width at base 0.9 mm. *Rostrum*: Length 0.6 mm.

Color brown to dark brown to ochraceous brown, shining, becoming paler toward embolium, cuneus, and membrane; head, antennae (except apices of second joint and largest part of third and fourth segments), legs (except third tarsal segment), and rostrum pale; eyes and clypeus dark brown.

Rostrum reaching posterior coxae. Genitalia with left clasper (fig. 14, *h*) bifurcate, left arm slender, right arm noticeably pointed. Right clasper (fig. 14, *g*) short, thick, nearly straight.*Female*: Similar to male in color and dimensions.

DISTRIBUTION: Africa and Mariana Is. One male.

S. MARIANA IS. GUAM: Pt. Oca, May 1945, G. Bohart and Gressitt.

This species is also known from the Palearctic Region. American records for this species are mostly referred to *M. americanus* Wagner and Slater.

SUBFAMILY PHYLINAE DOUGLAS AND SCOTT

KEY TO TRIBES

1. Pronotal collar absent.....**Phylini**
 Pronotal collar present.....**Dicyphini**

TRIBE PHYLINI DOUGLAS AND SCOTT

KEY TO GENERA

1. Length of second antennal segment less than width of head across eyes; in species in which the two are almost equal, hind femora light with dark spots..... 2
 Length of second antennal segment greater than width of head across eyes; hind femora unicolorous**Psallops**
2. Distance from lower apex of eye to buccula, seen from side, equal or less than half height of eye; hind femora usually with black spots.....**Campylomma**
 Distance from lower apex of eye to buccula, seen from side, greater than half the height of eye; hind femora without black spots.....**Tytthus**²

Genus **Campylomma** Reuter

KEY TO MICRONESIAN SPECIES OF CAMPYLOMMA

1. Second antennal segment totally black..... 2
 Second antennal segment pale or black only basally or apically..... 6

² Carvalho and Southwood have found that *Tytthus* Fieber is the correct genus to receive the Pacific species of Phylini previously included in the genus *Cyrtorhinus* Fieber.

- 2(1). Hemelytra pale, the first antennal segment with a distinct black spot on upper side *kororensis*
 Hemelytra black or with dark areas on clavus or corium or both; first antennal segment either totally pale or black..... 3
- 3(2). First antennal segment totally pale..... *ulithiensis*
 First antennal segment totally black..... 4
- 4(3). Head and scutellum pale..... *yapensis*
 Head and scutellum black or dark brown..... 5
- 5(4). Head unicolorously black; apex, outer margin of cuneus, and extreme apex of exocorium and embolium narrowly white..... *palauana*
 Head dark with ochraceous vertex; cuneus mostly pale..... *palauensis*
- 6(1). Head black at least in part..... 7
 Head pale 9
- 7(6). Second antennal segment totally pale..... *brunneicollis*
 Second antennal segment black at least on apex, base, or both..... 8
- 8(7). Hemelytra black, second antennal segment infusate apically, the first segment totally pale..... *boharti*
 Hemelytra pale, second antennal segment with black apex and base, the first segment with black spots..... *boninensis*
- 9(6). Femora entirely pale without black spots; second antennal segment very short (0.27 mm.)..... *innotata*
 Femora with black spots; second antennal segment longer..... 10
- 10(9). Second antennal segment with a black ring or black at extreme base..... 11
 Second antennal segment totally pale..... 12
- 11(10). First antennal segment totally black (except extreme apex) or with a dark ring; spots on femora large..... *ponapensis*
 First antennal segment with black spot internally or inferiorly at base of seta; spots of hind femora not as above..... *lividicornis*
- 12(10). Rostrum reaching beyond apices of hind coxae..... *pallida*
 Rostrum reaching only apices of middle coxae..... 13
- 13(12). Second antennal segment very short and slender (0.44 mm. long); spots of hind femora as illustrated (fig. 20, c)..... *breviceps*
 Second antennal segment over 0.5 mm. long; spots of hind femora not as above 14
- 14(13). Second antennal segment 0.59 mm. long; spots of hind femora as illustrated (fig. 20, l)..... *carolinensis*
 Second antennal segment 0.51 mm. long; spots of hind femora as illustrated (fig. 20, g)..... *chichijima*

22. *Campylomma boharti* Carvalho, n. sp. (fig. 20, f).

Characterized by its color and spots on hind femora.

Male: Length 2.0 mm., width 0.8 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.2 mm.; IV, 0.3 mm. *Pronotum*: Length 0.4 mm., width at base 0.7 mm. *Rostrum*: Length 0.6 mm.

General color dark fuscous to black; eyes reddish to castaneous; underside of body concolorous; antennae (except apex of second segment), rostrum (except apex), femora, and tibiae pale yellow to hyaline; femora with black spots apically, the hind pair as shown in figure 20, f; tibiae with black spines having dark spots at bases.

Rostrum reaching hind coxae.

Holotype, male (US), Chichi Jima, Bonin Is., July 10, 1951, R. M. Bohart.

DISTRIBUTION: Bonin Is. (Chichi Jima).

This species differs from other species of the area in its black color, in its small size, in that the second antennal segment is pale infuscated apically, and in the color of the posterior femora.

23. *Campylomma boninensis* Carvalho, n. sp. (fig. 20, j).

Characterized by its color and by dark markings of hind femora.

Male: Length 2.0 mm., width 0.9 mm. *Head*: Length 0.2 mm., width 0.5 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.4 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 0.6 mm.

Color pale, with head and pronotum black; extreme apex and base of second antennal segment, spot or spots at base of setae on first segment, spots on femora (hind pair as in figure 20, j), and tibial spines and spots at their bases black.

Rostrum reaching hind coxae.

Female: Similar to male in color and dimensions.

Holotype, male (US), Chichi Jima, Bonin Is., July 10, 1951, R. M. Bohart. Paratypes, male, same data as for type.

DISTRIBUTION: Bonin Is. (Chichi Jima).

This species is very near *C. brunneicollis*; but it differs in the color of the antennal segments, in the shorter second antennal segment, and in the markings of the hind femora.

24. *Campylomma breviceps* Usinger (fig. 20, c).

Campylomma breviceps Usinger, 1946, B. P. Bishop Mus., Bull. 189: 88, fig. 24.

Characterized by its color, spots of hind femora, and length of rostrum.

Male: Length 1.9 mm., width 0.8 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.4 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 0.6 mm.

General color pale yellow to hyaline translucent, the head and pronotum tending to ochraceous; spots of hind femora characteristic (as in figure 20, c), tibiae with black spines with dark spots at base.

Rostrum reaching apices of middle coxae.

DISTRIBUTION: S. Mariana Is. Three males and one female.

S. MARIANA IS. TINIAN: June 1946, Townes. GUAM: Pt. Ritidian, Mt. Santa Rosa, Pt. Oca, Agana, 1945, G. Bohart and Gressitt; Mt. Lamlam, Oct. 1952, Krauss.

HOST: *Hibiscus tiliaceus* (Usinger, 1946).

This species is very near *C. carolinensis* and *C. chichijima* but differs from both in the smaller second antennal segment and in the differently marked hind femora. It differs from *C. pallida* in the much shorter rostrum.

25. *Campylomma brunneicollis* Usinger (fig. 20, e).

Campylomma brunneicollis Usinger, 1946, B. P. Bishop Mus., Bull. 189: 90, fig. 24, c.

Characterized by its color and the spots on hind femora.

Male: Length 2.9 mm., width 0.9 mm. *Head*: Length 0.1 mm., width 0.6 mm.; vertex 0.27 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.8 mm. *Rostrum*: Length 0.8 mm.

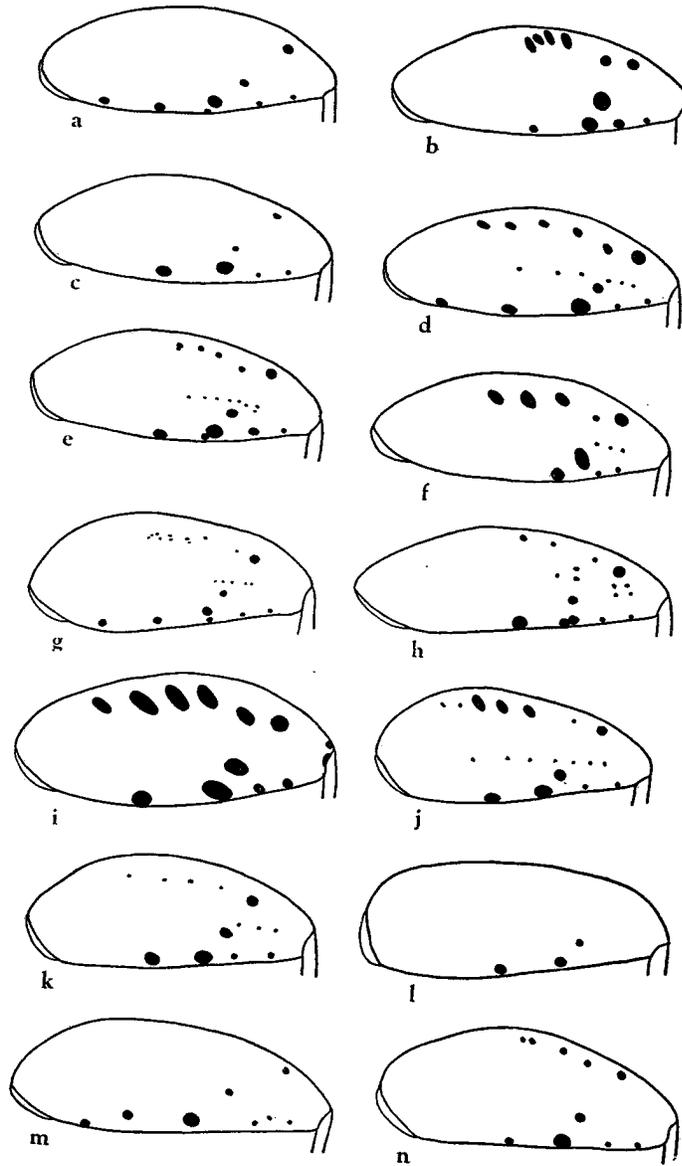


FIGURE 20.—Markings on hind femora: a, *Campylomma kororensis*; b, *C. palauensis*; c, *C. breviceps*; d, *C. ponapensis*; e, *C. brunneicollis*; f, *C. boharti*; g, *C. chichijima*; h, *C. palauana*; i, *C. yapensis*; j, *C. boninensis*; k, *C. lividicornis*; l, *C. carolinensis*; m, *C. pallida*; n, *C. ulithiensis*.

General color yellowish to ochraceous with dark brown head and pronotum; under surface of head and vertex, ochraceous to citrine; tibiae with long black spines, some with small dark spots at base, hind femora (as in figure 20, *e*) characteristic; pro- and mesopleura (in some specimens also lateral portion of abdomen) dark brown.

Color of the underside of body and legs varies from ochraceous to completely dark brown, so that the spots of femora may not be seen. The dark head with pale vertex is, however, a constant character.

Rostrum reaching the hind coxae.

DISTRIBUTION: Mariana Is. Four males and 11 females.

N. MARIANA IS. PAGAN: Songsong-Regusa, Apr. 1940, Yasumatsu and Yoshimura.

S. MARIANA IS. SAIPAN: Matansha-Calabera, May 1940, Yasumatsu and Yoshimura; Chalan Laulau, Apr. 1946, Krauss; Chalan Kanoa, Oct. 1937, Esaki. ROTA: June 1951, R. Bohart. GUAM: Mt. Alifan, Apr. 1946, Krauss; Mt. Chachod, June 1950, Adams.

HOSTS: *Scaevola koenigii* and milkweed (Usinger, 1946).

This species is very near *C. palauensis* but it differs in the totally pale second antennal segment and marks on hind femora. From *C. palauana* and *C. ponapensis* it can be readily distinguished by the color of head and vertex.

26. *Campylomma carolinensis* Carvalho, n. sp. (fig. 20, *l*).

Characterized by its color and spots on hind femora.

Male: Length 2.2 mm., width 1.0 mm. *Head*: Length 0.2 mm., width 0.6 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.4 mm., width at base 0.8 mm. *Rostrum*: Length 0.6 mm.

General color yellowish to citrine, eyes castaneous; tibiae with black spines without black spots at base; spots of posterior femora as in figure 20, *l*.

Rostrum reaching middle coxae.

Holotype, male (US), Mt. Teroken, north Moen I., Feb. 6, 1953, J. L. Gressitt; allotype, female (US), same data as for type. Paratypes, three males and three females. Truk: Moen I., Mt. Teroken, Feb. 6, 1953. Ponape: Agric. Exper. Sta., Jan. 7, 1953, Gressitt; Colonia, Jan. 1, 1938, T. Esaki.

DISTRIBUTION: Caroline Is. (Truk, Ponape).

This species is very near *C. breviceps*, from which it differs in the longer second antennal segment and in the marks of the hind femora. It is also near *C. chichijima*, from which it differs in the long second antennal segment, in the smaller size, and in the different marks on the hind femora. From *C. pallida* it can be distinguished by its rostrum reaching only to the middle coxae.

27. *Campylomma chichijima* Carvalho, n. sp. (fig. 20, *g*).

Characterized by its color, dimensions, and the spots on the hind femora.

Male: Length 2.3 mm., width 1.0 mm. *Head*: Length 1.0 mm., width 0.6 mm., vertex 0.28 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.2 mm. *Pronotum*: Length 0.2 mm., width at base 0.7 mm. *Rostrum*: Length 0.5 mm.

Color pale; eyes, spots on femora (hind pair as in figure 20, *g*), tibial spines, and spots at their bases black; head and pronotum very slightly darker.

Rostrum reaching middle coxae.

Female: Similar to male, slightly more robust.

Holotype, male (KU), Fukurozawa, Chichi Jima, Bonin Is., Aug. 6, 1935, H. Ikeda; allotype, female (KU), same data as for type. Paratype, female, same data as for type.

DISTRIBUTION: Bonin Is. (Chichi Jima).

This species is very near *C. carolinensis* but differs in the length of the second antennal segment and in the markings of the hind femora.

28. *Campylomma innotata* Carvalho, n. sp.

Characterized by totally pale color of hind femora, size, and length of rostrum.

Male: Length 1.4 mm., width 0.6 mm. *Head*: Length 0.1 mm., width 0.4 mm., vertex 0.28 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.2 mm.; III, 0.1 mm.; IV, 0.1 mm. *Pronotum*: Length 0.2 mm., width at base 0.6 mm. *Rostrum*: Length 0.4 mm.

Color pale, eyes and minute tubercles on hind tibiae dark brown.

Rostrum reaching middle coxae.

Female: Similar to male in color and dimensions.

Holotype, male (US), Koror, Palau Is., at light, Apr. 25, 1953, J. W. Beardsley; allotype, female (US), same data as for type. Paratype, female, Ngaremeskang, Babelthuap, Dec. 20, 1952, J. L. Gressitt.

DISTRIBUTION: Caroline Is. (Palau).

29. *Campylomma kororensis* Carvalho, n. sp. (fig. 20, *a*).

Characterized by color of antennae and spots on hind femora.

Male: Length 2.1 mm., width 1.0 mm. *Head*: Length 0.1 mm., width 0.6 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.8 mm. *Rostrum*: Length 0.6 mm.

Color pale; eyes, spots on first antennal segment, second segment spots on femora (hind pair as in figure 20, *a*), tibial spines and cloudings at their bases black.

Rostrum reaching middle coxae.

Female: Similar to male in color and dimensions.

Holotype, male (US), Koror, Palau Is., Mar. 23, 1953, J. W. Beardsley; allotype, female (US), same data as for type.

DISTRIBUTION: Caroline Is. (Palau).

This species is near *C. ulithiensis* but differs in the color of the first antennal segment and in the markings of the hind femora.

30. *Campylomma lividicornis* Reuter (figs. 19, *b*; 20, *k*).

Campylomma lividicornis Reuter, 1912, Ofv. F. Vet.-Soc., Forh. 54 (A): 65.

Opuna hawaiiensis Bryan and Swezey, 1926, B. P. Bishop Mus., Bull. 31: 80.

Campylomma marshallensis Usinger, 1952, Hawaiian Ent. Soc., Proc. 14 (3): 523; new syn.

Characterized by its color and spots on the hind femora.

Male: Length 2.3 mm., width 1.0 mm. *Head*: Length 0.1 mm., width 0.6 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.4 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.9 mm. *Rostrum*: Length 0.5 mm.

General color pale yellow to citrine, eyes brown to castaneous; extreme base of second antennal segment, a subapical spot or ring on first segment, spots on femora (hind pair as shown in figure 20, *k*), spines of tibiae, and spots at their bases black; third and fourth antennal segments infuscate.

Rostrum reaching hind coxae.

DISTRIBUTION: Philippine Is., Formosa, Caroline Is., Marshall Is., and Wake. Several males and females.

CAROLINE ATOLLS. MERIR: Sept. 1952, Krauss. FARAULEP: Pigue I., Sept. 1952, Krauss.

WAKE. July 1923, Bryan.

MARSHALL IS. KWAJALEIN: Ebeye, Oct. 1953, Beardsley. MAJURO: Nov. 1953, Beardsley.

This species is very near *C. ponapensis*, from which it differs in the less extensive black color of the first antennal segment (only base of setae internally or inferiorly black) and in the less numerous spots on the hind femora.

31. *Campylomma palauana* Carvalho, n. sp. (fig. 20, *h*).

Characterized by its color and by markings of hind femora.

Male: Length 2.1 mm., width 0.8 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.2 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.2 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 0.6 mm.

Color dark brown to black; base of corium and embolium, extreme apices of clavus, embolium, and cuneus pale white; legs pale except black spots and infuscate hind femora (markings as in figure 20, *h*), tibial spines and spots at their bases black.

Rostrum reaching hind coxae.

Female: Similar to male in color and dimensions.

Holotype, male (US), southwest Koror, Palau Is., light trap, Dec. 5, 1952, J. L. Gressitt. Paratypes, two males: northwest Aluptagel, Dec. 13, 1952, Gressitt; male, Koror, Feb. 7, 1954, J. W. Beardsley.

DISTRIBUTION: Caroline Is. (Palau).

This species is very near *C. palauensis* but differs in the ochraceous vertex and the different color of the hemelytra.

32. *Campylomma palauensis* Carvalho, n. sp. (fig. 20, *b*).

Characterized by its color and markings of the hind femora.

Male: Length 2.2 mm., width 0.9 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.4 mm.; III, 0.2 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 0.7 mm.

Color dark brown to black; vertex posteriorly, outer portion of clavus, outer portion of corium, embolium, and cuneus (except inner angle) pale; membrane infumate, darker basally; coxae, femora (except spots, the hind pair as in figure 20, *b*), apices of tibiae, and tarsi (except hind pair) pale. Posterior femora are darkened apically.

Rostrum reaching the hind coxae.

Female: Similar to male in color and dimensions.

Holotype, male (US), Koror, Palau Is., Nov. 30, 1947, H. S. Dybas; allotype, female (US), Ngerkabesang (Arakabesan), June 18, 1946, H. K. Townes. Paratypes, two males: Mt. Amiangal, Peleliu, Dec. 22, 1952, J. L. Gressitt; Angaur, June, 1953, J. W. Beardsley.

DISTRIBUTION. Caroline Is. (Palau).

This species is very near *C. palauana* but differs in the unicolorously black head, in the narrowly white apex and outer margin of the cuneus, and in the whitish extreme apices of the corium and the embolium.

33. *Campylomma pallida* Usinger (fig. 20, *m*).

Campylomma pallida Usinger, 1946, B. P. Bishop Mus., Bull. 189: 89, fig. 24, *b*.

Characterized by its color, spots on hind femora, and length of rostrum.

Male: Length 2.2 mm., width 1.1 mm. *Head*: Length 0.1 mm., width 0.6 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.4 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.4 mm., width at base 0.9 mm. *Rostrum*: Length 1.0 mm.

General color pale testaceous to ochraceous; tibiae with black spines without black spots at base, the spots of hind femora characteristic (as in figure 20, *m*).

Rostrum reaching apices of hind trochanters (male), about level of terebra (female).

DISTRIBUTION: Mariana Is. (Guam). One male and three females.

S. MARIANA IS. TINIAN: June 1946, H. K. Townes.

HOSTS: *Messerschmidia* sp. (Usinger) and ferns (Bryan).

This species differs from other pale species in the length of the rostrum (reaching beyond apices of hind coxae) and in the markings on the hind femora.

34. *Campylomma ponapensis* Carvalho, n. sp. (fig. 20, *d*).

Characterized by its color and spots on hind femora.

Male: Length 2.4 mm., width 1.0 mm. *Head*: Length 0.1 mm., width 0.6 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.9 mm. *Rostrum*: Length 0.6 mm.

General color yellowish fuscous with paler head; eyes castaneous; antenna with a ring on first segment and extreme base of second segment black; apices of second, third, and fourth segments infusate; underside of body concolorous; apex of rostrum, spots of femora (hind pair as shown in figure 20, *d*) and spines of tibiae and spots at their bases black.

Rostrum reaching hind coxae.

Holotype, male (US), Agric. Exper. Sta., Colonia, Ponape, Jan. 6, 1953, J. L. Gressitt; allotype, female (US), same data as for type. Paratypes, three males, Agric. Exper. Sta., Mt. Temwetemwensekir, Ponape, Jan. 1952, J. L. Gressitt.

DISTRIBUTION: Caroline Is. (Ponape).

This species is very near *C. lividicornis* but differs in the more extensive black area on the first antennal segment (the whole segment except extreme apex or a median ring black) and in the more numerous black spots on the hind femora.

35. *Campylomma ulithiensis* Carvalho, n. sp. (fig. 20, *n*).

Characterized by the color and spots of the hind femora.

Male: Length 2.2 mm., width 0.9 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.4 mm.; III, 0.2 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 0.8 mm.

Color pale; eyes, second antennal segment (also third and fourth segments), spines of tibiae, and spots on femora (hind pair as in figure 20, *n*) black.

Rostrum reaching posterior coxae.

Female: Similar to male in color and dimensions.

Holotype, male (US), Falalop I., Ulithi Atoll, western Caroline Is., Apr. 30, 1952, J. W. Beardsley; allotype, female (US). Paratypes, two males and seven females, same data as for the type.

DISTRIBUTION: West Caroline Is. (Ulithi Atoll).

This species differs from other pale species in the color of the antennae and in the markings of the hind femora.

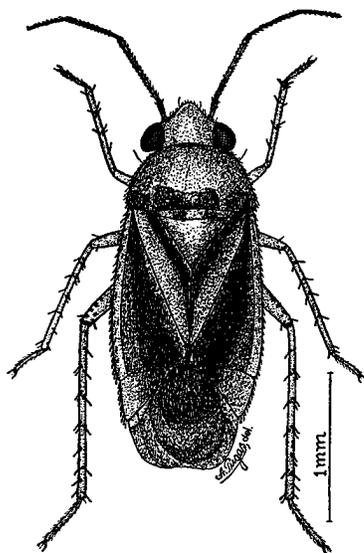


FIGURE 21.—*Campylomma yapensis*, female, paratype.

36. *Campylomma yapensis* Carvalho, n. sp. (figs. 20, *i*; 21).

Characterized by its color and spots on hind femora.

Male: Length 2.2 mm., width 1.0 mm. *Head*: Length 0.2 mm., width 0.6 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.1 mm. *Pronotum*: Length 0.3 mm., width at base 0.8 mm. *Rostrum*: Length 0.7 mm.

General color yellowish to citrine with dark fuscous areas; head, pronotum and scutellum, yellowish to citrine; eyes brown to black; antennae dark fuscous to black; hemelytra with same color as pronotum but with inner portion of clavus and endocorium fuscous to cinnamon; membrane infumate; cuneus in some specimens with an orange to reddish tinge at middle; femora with dark spots (hind pair as shown in figure 20, *i*); tibiae with black spines having black spots at base; underside of body pale yellow, apex of abdomen tending to castaneous.

Rostrum reaching hind coxae.

Holotype, male (US), Dugor-Rumu, Yap, 10 m., Nov. 29, 1952, J. L. Gressitt; allotype, female (US), same data as for type. Paratypes, 18 males and nine females. Yap: Dugor-Rumu, Mt. Matade, hill behind Yaptown, Nov., Dec. 1952, J. L. Gressitt; Ruul-Ngof, Nif, Sept. 6, 1939, T. Esaki.

DISTRIBUTION: Caroline Is. (Yap).

This species belongs to the group with black second antennal segments and is related to *C. palauensis* and *C. ulithiensis*. It differs in the pale head and scutellum and in the totally black first antennal segment.

Genus *Tytthus* Fieber

37. *Tytthus chinensis* (Stål).³ (Figure 22, *a-e*.)

Capsus chinensis Stål, 1859, Freg. Eugenies Resa, Hem. 4 (2): 258.

Cyrtorhinus elongatus Poppius, 1914, Archiv Naturgesch. A, 80 (8): 65; syn. by Carvalho and Southwood, in press.

Cyrtorhinus annulicollis Poppius, 1914, Archiv Naturgesch. A, 80 (8): 66; syn. by Carvalho and Southwood, in press.

Cyrtorhinus riveti Cheesman, 1927, Ann. Mag. Nat. Hist. IX, 19: 94.

Characterized by its small size, color, and male genitalia.

Male: Length 2.1 mm., width 0.8 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.28 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.6 mm.; III, 0.4 mm.; IV, 0.4 mm. *Pronotum*: Length 0.2 mm., width at base 0.6 mm. *Rostrum*: Length 0.7 mm.

General color pale ochraceous to stramineous with dark-brown to black areas as follows: Head (except two roundish areas on vertex, contiguous to eyes), pronotum, scutellum, antennae (except extreme base and apex of first segment), pleural portion, and genital segment; underside of body castaneous to ferrugineous; legs pale, apices of femora and hemelytra in some specimens with a reddish or castaneous tinge, bases of tibiae darkened, antennae somewhat paler toward apex.

Rostrum reaching hind coxae.

Genitalia: Aedeagus of the typical Phylini type. Left clasper as shown in figure 22, *b, c*. Right clasper (fig. 22, *d*) very small, slightly falciform. Pygophore and outer theca as in figure 22, *a, c*.

Female: Similar to male in color and dimensions, slightly more robust than male.

DISTRIBUTION: China, western Micronesia, Samoa, and Tahiti. Twenty-six males and 29 females.

BONIN IS. CHICHI JIMA: Miyano-hama, Aug. 1934, Ikeda.

S. MARIANA IS. SAIPAN: 1 to 2 miles east of Tanapag, Jan. 1945, Dybas.

TINIAN: south end, June 1946, Townes. ROTA: Nov. 1936, Esaki. GUAM: Pt. Oca, light trap, Dec. 1945, Gressitt; Agana airport, Aug. 1945, Dybas; Talofofo, Aug. 1952, Krauss.

PALAU: KOROR: June 1938, Murakami; Nov. 1947, Dybas.

YAP. YAP: Kolonia, Kanif, July 1940, Goss. EAST MAP: 1950, Goss.

CAROLINE ATOLLS. PULO ANNA: Sept. 1952, Krauss. NGULU: Oct. 1952, Krauss. FARAULEP: Sept. 1952, Krauss.

³ Carvalho and Southwood have recently found that the correct name for this species is *Tytthus chinensis* (Stål).

HOSTS: Usinger found this species sucking eggs of *Sogata ochrius* (Kirkaldy) on *Sporolobus virginicus* and *Nilaparvata lugens* (Stål) on rice [1939, Hawaiian Ent. Soc., Proc. 10 (2) : 273]. I have seen specimens from China.

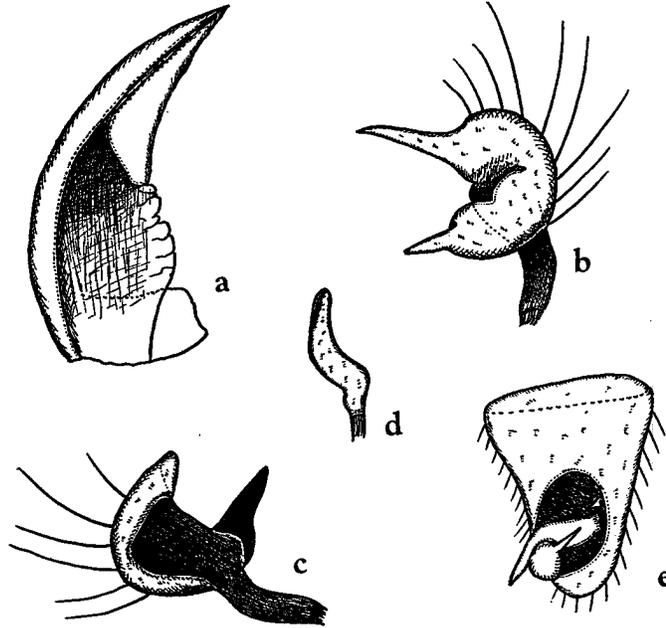


FIGURE 22.—*Tytthus chinensis*, male genitalia: a, outer theca; b, c, left clasper; d, right clasper; e, dorsal view of pygophore.

Genus *Psallops* Usinger

KEY TO MICRONESIAN SPECIES OF PSALLOPS

1. Pronotum and head ochraceous to citrine.....*ponapensis*
- Pronotum and head castaneous to brown..... 2
2. Clavus castaneous with two areas contiguous to scutellum and apex whitish...*yapensis*
- Clavus pale, sometimes slightly infuscate at middle.....*oculatus*

38. *Psallops oculatus* Usinger (figs. 23; 24, b, c).

Psallops oculatus Usinger, 1946, B. P. Bishop Mus., Bull. 189: 87, fig. 23, a, b.

Male: Length 2.4 mm., width 1.0 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.13 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.6 mm.; III, 0.2 mm.; IV, 0.1 mm. *Pronotum*: Length 0.2 mm., width at base 0.8 mm. *Rostrum*: Length 0.6 mm.

Color ferruginous on head and pronotum, the eyes and pronotal disc and pubescence brown; rostrum reddish at base, pale at middle, and brown at apex; antennae pale, ochraceous, the last two segments infuscated; mesoscutum broadly brown at basal angles and at middle; scutellum brown at middle of base; clavus and corium white with brown elevations from which the pale fulvous hairs arise; cuneus deep brown on basal half, then tinged with reddish, and white at apex; membrane most densely clouded at base,

veins posteriorly white; under surface reddish with pale base and middle of abdomen; ostiolar areas white; legs white with red or red brown apically on front femora and on apical half of hind femora except for white extreme apices; bristles of tibiae white.

Morphological characters are given for genus.

Genitalia: Left clasper as seen in figure 24, *b*. Right clasper smaller (fig. 24, *c*).

Female: Similar to male in color and dimensions.

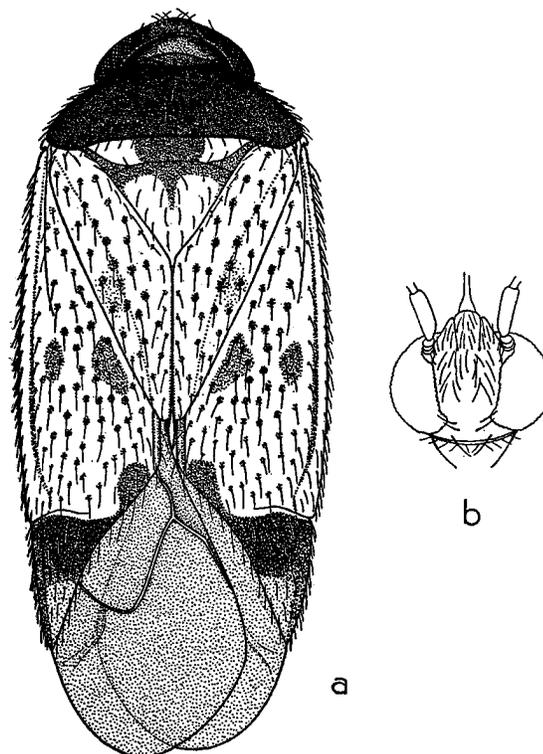


FIGURE 23.—*Psallops oculatus*, female, holotype (after Usinger).

DISTRIBUTION: Mariana Is. Three males.

S. MARIANA IS. SAIPAN: Papako (Papago) area, Jan., Feb. 1945, Dybas.

HOST: One female was taken by Usinger on *Asplenium nidus* at Machanao, Guam.

This species differs from *P. ponapensis* and *P. yapensis* in the color of the body and in the structure of the male genitalia.

The genus *Psallops* Usinger has all the fascies of the Isometopidae and will probably be placed under this taxonomic unit in the future. The absence of ocelli, however, will place the genus outside this family. The genitalia, especially the aedeagus, are of an entirely different type than that of the Phylini.

39. *Psallops ponapensis* Carvalho, n. sp. (fig. 24, a, d-g).

Characterized by its color and the structure of male genitalia.

Male: Length 2.4 mm., width 1.0 mm. *Head*: Length 0.1 mm., width 0.6 mm., vertex 0.05 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.06 mm.; III, 0.3 mm.; IV, 0.2 mm. *Pronotum*: Length 0.3 mm., width at base 0.8 mm. *Rostrum*: Length 1.1 mm.

Color ochraceous to citrine; eyes reddish to brown; hemelytra dark brown, except base and apex of corium, apices of clavus, and cuneus; membrane infumate; mesopleura and abdomen darker.

Morphological characters as in description of genus.

Genitalia: Aedeagus (fig. 24, a) with a stout basal plate. Left clasper (fig. 24, e, f) curved, with a basal outgrowth. Right clasper (fig. 24, d) smaller, also curved.

Female: Similar to male in dimensions, the color of hemelytra more distinct, brown areas as shown in figure 24, g.

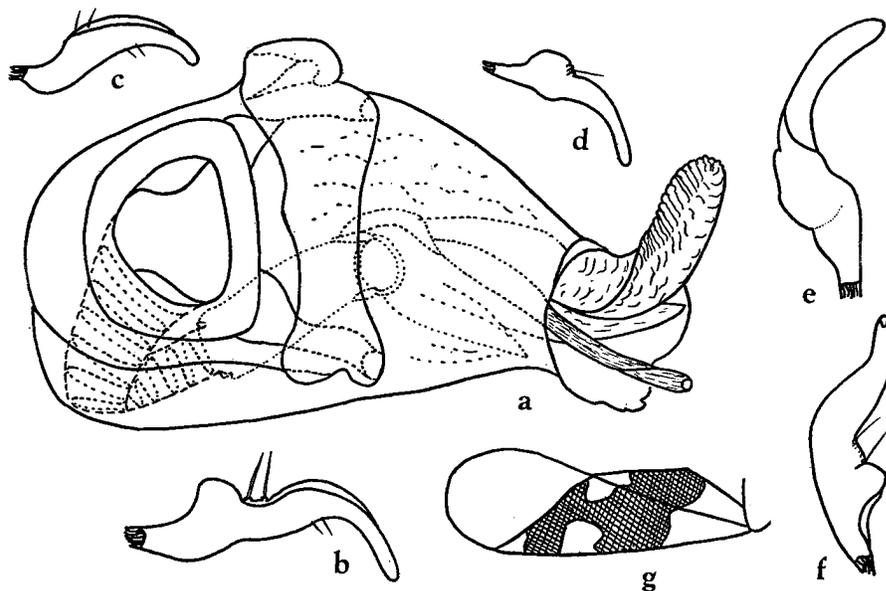


FIGURE 24.—a, d, e, f, g, *Psallops ponapensis*: a, aedeagus; d, right clasper; e, f, left clasper; g, hemelytra showing color pattern. b, c, *P. ocellatus*: b, left clasper; c, right clasper.

Holotype, male (US), Mt. Pairot, Ponape, summit, 2,000 ft., Mar. 1948, H. S. Dybas; allotype, female (US). Paratype, male, same data as for the type.

DISTRIBUTION: Caroline Is. (Ponape).

This species differs from *P. yapensis* and *P. ocellatus* in the color of the body and in the structure of the male genitalia.

40. *Psallops yapensis* Carvalho, n. sp. (fig. 25).

Characterized by its color and dimensions.

Male: Length 2.3 mm., width 0.9 mm. *Head*: Length 0.1 mm., width 0.6 mm., vertex 0.06 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.6 mm.; III and IV broken. *Pronotum*: Length 0.3 mm., width at base 0.8 mm. *Rostrum*: Length 1.1 mm.

Color castaneous, shining; scutellum, area of clavus contiguous to scutellum, apex of clavus, and spot on apex of exocorium and apex of cuneus white; basal third of hemelytra and area on corial commissure paler, apex of embolium and outer margin of cuneus reddish; membrane infuscate, mesoscutum reddish; coxae, trochanters, and base of femora pale; antennae, rostrum and tibiae pale to castaneous.

Morphological characters as in description of genus.

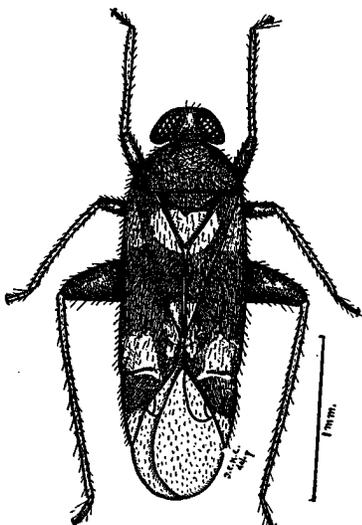


FIGURE 25.—*Psallops yapensis*, male, holotype.

Holotype, male (US), hill behind Yaptown, Yap I., light trap, Dec. 3, 1952, J. L. Gressitt.

DISTRIBUTION: Caroline Is. (Yap).

This species differs from *P. oculatus* and *P. ponapensis* in the color of the body and in the structure of the male genitalia.

TRIBE DICYPHINI REUTER

Genus *Cyrtopeltis* Fieber

KEY TO SUBGENERA OF CYRTOPELTIS

1. Upper margin of pygophore more or less truncate; process of lower margin of pygophore furcate; left clasper usually with a blade at apex.....*Engytatus*
Upper margin of pygophore acutely produced; process of lower margin of pygophore not furcate; left clasper elbowed, the apical half long and slender...*Nesidiocoris*
41. *Cyrtopeltis (Engytatus) nicotianae* (Koningsberger). (Figure 26, *a, b*)
Leptoterna nicotianae Koningsberger, 1903, 's Lands Plant. Ent., Meded. 64: 32, pl. 4, fig. 8.
Cyrtopeltis nicotianae Kirkaldy, 1908, Linn. Soc. New South Wales, Proc. 33 (2): 377; syn. by Usinger, 1946, B. P. Bishop Mus., Bull. 189: 72.
Characterized by its color, pygophore, and male claspers.

Male: Length 3.4 mm., width 0.8 mm. *Head*: Length 0.2 mm., width 0.5 mm., vertex 0.23 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.8 mm.; III, 0.8 mm.; IV, 0.3 mm. *Pronotum*: Length 0.5 mm., width at base 0.8 mm. *Rostrum*: Length 1.1 mm.

General color yellowish ochraceous with dark brown markings as follows: Eye, apex of scutellum, apical area of corium, apex of cuneus, distal portion of vein surrounding small areola, first antennal segment externally, base and apex of second segment, and apex of tarsus.

Rostrum reaching apex of hind coxae.

Genitalia: Pygophore (fig. 26, *b*) characteristic for the species. Left clasper (fig. 26, *a*) very typical, with the bladelike portion forming an angle almost straight with the body of the clasper, dorsal surface with setae. Right clasper small and simple.

Female: Similar to male in color and dimensions, only slightly more robust.

This species was reinstated by Usinger (1946, B. P. Bishop Mus., Bull. 189: 72, fig. 17), who also showed its synonymy with Kirkaldy's *Cyrtopeltis nicotianae* from Fiji. Koningsberger's species is not a synonym of *C. tenuis* Reuter as stated by China (1938, Ann. Mag. Nat. Hist. XI, 1: 604) and Knight (1938, B. P. Bishop Mus., Bull. 142: 173).

DISTRIBUTION: Java, New Zealand, New Caledonia, Fiji, and western Micronesia. Seven males and four females.

S. MARIANA IS. SAIPAN: Tanapag (Tanapaku), Nov. 1936, Esaki; Feb. 1949, Maehler.

CAROLINE ATOLLS. ULITHI: Falalop, Apr. 1952, Beardsley. FAIS: Apr. 1954, Beardsley.

HOST: *Nicotiana* (tobacco).

This species has the aspect of *Nesidiocoris tenuis* (Reuter); but it differs in the structure of the pygophore and male genitalia, in the larger size, in the length of the second antennal segment, and in the more delicate pubescence.

42. *Cyrtopeltis (Nesidiocoris) tenuis* (Reuter). (Figure 26, *c, d*.)

Cyrtopeltis tenuis Reuter, 1895, Rev. d'Ent. 14: 139.

Characterized by its color, small size, and male pygophore.

Male: Length 2.9 mm., width 0.8 mm. *Head*: Length 0.3 mm., width 0.4 mm., vertex 0.17 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.6 mm.; III, 0.6 mm.; IV, 0.3 mm. *Pronotum*: Length 0.4 mm., width at base 0.7 mm. *Rostrum*: Length 0.9 mm.

General color pale testaceous with dark-brown markings as follows: Eye, apex of clavus, area on apex of corium, apex of cuneus, first antennal segment (except extreme apex and base), base of second, third, and fourth segments, and apex of tarsus; collar and scutellum paler. Some specimens show a fuscous tinge in middle of clavus, corium, and corial commissure.

Rostrum reaching hind coxae.

Genitalia: Pygophore (fig. 26, *c*) characteristic for the species. Left clasper (fig. 26, *d*) slender, strongly bent near middle, with several setae on dorsal surface near base. Right clasper very slender and small.

Female: Similar to male in color and dimensions, slightly more robust.

The synonymy of this species was reviewed by China (1938, Ann. Mag. Nat. Hist. XI, 1: 604). The species is widely distributed. No record seems to have been made as yet of its occurrence in Europe and South America.

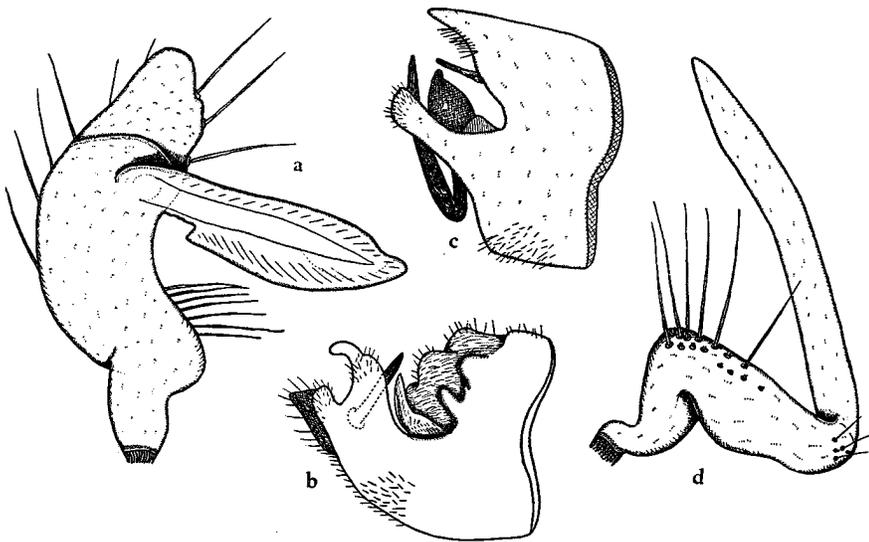


FIGURE 26.—Male genitalia. a, b, *Cyrtopeltis (Engytatus) nicotianae*: a, left clasper; b, pygophore. c, d, *C. (Nesidiocoris) tenuis*: c, pygophore; d, left clasper.

DISTRIBUTION: Madeira, India, Ceylon, Malay, Java, Sumatra, China, Madagascar, Africa, West Indies, Mariana Is., Caroline Is., and Marcus I. Nine males and 14 females.

S. MARIANA IS. SAIPAN: USCC Farm, June 1946, Oakley; Tanapaku, Feb. 1936, Esaki. TINIAN: Apr. 1946, Townes. ROTA: Sabana-Kirisuto, July 1936, Esaki. GUAM: Pt. Oca, July 1946, G. Bohart and Gressitt; Mt. Alifan, Aug. 1952, Krauss.

PALAU. KOROR: At light, May 1953, Beardsley.

CAROLINE ATOLLS. SATAWAL: Mar. 1953, Beardsley.

TRUK. TON (Tol): Mt. Unibot, Dec. 1952, Gressitt. MOEN (Wena): Mar. 1949, Potts.

PONAPE. Colonia-Jokaj, July 1939, Esaki.

MARCUS I. One male, one female, May 1952, Sakagami.

HOSTS: *Lycopersicon* (tomato) and *Nicotiana* (tobacco), (Usinger).

This species has the aspect of *Engytatus nicotianae* (Koningsberger); but it differs in the structure of the male pygophore and genitalia, in the length of the second antennal segment, in the smaller size, and in the pubescence.

SUBFAMILY PALAUCORINAE, NEW SUBFAMILY

Miridae. Claws strongly toothed subapically (fig. 28, c, d), basal portion also with a small tooth internally, the arolia free, arising between the claws,

strongly enlarged apically, usually parallel, with two small tubercular projections at base anteriorly. Ostiolar peritreme (fig. 28, *b*) situated at base on hind coxae, shagreened, the median raised area smooth and shining. Hemelytra (in the only genus known at present) without cuneus, embolium strongly reduced, membrane uniareolate. Sclerotized rings of female (fig. 28, *e, g*) small, the dorsal wall of bursa copulatrix very simple (fig. 28, *f*).

Type genus: *Palaucoris* Carvalho, new genus.

This peculiar mirid does not fit into any of the subfamilies known so far, as can be seen from the characters mentioned above. It has the general aspect of the subfamily Orthotylinae but differs in the lack of K-structure on the dorsal wall of the bursa copulatrix and in the simple sclerotized rings. The presence of a pronotal collar and the peculiar structure of claw and arolia will readily separate it from other subfamilies. It seems to be related to the subfamily Deraeocorinae in the structure of the female genitalia. Its position in the mirid system seems to be between the Deraeocorinae and Orthotylinae.

Genus *Palaucoris* Carvalho, new genus

Palaucorinae. Small elongate, long and erectly pilose. Head seen from above, about twice as wide as long, rounded in front where it is slightly foveate, vertex prominent, convex, with smooth and inclined hind margin, neck very short, eyes large, occupying sides of head, rounded externally, somewhat sinuate on upper margin; seen from side, head vertical, pointed below, very high, twice as high as long, eye placed above median line, long and erectly pilose, punctate, jugum and lorum well developed, the gena not contiguous with buccula; rostrum short, reaching apex of mesosternum, segments one and two longer and thicker than the others, clypeus flat, without a visible suture at base (fig. 28, *a*).

Antennae inserted in front of eyes, segment one thicker than the others, slightly curved outward, broadest at middle, a little shorter than width of head, second segment very slender, more than twice as long as first, third and fourth segments the most slender, the last being the longest.

Pronotum strongly shining and punctate (except above calli), somewhat sinuate and constructed behind callosities, posterior margin broadly rounded, humeral angles prominent, anterior area in front of callosities punctate (except on portion corresponding to collar, which is smooth and not bounded by visible suture); scutellum very small, acute apically, punctate; mesoscutum covered by pronotum.

Hemelytra opaque, smooth (except punctures of claval vein), lateral margins with long, fine hairs, strongly narrowed level with middle of apical portion of clavus, broadened posteriorly, cuneus absent, membrane just covering abdomen (female), uniareolate, the vein broadly rounded apically.

Pleural and external portion punctate, ostiolar peritreme prominent, shagreened on both sides with a median elevated tubercular area, situated over base of hind coxae; legs long and slender, the coxae very short, tarsi somewhat incrassate toward apex, segments subequal in length, claws strongly toothed (fig. 27), arolia arising between claws, broadest apically, usually parallel, with a spinelike structure at base.

Type of genus: *Palaucoris unguidentatus* Carvalho, new species.

The female genitalia shows a small, simple, ovoid, sclerotized ring situated in front of a more sclerotized area; the dorsal wall of the bursa copulatrix is

very simple, showing similarity to those found in certain species of the genus *Deraeocoris* Kirschbaum. The male aedeagus shows sclerotized areas on the vesica and the presence of a spiculum with minute teeth or tubercles, approaching the type found on the Orthotylinae or Mirinae.

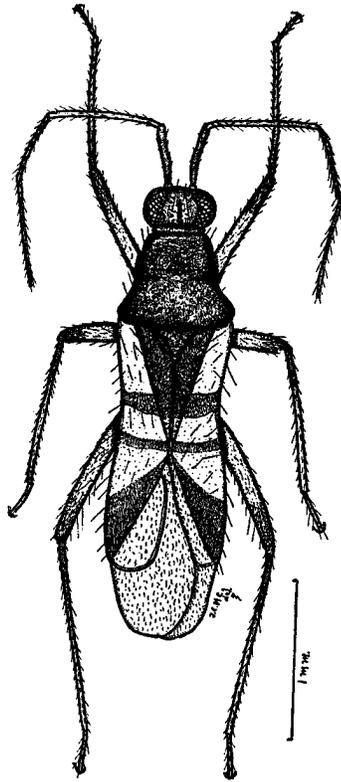


FIGURE 27.—*Palaucoris unguidentatus*, female, paratype.

43. *Palaucoris unguidentatus* Carvalho, n. sp. (figs. 27; 28; 53, e, f).

Characterized by its color, dimensions, and genitalia.

Female: Length 2.7 mm., width 0.8 mm. *Head*: Length 0.2 mm., width 0.4 mm., vertex 0.13 mm. *Antennae*: Segment I, length 0.3 mm.; II, 0.7 mm.; III, 0.5 mm.; IV, 0.8 mm. *Pronotum*: Length 0.5 mm., width at base 0.7 mm. *Rostrum*: Length 0.6 mm.

Eyes reddish, head and pronotum shining dark brown, hemelytra fuscous brown with pale, somewhat silvery areas; head pale brown, eyes reddish brown; pronotum and scutellum strongly shining dark brown; antennae yellowish, third and fourth segments fuscous; hemelytra fuscous to brown with two longitudinal pale silvery areas on internal basal portion of endocorium and two very marked transverse, oblique and roundish areas with same color as above just below apex of clavus, reaching the lateral margins, between these two areas and the longitudinal ones a transverse brown fascia level with apical portion of scutellum, this fascia with paler portion at middle; apex of membrane pale yellow; underside of body castaneous, darker transverse bands on posterior margin of

abdominal segments; legs hyaline to yellowish, femora near middle (at least hind pair) and tibiae near base with traces of red.

Morphological characters as given for genus.

Genitalia: Sclerotized rings (fig. 28, *e, g*) simple and small, dorsal wall of bursa copulatrix also very simple (fig. 28, *f*).

Male: Length 2.3 mm., width 0.5 mm. *Head*: Length 0.2 mm., width 0.4 mm., vertex 0.16 mm. *Antennae*: Segment I, length 0.4 mm.; II, 0.8 mm.; III, 0.5 mm.; IV, 0.6 mm. *Pronotum*: Length 0.5 mm., width at base 0.6 mm. *Rostrum*: Length 0.5 mm.

Head, pronotum, and scutellum reddish brown to castaneous, hemelytra similar to those of female but with reddish to orange tinge, antennae reddish, the last two joints infuscate; membrane with a transverse median pale fascia; femora toward apex and tibiae toward base reddish, coxae ochraceous.

Genitalia: Aedeagus (fig. 53, *e*) with vesica showing sclerotized portions and a central darker spiculum with minute teeth (fig. 28, *i*). Left clasper (fig. 53, *f*) curved and slender. Right clasper (fig. 28, *h*) very small, bladelike apically.

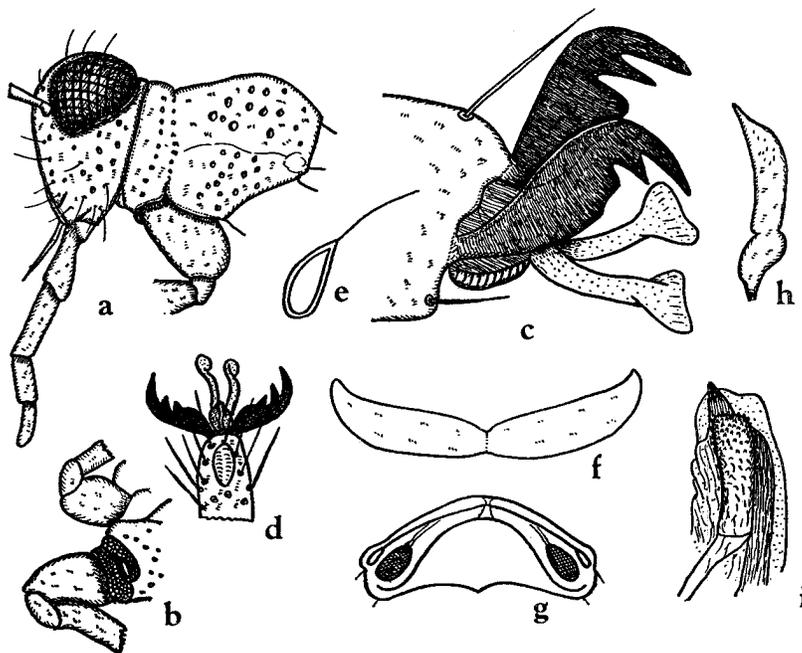


FIGURE 28.—*Palauicornis unguidentatus*: a, side view of head and pronotum; b, ostiolar peritreme; c, d, two views of claws and arolia; e, female ring; f, dorsal wall of bursa copulatrix; g, female rings; h, right clasper; i, apex of vesica.

Holotype, male (US), Ulimang, Babelthuap, Palau Is., Dec. 22, 1947, H. S. Dybas; allotype, female (US), same data as for type. Paratypes, six females: Ulimang, Babelthuap I., Dec. 15, 1947, Dybas; Peleliu I., Jan. 29, 1948, Dybas; northwest Auluptagel, Dec. 12, 1952, J. L. Gressitt.

DISTRIBUTION: Caroline Is. (Palau).

SUBFAMILY ORTHOTYLINAE VAN DUZEE

KEY TO TRIBES

1. Small dark compact species with saltatorial femora, the genae very high, equal to or more than twice height of one eye; brachypterous forms common.....**Halticini**
Species without saltatorial femora or, if so, the genae low, equal to or less than the height of one eye; brachypterous forms rare..... 2
1. Myrmecomorphic species with abdomen constricted at base.....**Pilophorini**
Species not myrmecomorphic, the abdomen not constricted at base.....**Orthotylini**

TRIBE HALTICINI KIRKALDY

Genus *Halticus* Hahn

KEY TO MICRONESIAN SPECIES OF HALTICUS

1. Anterior and median femora pale.....**insularis**
All femora black with extreme apices pale.....**tibialis**

44. *Halticus insularis* Usinger (fig. 29, e-g).

Halticus insularis Usinger, 1946, B. P. Bishop Mus., Bull. 189: 85.

Characterized by color, anterior and middle femora, long antennae, and structure of male genitalia.

Male: Length 1.9 mm., width 1.0 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.9 mm.; III, 0.6 mm.; IV, 0.6 mm.

Pronotum: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 0.5 mm.

General color black; antennae (except apex of second segment, half of third, and all of fourth), femora (hind pair only apically), tibiae and rostrum pale yellow; eyes ferruginous; membrane paler apically.

Rostrum reaching the hind coxae.

Genitalia: Left clasper (fig. 29, e, f) as in figure, with a thumblike blunt upper lobe and a digitiform pointed apex beset with dorsal setae. Right clasper (fig. 29, g) large, enlarged apically with several dorsal setae.

Female: Similar to male in color and dimensions.

DISTRIBUTION: Mariana Is. Six males and five females.

S. MARIANA IS. GUAM: Umatac, June 1945, G. Bohart and Gressitt; Pilgo River, May 1945, G. Bohart and Gressitt; Ordot, June 1945, G. Bohart and Gressitt; July 1945, R. Chaffee; Pt. Oca, Nov. 1952, Gressitt; Talofoto, June 1946, Townes; Apr. 1946, Townes.

HOSTS: Pumpkin leaves, *Ipomoea* sp. (sweet potato), and cucumber.

This species is allied to *H. tibialis* Reuter but differs in the pale color of the anterior and middle femora, in the longer antennae, and in the structure of the male genitalia.

45. *Halticus tibialis* Reuter (fig. 29, a-d).

Halticus tibialis Reuter, 1891, Rev. d'Ent. 10: 135.

Characterized by the color of two anterior pairs of femora, size, and structure of male genitalia.

Male: Length 2.1 mm., width 1.0 mm. *Head*: Length 0.1 mm., width 0.6 mm., vertex 0.40 mm. *Antennae*: Segment I, length 0.2 mm.; II, 1.2 mm.; III, 0.8 mm.; IV, 0.9 mm. *Pronotum*: Length 0.4 mm., width at base 0.7 mm. *Rostrum*: Length 0.59 mm.

Color black; antennae, tibiae (except hind pair which is infuscate to black on basal half), apical third of front femora, apical fourth of middle femora and extreme apex of hind femora, tarsi and rostrum, pale to ochraceous; claws black; apex of head brownish.

Rostrum reaching apex of middle coxae.

Genitalia: Left clasper as shown in figure 29, b-d. Right clasper (fig. 29, a) broadly widened apically with dorsal setae.

Female: Similar to male, more robust. Length 2.2 mm., width 1.1 mm., second antennal segment 1.1 mm.

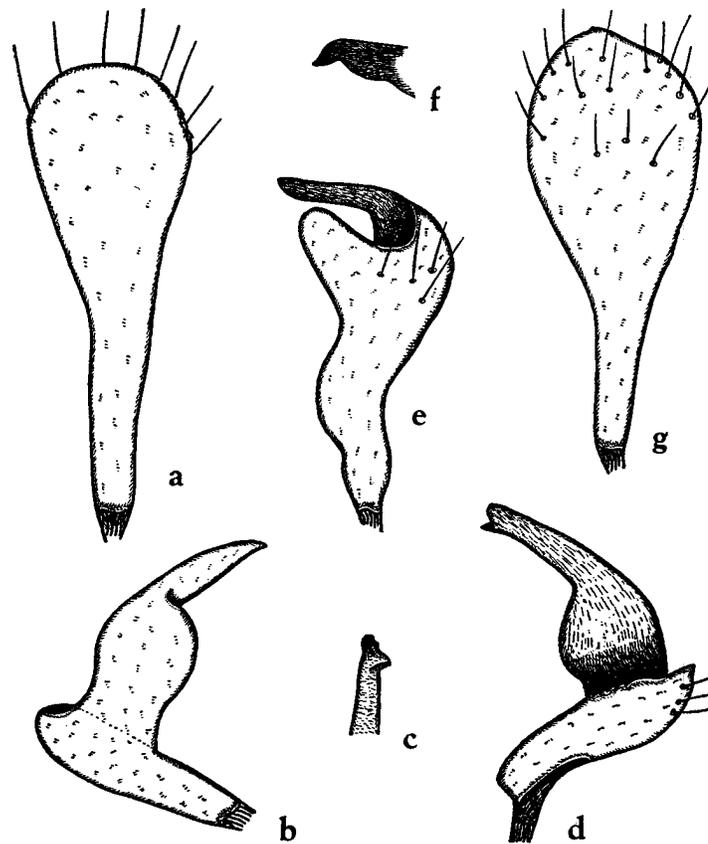


FIGURE 29.—Male genitalia. a-d, *H. tibialis*: a, right clasper; b, dorsal view of left clasper; c, apex of left clasper; d, ventral view of left clasper. e-g, *H. insularis*: e, left clasper; f, apex of left clasper; g, right clasper.

DISTRIBUTION: New Zealand, Amboina, Macassar, Africa, Ceylon, Java, Formosa, and western Micronesia. One hundred and three males and 169 females, plus 176 specimens.

S. MARIANA IS. TINIAN: Nov. 1952, Beardsley. ROTA: July 1951, R. Bohart. GUAM: Potts Junction, Oct. 1952, Krauss; Yigo, Aug. 1952, Krauss;

Pt. Oca, Tutujan, Nov. 1952, Gressitt; Agana, Sept. 1952, Krauss; Yona, Oct. 1952, Krauss; Nimitz Beach, Aug. 1952, Krauss; Mt. Lamlam, 400 m., Nov. 1952, Gressitt; Mt. Alifan, Aug. 1952, Krauss.

PALAU. BABELTHUAP: Ngiwal, Aug. 1946, Townes. KOROR: July 1953, Beardsley. ULEBSEHEL (Auluptagel): Dec. 1952, Gressitt. NGERGOI (Garakayo): Sept. 1945, Hagen. PELELIU: Mt. Amiangal, Dec. 1952, Gressitt; west coast, Feb. 1948, Dybas. ANGAUR: Feb. 1948, Dybas.

YAP. YAP I.: Aug. 1952, Krauss; Mt. Matade, 95 m., Dec. 1952, Gressitt; Kolonia, July, Aug. 1950, Goss; near Yaptown, July 1946, Townes; Gagil District, July, Aug. 1950, Goss; Ruul District, July, Aug. 1950, Goss. RUMUNG I., east and west: July, Aug. 1950, Goss. MAP I.: Oct. 1952, Krauss; east and north Map, July, Aug. 1950, Goss.

CAROLINE ATOLLS. TOBI: Sept. 1952, Krauss. SONSOROL: Sept. 1952, Krauss. NGULU: Oct. 1952, Krauss. ULITHI: July, 1946, Townes; Oct. 1952, Krauss; Mogmog, Oct. 1952, Krauss; Asor, Oct. 1952, Krauss; Fassarai, July 1946, Townes. WOLEAI: Nov. 1952, Krauss; Saliap, Nov. 1952, Krauss; Falalis, Nov. 1952, Krauss; Feb. 1953, Beardsley. IFALIK: Sept. 1952, Krauss. LAMOTREK: Sept. 1952, Krauss. SATAWAL: Sept. 1952, Krauss. NOMWIN: Fananu, Feb. 1954, Beardsley. NAMA: Oct. 1952, Beardsley. NAMOLUK: Feb. 1953, Beardsley.

TRUK. PIS: July 1946, Townes; June 1946, Townes. MOEN (Wena): Mt. Teroken, Dec. 1952, Gressitt; June 1946, Townes; Civ. Ad. Area, ex melon vine, Mar. 1949, Potts. TON (Tol): Mt. Unibot, 25 m., Dec. 1952, Gressitt. UTOT (Udot): May 1946, Townes. FEFAN: Mt. Iron, sweeping roadside vegetation, Jan. 1953, Gressitt. DUBLON: Feb. 1948, Maehler.

PONAPE. Mt. Kubersoh, July, Sept. 1950, Adams; Napali, July, Sept. 1950, Adams; Langar, July, Sept. 1950, Adams; Colonia, Hydroelectric Plant, Sept. 1946, Townes.

KUSAIE. Funaunpes, Jan. 1953, Beardsley; Lele (Lelo), Dec. 1937, Esaki, Aug. 1946, Townes; Mt. Matante, Jan. 1932, Ono.

MARSHALL IS. KWAJALEIN: Ebeye, Oct. 1953, Beardsley. LIB: Oct. 1953, Beardsley. AILINGLAPALAP: Bikajela (Bigatyelang), July 1946, Oakley; Wotje, Oct. 1953, Beardsley. NAMORIK: Sept. 1953, Beardsley. MAJURO: Ulika (Uliga), Aug. 1953, Beardsley. JALUIT: Jabwar (Jabor), Nov. 1937, Esaki; July 1946, Oakley. KILI: Oct. 1953, Beardsley. EBON: Sept. 1953, Beardsley. ARNO: Ine, July 1950, La Rivers. MILI: Oct. 1953, Beardsley; Alu, Oct. 1953, Beardsley.

HOSTS: *Phaseolus* (beans), *Ipomoea* (sweet potato), and Cucurbitaceae.

This species is one of the most common mirids in Micronesia. Usinger has seen specimens from Amboina and Macassar; and previous authors have reported the species from Africa, Ceylon, Java, and Formosa.

TRIBE ORTHOTYLINI VAN DUZEE

KEY TO GENERA

1. Head as wide as pronotum at base; frons striolate; margins of pronotum carinate with a toothlike tubercle laterally.....**Coridromoides**
Head not as wide as above; frons smooth; margins of pronotum not carinate..... 2
- 2(1). Eyes rounded behind and set in front, at or near middle of head.....**Zanchius**
Eyes relatively straight behind, contiguous or set close to the anterior margin of pronotum 3
- 3(2). Vertex distinctly carinate and bearing erect bristles; species usually ochraceous with reddish areas; antennae with bristles and erect setae.....**Pseudoloxops**
Vertex without bristles; antennae with a single type of pubescence..... 4
- 4(3). First antennal segment as long as half the width of vertex; head strongly declivous, pointed below; eyes contiguous with pronotal angles.....**Orthotylellus**
First antennal segment as long as vertex; head not as above; eyes slightly removed from anterior margin of pronotum.....**Cyrtorhinus**

Genus **Coridromoides** Carvalho, new genus

Orthotylinae, Orthotylini. Characterized by its very wide, short head, the pronotum strongly emarginate latero-anteriorly with a tubercular pointed lateral carina, and also by its very thick posterior femora.

Body short, compact, wide, scantily pilose. Head noticeably declivous, very wide, vertex prominent, carinate on each side of posterior margin, frons prominent, convex, eyes large, compressed, slightly substylate, divergent toward the antennal peduncles, inner margin of eye about level with exterior margin of anterior portion of pronotum, posterior margin truncate, smooth; seen from side the clypeus is prominent, antenna inserted in front of eye, separated from internal orbit by a space equal to thickness of first antennal segment, the latter short, more slender at base, second segment about six times longer than first, incrassate near apex, third and fourth segments equal in thickness to second, third a little longer than fourth, pubescence short, about as long as thickness of segments. Rostrum reaching hind coxae, first segment short and thick.

Pronotum shining, glabrous, coarsely punctate, collar of the depressed type, not reaching sides, anterior portion of pronotum prominent, the anterior margin slightly curved posteriorly, latero-anterior angles blunt, tumid, lateral margins very short, strongly constructed and emarginate at middle, disc declivous, posterior margin broadly rounded, humeral angles noticeably declivous ending below on a tubercular pointed carina; mesoscutum exposed, strongly declivous toward scutellum, the later noticeably tumid with strongly pointed apex.

Hemelytra somewhat translucent, embolium broadened toward the apex, cuneal incisure little declivous, membrane biareolate, the veins somewhat incrassate on their junction.

Legs short, the posterior femora noticeably enlarged, with a narrower portion or excavation near apex, claws of the orthotyline type.

Type of genus: *Coridromoides carinatus* Carvalho, new species.

This genus has a certain similarity to *Coridromius* Signoret, especially in the shape of the body and in the enlarged femora. It differs, however, in the structure of the head and the pronotum.

46. *Coridromoides carinatus* Carvalho, n. sp. (fig. 30).

Characterized by its color and male genitalia.

Male: Length 1.9 mm., width 1.0 mm. *Head*: Length 0.08 mm., width 0.8 mm., vertex 0.57 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.8 mm.; III, 0.2 mm.; IV, 0.1 mm. *Pronotum*: Length 0.8 mm., width at base 0.9 mm.

General color sordid yellow marked with fuscous, piceous eyes; a triangular area on disc and anterior corner of pronotum fuscous, the median longitudinal line and a narrow line bordering the pronotum posteriorly pale; mesoscutum, scutellum, and two basal thirds of clavus dark fuscous to piceous, the scutellum with a median apical and two basal paler areas; remaining portions of hemelytra greenish, more noticeably on external basal portion of cuneus, membrane infumate, veins dark on incrassate portion; antennae sordid yellow, apex of second segment, base and apex of third segment, and fourth segment fuscous; metepisternum with a dark spot; legs yellow, the posterior femora with five to six oblique transverse brown to black lines.

Female: Unknown.

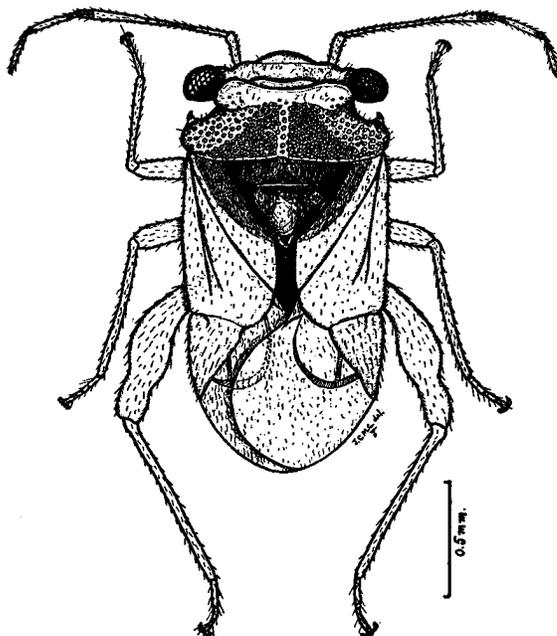


FIGURE 30.—*Coridromoides carinatus*, male, holotype.

Holotype, male (US), northwest Auluptagel, Palau, alt. 25 m., Dec. 13, 1952, J. L. Gressitt.

DISTRIBUTION: Caroline Is. (Palau).

Genus *Cyrtorhinus* Fieber

KEY TO MICRONESIAN SPECIES OF CYRTORHINUS

1. Color of hemelytra and legs chiefly fulvous; second antennal segment 1.5 mm. long **fulvus**
- Color of hemelytra and legs chiefly greenish or pale; second antennal segment 0.8 mm. long **lividipennis**

47. *Cyrtorhinus fulvus* Knight (figs. 31; 32, a-e).

Cyrtorhinus fulvus Knight, 1935, Insects of Samoa 2 (5): 205.

Characterized by its color, large size and structure of the male genitalia.

Male: Length 3.4 mm., width 1.0 mm. *Head*: Width 0.78 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.5 mm.; III, 1.3 mm.; IV, 0.6 mm. *Pronotum*: Length 0.4 mm., width at base 0.8 mm. *Rostrum*: Length 1.1 mm.

General color fulvous; antennae except apex of segment one, head except on vertex and genae and lora, pronotum except median ray on basal half of disc, mesonotum more or less, and median line of scutellum black; legs fulvous, fuscous on knees; membrane pale to dusky, cubitus fuscous.

Rostrum reaching middle coxae.

Genitalia: Aedeagus with a vesical spiculum (fig. 32, e). Left clasper (fig. 32, c) branched at middle, lower arm curved, upper lobe with dorsal setae. Right clasper (fig. 32, b, d) also branched, one lobe with setae, the other ended by a serrate margin. Pygophore view from side as in figure 32, a.

Female: Length 3.8 mm., width 1.3 mm., slightly more robust than male but very similar in structure and coloration.

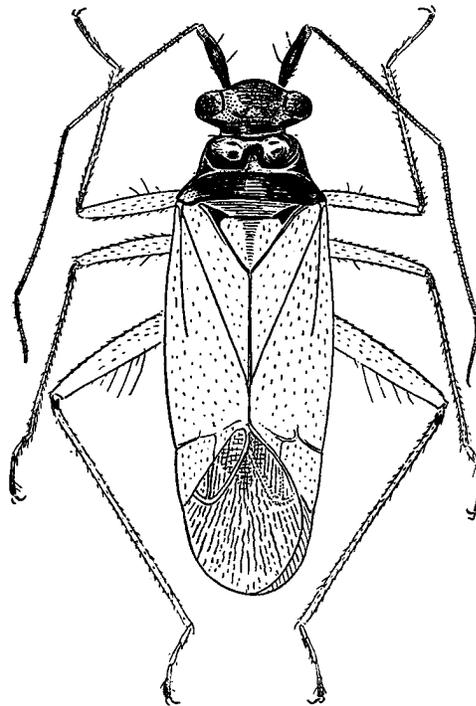


FIGURE 31.—*Cyrtorhinus fulvus* (after Zimmerman).

DISTRIBUTION: Samoa, Caroline Is. Nine males and 41 females.

PALAU. BABELTHUAP I.: Ngatpang, Dec. 1952, Gressitt; Oller, May 1953, Beardsley; Ngchesar (Kaishar), Aug. 1939, Esaki. KOROR: Nov. 1947, Dybas; March 1948, Maehler; Jan. 1953, Beardsley.

YAP. YAP I.: Kolonia, Kanif, Tomil District, July 1950, Goss.

This species is nearest to *C. lividipennis*, but it differs in the longer second antennal segment, in the more tumid black calli, in the pale areas being chiefly fulvous, and in the structure of the male genitalia.

48. *Cyrtorhinus lividipennis* Reuter (fig. 32, f-i).

Cyrtorhinus lividipennis Reuter, 1884, Ent. Tidskr. 5: 199.

Characterized by its color and male genitalia.

Male: Length 2.7 mm., width 0.9 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.8 mm.; III, 0.7 mm., IV, 0.5 mm. *Pronotum*: Length 0.3 mm., width at base 0.7 mm. *Rostrum*: Length 0.7 mm.

General color greenish yellow to ochraceous on head, pronotum, and scutellum with dark-brown markings as follows: Head (except gena, upper margin of eye, and posterior portion of vertex), pronotum (except calli, median longitudinal line, and area by humeral angle), mesoscutum and longitudinal fascia to scutellum, first antennal segment (except extreme apex and base), second segment (in some specimens paler toward apex), third and fourth segments, propleura, and eyes. Brown markings may disappear almost entirely (except on antennae).

Rostrum reaching middle coxae.

Genitalia: Aedeagus with a vesical spiculum (fig. 32, f). Left clasper (fig. 32, h, i) branched at middle, under lobe with a swelling at base, upper lobe with dorsal setae. Right clasper (fig. 32, g) also branched, the under lobe with a subapical spinelike projection.

Female: Length 3.0 mm., width 1.1 mm. *Head*: Width 0.6 mm., vertex 0.3 mm.

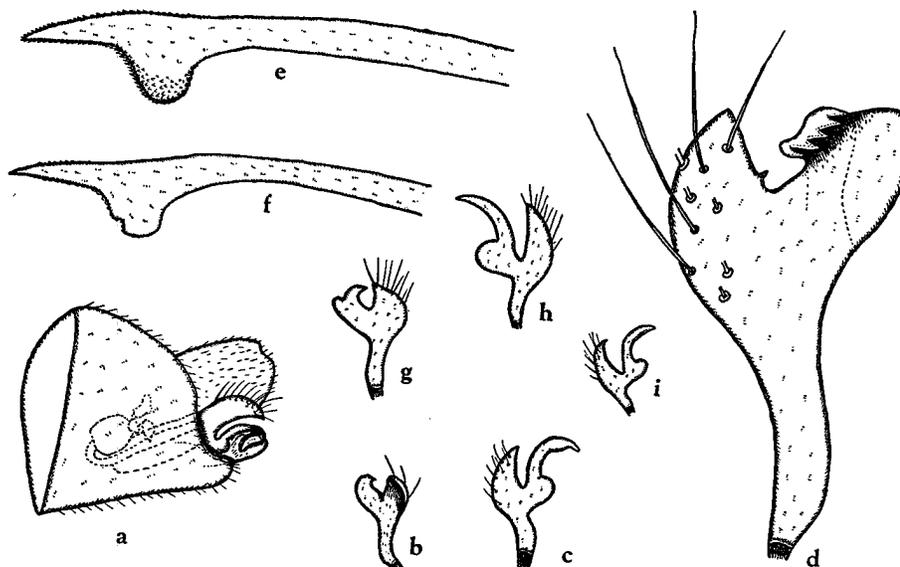


FIGURE 32.—Male genitalia. a-e, *Cyrtorhinus fulvus*: a, side view of pygophore; b, right clasper; c, left clasper; d, right clasper; e, spiculum of aedeagus. f-i, *C. lividipennis*: f, spiculum of aedeagus; g, right clasper; h, i, left clasper.

DISTRIBUTION: Great Nicobar, Formosa, Java, Ceylon, Burma, Sumatra, Japan, Philippines, China, Samoa, Mariana Is., and Caroline Is. Twenty-five males and 43 females.

S. MARIANA IS. ROTA: Feb. 1936, Esaki; June 1952, Kondo. GUAM: Pt. Oca: Agana, May-July 1945, G. Bohart and Gressitt.

PALAU. KOROR: July 1953, Beardsley. BABELTHUAP: Ulimang, Dec. 1947, Dybas; Oller, May 1953, Beardsley.

YAP. YAP I.: Oct. 1952, Krauss; hill behind Yaptown, Nov. 1952, 60 m., Gressitt; Dugor, Sept. 1939, Esaki; Kolonia, July 1950, Goss.

HOSTS: *Ipomoea* sp., rice, maize, grass, grape vines, and *Alochidion* sp. (Usinger).

This species was found associated with *Peregrinus maidis* (Ashmead) on corn [1939, Hawaiian Ent. Soc., Proc. 10 (2): 271], the eggs of the fulgorid apparently being its preferred food. It was also common on rice where it preyed upon the eggs of *Nilaparvata lugens* (Stål).

According to Usinger (1946, B. P. Bishop Mus., Bull. 189: 79), this species was introduced into the Hawaiian Islands recently in an effort to control the corn leafhopper but did not become established.

Genus *Orthotylellus* Knight

KEY TO MICRONESIAN SPECIES OF ORTHOTYLELLUS

- | | |
|-------------------------------------|--------------------|
| 1. Color of body reddish brown..... | rufescens |
| Color of body pale or brown..... | 2 |
| 2. Color brown to black..... | brunnescens |
| Color pale | pallescens |

49. *Orthotylellus brunnescens* Usinger (fig. 33, *h, i*).

Orthotylellus brunnescens Usinger, 1946, B. P. Bishop Mus., Bull. 189: 81. Characterized by its color and male genitalia.

Male: Length 2.1 mm., width 0.9 mm. *Head*: Length 0.2 mm., width 0.5 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.4 mm.; IV, 0.3 mm. *Pronotum*: Length 0.2 mm., width at base 0.7 mm. *Rostrum*: Length 1.0 mm.

General color rather uniformly brown with very obscure transverse darker stripes on head, and with paler anterior margin of pronotum, apex of scutellum, lateral portions of coria, cuneal fracture, and apex of cuneus; membrane generally clouded, the veins pale; antennae brown, the second segment broadly pale at middle; rostrum pale with black apex; legs fulvous or paler with brown bases of coxae, hind femora except at apices, and infuscated apices of tarsi; underside of body brown except for pale margins of thoracic pleurites and pale ostiolar area.

Rostrum reaching about middle of fifth visible abdominal segment.

Genitalia: Left clasper forked, as shown in figure 33, *h*. Right clasper (fig. 33, *i*) small, simple.

Female: Similar to male in color and dimensions.

DISTRIBUTION: Philippine Is., Caroline Is., Marshall Is. Ten males and 14 females.

PALAU. BABELTHUAP: Ulimang, Dec. 1947, Dybas.

YAP. Central Yap I.; central Map I.; southern Map I.; Ruul District, July 1950, Goss.

TRUK. MOEN: Mt. Teroken, Dec. 1952, Jan. 1953, Gressitt. Tol.: Mt. Unibot, Dec. 1952, Jan. 1953, Gressitt. FEFAN: Mt. Iron, Dec. 1952, Jan. 1953, Gressitt.

PONAPE. Colonia, Agric. Exper. Sta., Jan. 1953, Gressitt, Feb. 1948, Dybas; Mt. Temwetemwensekir, Feb. 1948, Dybas; Mt. Pairot, Mar. 1948, Dybas; Tolotom, June 1950, Adams; Tolenot Pk., June 1950, Adams; Mt. Kubersoh, June 1950, Adams; airfield, June 1950, Adams.

KUSAIE. Malem, Dec. 1937, Esaki.

MARSHALL IS. NAMORIK: July 1953, Beardsley. EBON: July 1953, Beardsley. ARNO: Ine, June 1950, Usinger; Aug. 1950, La Rivers.

This species differs from *O. pallescens* Usinger and *O. rufescens* Usinger in the dark color, in the more silvery pubescence, and in the structure of the male genitalia.

HOST: *Scleria margaritifera* (Usinger, 1946).

50. *Orthotylellus pallescens* Usinger (fig. 33, a-d).

Orthotylellus pallescens Usinger, 1946, B. P. Bishop Mus., Bull. 189: 80.

Characterized by its color and male genitalia.

Male: Length 1.8 mm., width 0.8 mm. *Head*: Length 0.1 mm., width 0.5 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.2 mm. *Pronotum*: Length 0.2 mm., width at base 0.6 mm. *Rostrum*: Length 1.0 mm.

General color pale brown, head fulvous, eyes reddish, callosities of pronotum fulvous, rest of upper surface pale fulvous to ochraceous, humeri still paler; membrane faintly clouded; first antennal segment brown, the remaining segments ochraceous; rostrum pale with black apex; legs pale with middle and hind femora reddish brown apically with tarsi infuscated apically; underside of body pale with a broad longitudinal rufescent stripe on either side sublaterally.

Rostrum reaching sixth visible abdominal segment.

Genitalia: Aedeagus (fig. 33, d) showing tendency to the Phylini type, the penis guard showing transition between the Phylini and true Orthotylini. Left clasper as illustrated (fig. 33, a). Right clasper as illustrated (fig. 33, b). Outer theca as in figure 33, c.

Female: Similar to male in color, very slightly more robust.

DISTRIBUTION: Mariana Is., Caroline Is. One male and four females.

S. MARIANA IS. GUAM: Pt. Oca, light trap, June 1945, G. Bohart and Gressitt.

PALAU. BABELTHUAP: East Ngatpang, Dec. 1952, Gressitt.

PONAPE. Colonia, June 1939, Esaki; Mt. Dolennankap, Aug. 1946, Townes.

This species is closely allied to *O. rufescens* but has paler coloration and differences in the male genitalia.

HOST: *Rhynchospora corymbosa* (Usinger, 1946).

51. *Orthotylellus rufescens* Usinger (fig. 33, e-g).

Orthotylellus rufescens Usinger, 1946, B. P. Bishop Mus., Bull. 189: 79.

Characterized by its color and male genitalia.

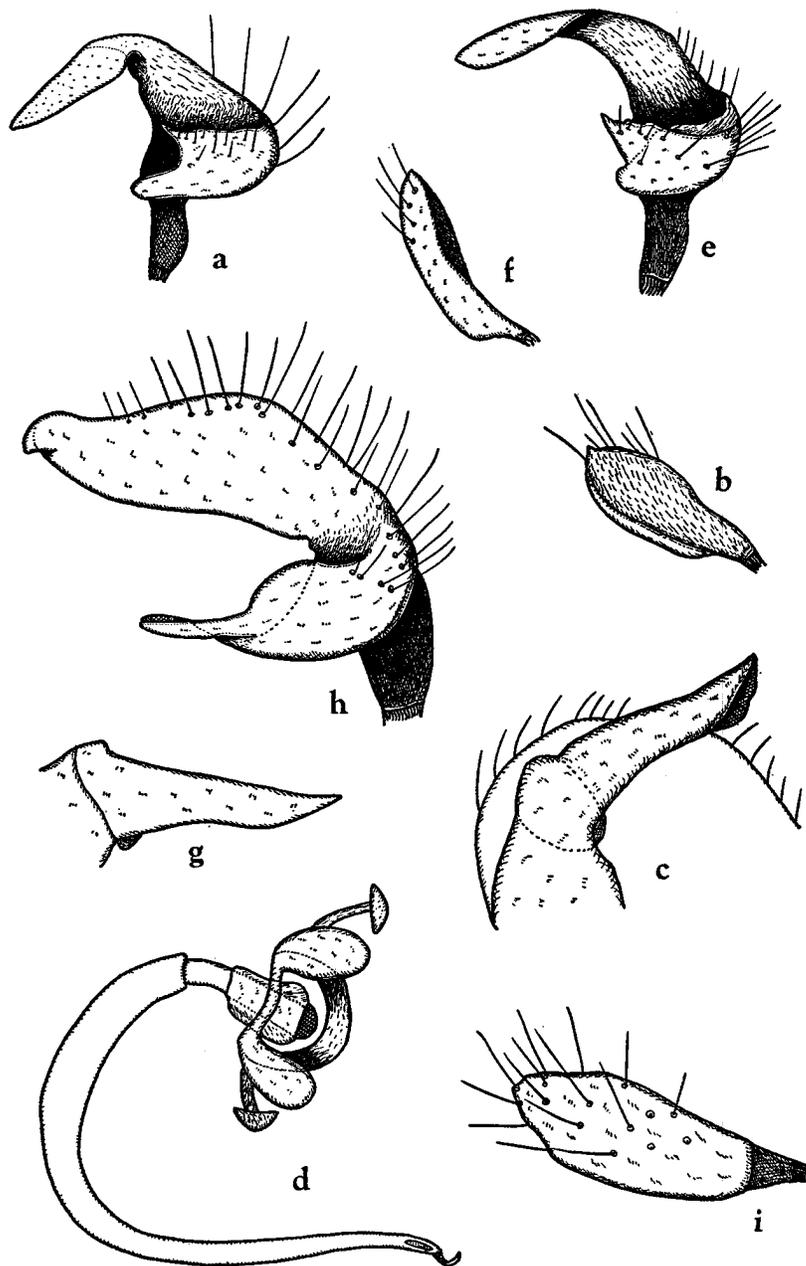


FIGURE 33.—Male genitalia. a-d, *Orithotylellus pallescens*: a, left clasper; b, right clasper; c, outer theca; d, aedeagus. e-g, *O. rufescens*: e, left clasper; f, right clasper; g, outer theca. h, i, *O. brunnescens*: h, left clasper; i, right clasper.

Male: Length 2.0 mm., width 0.8 mm. *Head*: Length 0.2 mm., width 0.5 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.1 mm.; II, 0.5 mm.; III, 0.3 mm.; IV, 0.2 mm. *Pronotum*: Length 0.2 mm., width at base 0.7 mm. *Rostrum*: Length 1.1 mm.

General color reddish brown with paler bucculae and gula, and with ochraceous humeral angles, outer margin of clavus at least basally, corium basally and laterally, and cuneus laterally (upper surface thus appearing rufescent medially and broadly pale laterally); membrane clouded, especially medially, veins reddish; first antennal segment reddish brown, the remaining segments pale; rostrum pale with black apex; front legs including coxae entirely pale except for black apical halves of tarsi; middle and hind legs pale in region of trochanters, tibiae except for small reddish-brown spots from which the pale tibial bristles arise, and on tarsi except for dark apices; elsewhere and coxae and most of femora reddish brown; underside of body broadly rufescent with pale abdominal margins.

Rostrum reaching fifth visible abdominal segment.

Genitalia: Aedeagus as in *O. pallescens*. Left clasper (fig. 33, *e*) showing differences from *O. pallescens* in apex and point of basal lobe. Right clasper (fig. 33, *f*) very similar to *O. pallescens*. Penis guard (fig. 33, *g*) well developed.

Female: Similar to male in color, very slightly more robust.

DISTRIBUTION: Mariana Is., Caroline Is. Twenty-three males and 38 females, 12 nymphs.

S. MARIANA IS. GUAM: Mt. Alifan, Apr. 1946, Krauss.

PALAU. BABELTHUAP: East Ngatpang, 65 m., Dec. 1952, Gressitt; Ulimang, Dec. 16, 1947, Dybas; Ngiwal, Dec. 1952, Gressitt; Ngaremeskang, Dec. 1952, Gressitt. KOROR: northeast corner, July 1946, Townes. NGERKABESANG: July 1946, Townes.

YAP. YAP I.: Mt. Matade, Dec. 1952, Gressitt; hill behind Yaptown, Dec. 1952, Gressitt.

HOST: Sedge (Usinger, 1946).

This species is closely allied to *O. pallescens* but has a reddish-brown color and different structure of male genitalia.

Genus *Pseudoloxops* Kirkaldy

KEY TO MICRONESIAN SPECIES OF PSEUDOLOXOPS

1. Scutellum dark brown at base, reddish at middle and pale to greenish apically **palauensis**
- Scutellum unicolorous or only extreme apex pale..... 2
- 2(1). Scutellum reddish to dark brown; clavus reddish at base and apex..... **signatus**
- Scutellum pale, clavus reddish only at extreme base..... 3
- 3(2). Reddish portion of hemelytra and embolium reaching level of apex of clavus or apex of hemelytra..... **bifasciatus**
- Reddish portion of hemelytra reaching only about level of middle portion of clavus **trukensis**

52. *Pseudoloxops bifasciatus* (Usinger), n. comb. (figs. 34; 35, *c*; 37, *d*, *e*).

Aretas bifasciatus Usinger, 1946, B. P. Bishop Mus., Bull. 189: 84, fig. 22.

Characterized by its color and male genitalia.

Male: Length 3.5 mm., width 1.2 mm. *Head*: Length 0.2 mm., width 0.7 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.4 mm.; III, 0.5 mm.; IV, 0.5 mm. *Pronotum*: Length 0.3 mm., width 1.0 mm. *Rostrum*: Length 1.1 mm.

General color flavous to ochraceous, with red as follows: On portions of clypeus, jugum, lorum, eyes and areas immediately adjacent, lateral margins of pronotum and extending over sides onto propleura, lateral margins of hemelytra on basal two-thirds including extreme outer basal angles of scutellum, bases of clavi, and embolia and outer portions of coria; pale beyond and within this red area except for a pale spot at middle and another at outer angle of each apical corial margin; veins of membrane tinged with reddish, the membrane pale but infumate. First antennal segment mostly red, the inner dorsal side more or less pale; second segment often tinged with red basally and apically; legs in great part pale but with femora often faintly brown or tinged with red subapically. Some male specimens are considerably darker, the hemelytra entirely dark reddish brown except for narrow pale inner margins and commissure of clavus, outer apical area of corium near cuneus, and cuneus except at inner base and at apex.

Rostrum reaching slightly beyond middle coxae.

Genitalia: Vesica with a distinctive sclerotized apex (fig. 37, *e*). Left clasper (fig. 35, *c*) branched near apex. Right clasper very characteristic, as shown in figure 37, *d*.

Female: Similar to male in size but usually paler in color.

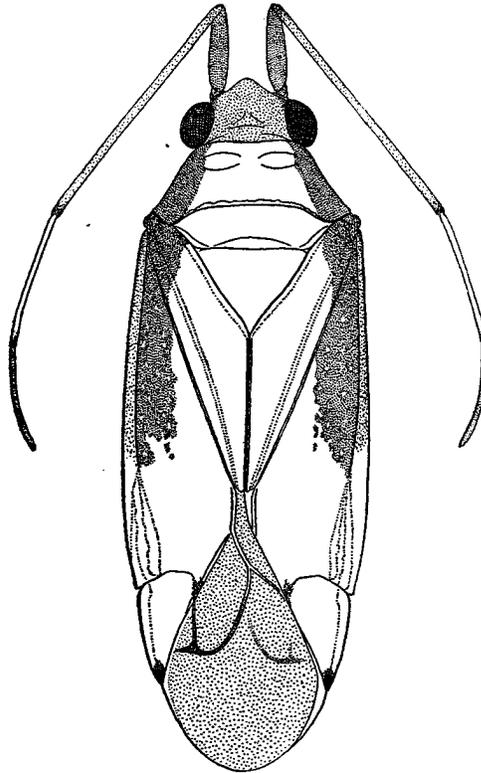


FIGURE 34.—*Pseudoloxops bifasciatus*, female, holotype (after Usinger).

DISTRIBUTION: Mariana Is. Three males and two females.

S. MARIANA IS. ROTA: Near Sabana, June 1946, Townes. GUAM: Pt. Ritidian, June 1945; Pilgo River, May 1945, G. Bohart and Gressitt; Mt. Lamlam, Oct. 1952, Krauss.

This species is closely allied to *P. trukensis*; but the reddish color of the hemelytra (corium) ends level with the apex of the clavus, it has reddish marks on the head, and the male genitalia has a different structure.

53. *Pseudoloxops palauensis* Carvalho, n. sp. (figs. 35, b; 37, b, c).

Characterized by its color and male genitalia.

Male: Length 3.5 mm., width 1.5 mm. *Head*: Length 0.2 mm., width 0.6 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.3 mm.; II, 1.5 mm.; III, 0.6 mm.; IV, 0.6 mm. *Pronotum*: Length 0.3 mm., width at base 0.9 mm. *Rostrum*: Length 1.1 mm.

Color green with red, brown, and ochraceous markings; head, pronotum and mesoscutum dark brown marked with ochraceous; extreme base of hemelytra about level with base of scutellum, the latter basally (also with brown spots), apices of clavi, apex of corium and embolium, extreme inner base and apex of cuneus, veins of membrane distally, first antennal segment, gena, clypeus, and upper margin of propleura reddish sanguineous; jugum and apex of clypeus dark brown; underside of body and rostrum ochraceous, membrane infumate; legs ochraceous, apical portion of posterior femora reddish.

Rostrum reaching hind coxae.

Genitalia: Aedeagus with a pointed spiculum (fig. 37, c). Left clasper (fig. 35, b) as figured. Right clasper (fig. 37, b) smaller, rounded apically, with seven to eight teeth on the margin beyond middle.

Female: Similar to male in color and dimensions; head, pronotum, and mesoscutum conspicuously marked with ochraceous, red and brown spots or areas, the red color more intense contiguous to eyes, two longitudinal fasciae on pronotum and posterior portion of disc.

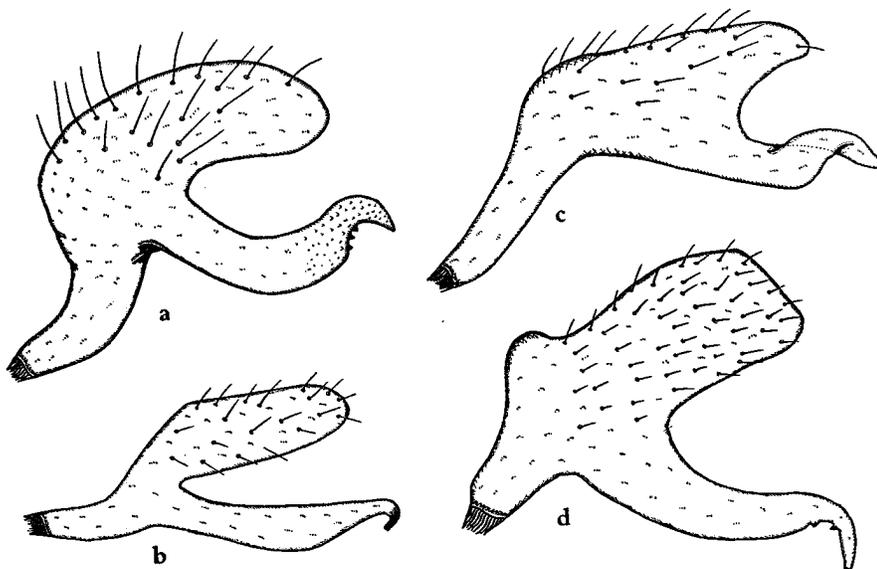


FIGURE 35.—Left clasper: a, *Pseudoloxops signatus*; b, *P. palauensis*; c, *P. bifasciatus*; d, *P. trukensis*.

Holotype, male (US), east Ngatpang, 65 m., Babelthuap I., Palau Is., Dec. 10, 1952, Gressitt; allotype, female (US), same data as for type. Paratypes, three males and three females. Palau: East Ngatpang, Babelthuap I., 65 m.,

Dec. 10, 1952, Gressitt; Koror, Mar. 19, 1954, J. W. Beardsley; Auluaptagel, Jan. 10, 1953, Beardsley.

DISTRIBUTION: Caroline Is. (Palau).

This species differs from the other Micronesian species in the color and structure of the male genitalia.

54. *Pseudoloxops signatus* (Usinger), n. comb. (figs. 35, a; 36; 37, f, g).

Aretas signatus Usinger, 1946, B. P. Bishop Mus., Bull. 189: 82, fig. 21.

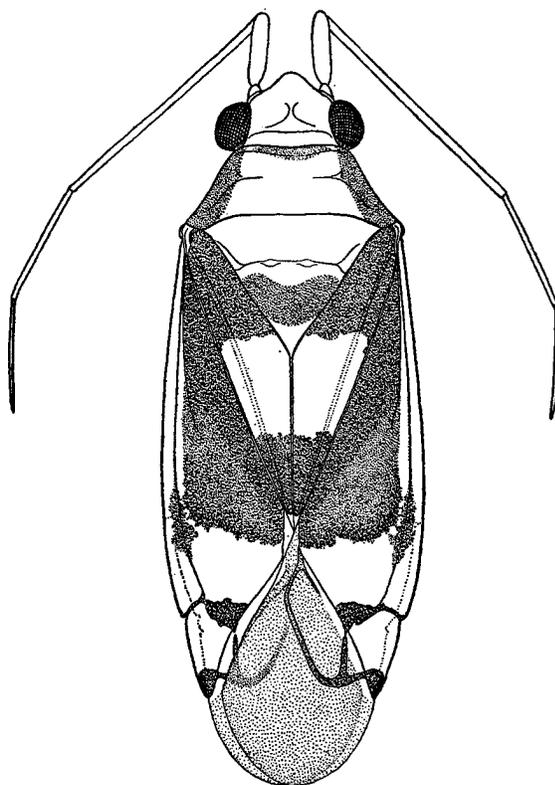


FIGURE 36.—*Pseudoloxops signatus*, female, holotype (after Usinger).

Characterized by its color and male genitalia.

Male: Length 2.9 mm., width 1.0 mm. *Head*: Length 0.2 mm., width 0.7 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.3 mm.; III, 0.5 mm.; IV, 0.5 mm. *Pronotum*: Length 0.3 mm., width at base 1.0 mm. *Rostrum*: Length 1.0 mm.

General color pale, ochraceous, eyes brown, vertex fulvous, tylus and juga reddish, lora red and brown, rostrum pale with black apex, and antennae entirely pale or first segment slightly tinged with pink; pronotum ringed with red anteriorly and distinctly brown laterally; mesonotum and narrow basal portion of scutellum ochraceous, middle of scutellum broadly brown, its apex nearly white; hemelytra very distinctly marked, the clavi red on basal third, extending nearly to level of apex of scutellum, then abruptly

ochraceous to apical fourth where they are again red to apices; entire inner areas of coria red to slightly beyond level of apex of commissure of clavus, then broadly, transversely ochraceous to front margin of cuneus, which is narrowly red laterally and broadly red medially; middle of cuneus pale, its apex red at joining of red membranous veins and dark brown at tip; costal margin of corium entirely pale, the pale area broader than embolium except at level of apex of commissure of clavus; membrane rather uniformly infuscated, with ill-defined paler area across center; underside of body and legs entirely pale except for brown claws.

Rostrum scarcely surpassing apices of middle coxae.

Genitalia: Left clasper (fig. 35, *a*) branched, the inferior arm curved and with minute tubercles apically. Right clasper characteristic, as shown in figure 37, *f*.

Female: Similar to male in color and dimensions.

DISTRIBUTION: Mariana Is. Eight males and 10 females.

S. MARIANA IS. SAIPAN: June 1951, R. Bohart; Garapan, May 1940, Yasumatsu and Yoshimura; Feb. 1936, Esaki; Jan. 1938, Aoki. ROTA: Tachicho, Feb. 1936, Esaki. GUAM: Anderson Air Force Base, Aug. 1952, Krauss; Pt. Oca, June 1945; Pt. Ritidian, June 1945, G. Bohart and Gressitt; Mt. Lamlam, Aug. 1952, Krauss.

HOSTS: *Ficus*, *Pipturus*, *Glochidion*, *Pithecolobium*, and *Premna gaudichaudii* (Usinger).

This species differs from other Micronesian species in the color and in the structure of the male genitalia.

55. *Pseudoloxops trukensis* Carvalho, n. sp. (figs. 35, *d*; 37, *a*; 38, *a*).

Characterized by its color and structure of male genitalia.

Male: Length 3.5 mm., width 1.5 mm. *Head*: Length 0.3 mm., width 0.7 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.6 mm.; III, 0.5 mm.; IV, 0.5 mm. *Pronotum*: Length 0.3 mm., width at base 0.9 mm. *Rostrum*: Length 1.0 mm.

General color yellowish to citrine or lutescent; head (except vertex and lower portion) fuscous brown; eyes reddish; first antennal segment reddish to castaneous, almost brown basally; sides of pronotum, basal third or a little more of hemelytra, including basal portion of corium and extreme basal portion of clavus, apex inner margin, internal angle and sometimes outer margin of cuneus, veins of membrane reddish brown; membrane infumate basally and along veins; underside of body and legs pale yellow to hyaline.

Rostrum reaching hind coxae.

Genitalia: Phallus with theca ending apically with two projections, vesica with a pointed spiculum. Left clasper (fig. 35, *d*) laminate and strongly bent on apical half with a somewhat serrate sclerotized portion inferiorly near apex, dorsal side with many setae. Right clasper (fig. 37, *a*) with a long subbasal arm tapering apically and a broad, rounded apex, upper surface with several short hairs, a blunt prominence seen opposite subbasal arm.

Female: Similar to male in color and dimensions, slightly more robust.

Holotype, male (US), Mt. Unibot, Tol [Ton] I., Truk, Dec. 31, 1952, J. L. Gressitt; allotype, female (US), same data as for type. Paratypes, three males and one female. Truk: Mt. Unibot, Ton I., Jan. 5, 1953, Gressitt; Civ. Ad. Area, Moen, Apr. 1, 1949, R. W. L. Potts; Toloas-Erin, Apr. 1, 1940, K. Yasumatsu and S. Yoshimura; Feb. 1954, J. W. Beardsley.

DISTRIBUTION: Caroline Is. (Truk).

This species is closely allied to *P. bifasciatus* but differs in the color of the head, in the red portion of the corium (at least on the endocorium), which ends about level with the middle of the clavus, and in the structure of the male genitalia.



FIGURE 37.—Genitalia: a, *Pseudoloxops trukensis*, right clasper. b, c, *P. palauensis*: b, right clasper; c, spiculum of aedeagus. d, e, *P. bifasciatus*: d, right clasper; e, apex of vesica. f, g, *P. signatus*: f, right clasper; g, apex of smaller arm of left clasper, view from side.

Genus *Zanchius* Distant

KEY TO MICRONESIAN SPECIES OF ZANCHIUS

- | | | |
|-------|--|---------------------|
| 1. | Color totally pale | 2 |
| | Antennae with dark rings | 3 |
| 2(1). | Clavus tinged with green, corium with greenish punctures and areas..... | <i>virescens</i> |
| | Clavus and corium totally pale..... | <i>piperi</i> |
| 3(1). | First antennal segment with a longitudinal black fascia, second segment 1.0 mm. long | <i>carolinensis</i> |
| | First antennal segment totally pale, second segment 1.4 mm. long..... | <i>fragilis</i> |

56. *Zanchius carolinensis* Carvalho, n. sp. (figs. 38, b; 39, a, b; 41, e, f).

Characterized by length of antennae, pronotum and cuneus, color of first antennal segment, and male genitalia.

Male: Length 2.3 mm., width 0.7 mm. *Head*: Length 0.2 mm., width 0.5 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.255 mm.; II, 1.062 mm.; III, 0.6 mm.; IV, 0.7 mm. *Pronotum*: Length 0.3 mm., width at base 0.6 mm. *Rostrum*: Length 1.0 mm. *Cuneus*: Length 0.382 mm.

General color greenish yellow to yellow citrine; first antennal segment apically (sometimes also a longitudinal stria), subbasal and median rings of second antennal

segment, and third and fourth segments fuscous to black; apices of tarsi fuscous.

Rostrum reaching hind coxae.

Genitalia: Aedeagus with a typical sclerotized spiculum on vesica (fig. 41, f). Left clasper complex, with a tooth on basal third, as seen in figure 39, a, b. Right clasper smaller, twisted at middle, ending with a few minute teeth (fig. 41, e).

Female: Similar to male in color and dimensions.

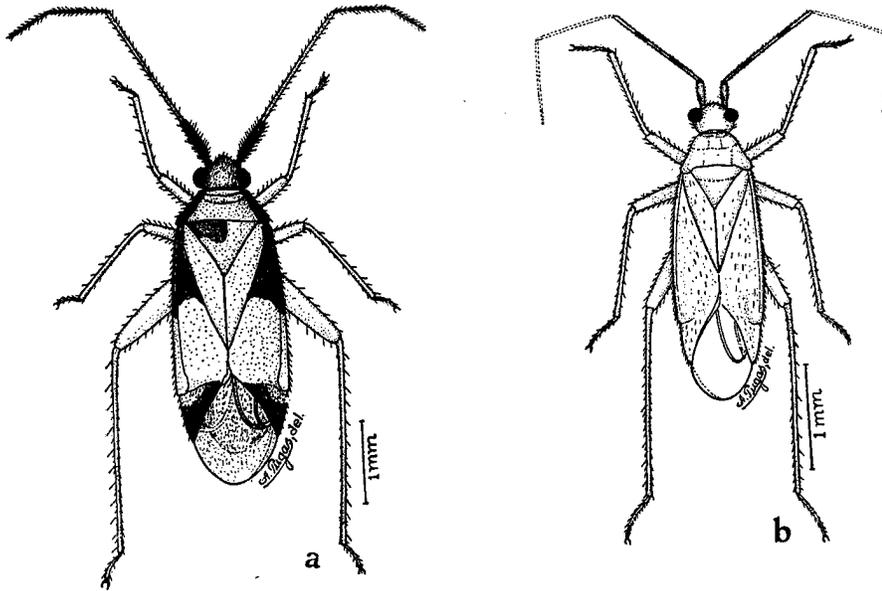


FIGURE 38.—a, *Pseudoloxops trukensis*, male, paratype; b, *Zanchius carolinensis*, female, paratype.

Holotype, male (US), Mt. Iron, Fefan I., Truk, Jan. 31, 1953, J. L. Gressitt; allotype, female (US), same data as for type. Paratypes, 23 males and 10 females. Palau: Aimelik, Babelthuap I., Apr. 20, 1954, J. W. Beardsley; Angaur, Jan. 21, 1953, Beardsley. Truk: Ton (Tol) I., Sabote-Epin, Pata, Apr. 9, 1940, K. Yasumatsu and S. Yoshimura; Fefan I., Mt. Iron, Jan. 31, 1953, Gressitt; Moen I., Mt. Teroken, Feb. 1, 1953, Gressitt; Dublon I., May 28, 1946, H. K. Townes. Ponape: Matalanim Plantation, June 1950, P. A. Adams; Colonia, Jan. 8, 1938, T. Esaki; Kusaie, Malem, Mar. 17, 1953, J. F. G. Clarke.

DISTRIBUTION: Caroline Is. (Palau, Truk, Ponape, Kusaie).

HOST: *Macaranga carolinensis* (Truk, Gressitt).

57. *Zanchius fragilis* Usinger (figs. 39, d; 40; 41, a, b).

Zanchius fragilis Usinger, 1946, B. P. Bishop Mus., Bull. 189: 76, fig. 20.

Characterized by color of antenna and by male genitalia.

Male: Length 3.4 mm., width 0.5 mm. *Head*: Length 0.2 mm., width 0.5 mm., vertex 0.28 mm. *Antennae*: Segment I, length 0.410 mm.; II, 1.400 mm.; III, 0.7 mm.; IV, 0.6

mm. *Pronotum*: Length 0.4 mm. width at base 0.7 mm. *Rostrum*: Length 1.1 mm. *Cuneus*: Length 0.51 mm.

General color pale testaceous to greenish yellow, translucent; eyes, extreme apex of first antennal segment, at basal fourth and slightly beyond middle of second segment, base of third segment, apex of rostrum and apices of claspers fuscous to brown.

Rostrum surpassing hind coxae.

Genitalia: Vesica with typical sclerotized appendages (fig. 41, b). Left clasper (fig. 39, d) very long and slender. Right clasper (fig. 41, a) with a spinelike projection on its median inferior portion.

Female: Similar to male in color and dimensions.

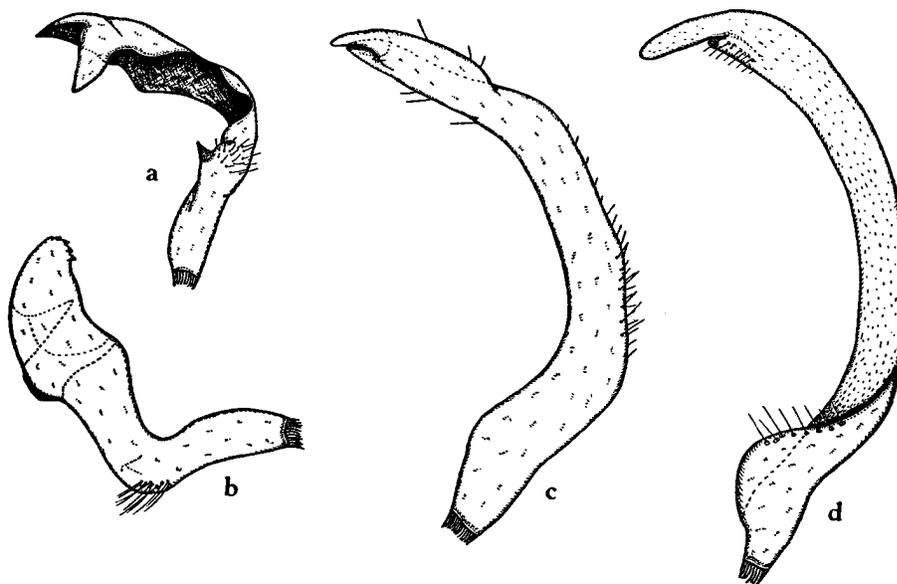


FIGURE 39.—Left clasper: a, b, *Zanchius carolinensis*; c, *Z. piperi*; d, *Z. fragilis*.

DISTRIBUTION: Mariana Is. Ten males and eight females.

S. MARIANA IS. ROTA: Songsong, Apr. 1940, Yasumatsu and Yoshimura. **GUAM**: Mt. Aluton, June 1946, Townes; Pilgo River, June 1945, G. Bohart and Gressitt; Asan, Dec. 1945, Gressitt, Agat, Pago, and southeast coast, June 1945, G. Bohart and Gressitt.

HOSTS: *Macaranga*, *Ipomoea*, *Terminalia*, and *Hibiscus*.

This species is very near to *Z. carolinensis* but differs in the longer antennal segments, in the much longer pronotum, in the longer cuneus, in the color of the first antennal segment (pale), and in the structure of the male genitalia.

58. *Zanchius piperi* Usinger (figs. 39, c; 41, c, d).

Zanchius piperi Usinger, 1946, B. P. Bishop Mus., Bull. 189: 77, fig. 20, c.

Characterized by its color and male genitalia.

Male: Length 2.8 mm., width 1.0 mm. *Head*: Length 0.2 mm., width 0.5 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.2 mm.; II, 1.1 mm.; III, 0.6 mm.; IV, 0.6 mm. *Pronotum*: Length 0.3 mm., width at base 0.6 mm. *Rostrum*: Length 1.1 mm.

General color pale testaceous; eyes and apices of claspers brown.

Rostrum reaching well beyond apices of hind coxae.

Genitalia: Aedeagus with a characteristic spiculum (fig. 41, *d*). Left clasper (fig. 39, *c*) long and slender with a somewhat forked apex. Right clasper (fig. 41, *c*) strongly curved at middle and basally, ending with two acute points.

Female: Similar to male in color and dimensions.

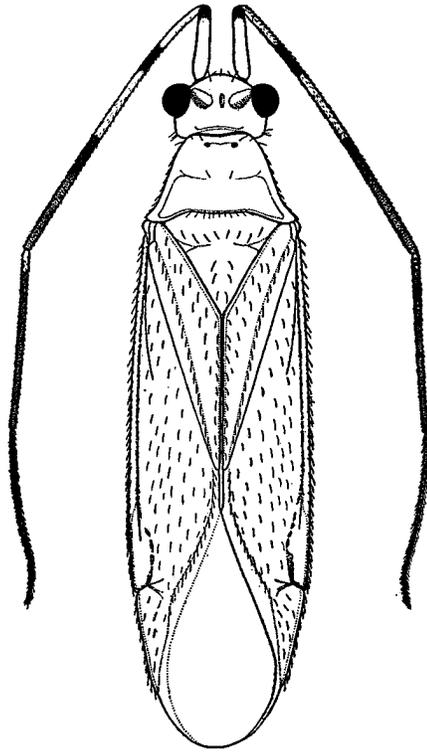


FIGURE 40.—*Zanchius fragilis* (after Usinger).

DISTRIBUTION: S. Mariana Is. (Guam). No specimens were collected during the present survey.

HOST: *Piper guahamense* (Usinger).

This species differs from *Z. fragilis* and *Z. carolinensis* in the color of the antennae and in the structure of the male genitalia.

59. *Zanchius virescens* Usinger.

Zanchius virescens Usinger, 1946, B. P. Bishop Mus., Bull. 189: 78, fig. 20, *d*.

Characterized by its color and structure of male genitalia.

Male: Length 3.5 mm., width 1.0 mm. *Head*: Length 0.2 mm., width 0.6 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.3 mm.; II, 1.5 mm.; III, 0.8 mm.; IV, 0.6 mm. *Pronotum*: Length 0.4 mm., width at base 0.8 mm. *Rostrum*: Length 1.3 mm.

General color pale, whitish ochraceous with apex of rostrum and processes of aedeagus brown; hemelytra subhyaline spotted with numerous small white punctures apically and sublaterally on corium and near base of membranal cells; clavus tinged with green at middle of basal half; corium broadly covered with small green punctures on basal half except at extreme base, with a broad green area beyond middle, another at apex, and two large green areas in membranal cell; cuneus clear, hyaline, with testaceous margin and green apex; membrane outside of cells clear hyaline.

Rostrum reaching well beyond apices of hind coxae.

Genitalia: Not studied, as the species is represented so far by a unique male specimen.

Female: Unknown.

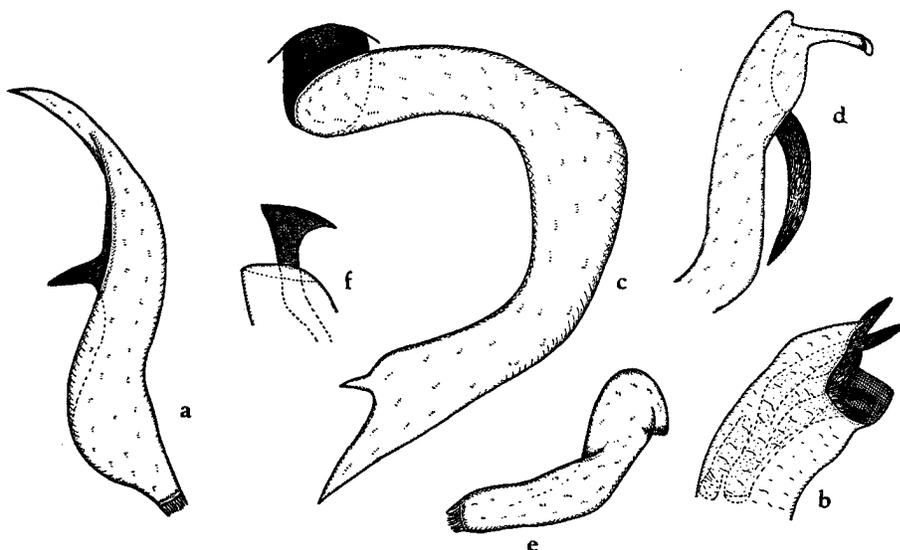


FIGURE 41.—Male genitalia. a, b, *Zanchius fragilis*: a, right clasper; b, apex of vesica. c, d, *Z. piperi*: c, right clasper; d, spiculum of vesica. e, f, *Z. carolinensis*: e, right clasper; f, spiculum of vesica.

DISTRIBUTION: Mariana Is. (Guam).

One male was collected by Usinger on Upi Trail, Guam. No specimens were among the present collections.

TRIBE PILOPHORINI REUTER

Genus *Pilophorus* Westwood

60. *Pilophorus perplexus* (Douglas and Scott).

Camaronotus perplexus (Douglas and Scott), 1865, British Hem., 360.

Characterized by its color, silvery lines, and genitalia.

Male: Length 3.7 mm., width 1.4 mm. *Head*: Length 0.2 mm., width 1.0 mm., vertex 0.47 mm. *Antennae*: Segment I, length 0.2 mm.; II, 1.2 mm.; III, 0.4 mm.; IV, 0.4 mm. *Pronotum*: Length 0.5 mm., width at base 1.2 mm. *Rostrum*: Length 1.2 mm.

Color dark brown, hemelytra light olive brown to fulvous, membrane fuscous; antennae and legs castaneous, first segment pale, second segment castaneous darkened

apically, third and fourth segments whitish; silvery lines of scales on both sides of scutellum (longitudinal tufts) and transversely on apex of scutellum, basal third of embolium and corium (absent on clavus), throughout apical third of hemelytra (including clavus) in a straight line, the exocorium behind this line polished, dark brown, cuneus dark brown with scales on inner angle; trochanters pale.

Rostrum reaching hind coxae, second antennal segment incrassate toward apex.

Genitalia: Aedeagus with a very long and slender seminal duct, the theca present and within the body. Left clasper, as illustrated (fig. 53, *b*), with two arms. Right clasper (fig. 53, *a*) small, with a short tubercle apically.

Female: Similar to male in color and dimensions.

DISTRIBUTION: Bonin Is. One male and one female.

BONIN IS. CHICHI JIMA: Sakaiura, Aug. 4, 1949, Mead.

This species is here referred to as *P. perplexus*, in spite of differences in the thickness of the second antennal segment and in the shape of the pronotum. As specimens of *P. perplexus* were not available for study and as its genitalia have not been figured, I think it advisable to let the question be settled by future workers revising the genus *Pilophorus* Westwood.

SUBFAMILY MIRINAE HAHN

KEY TO TRIBES

1. First segment of hind tarsi as long as or longer than second and third together..... 2
 First segment of hind tarsi not as long as second and third together..... 3
- 2(1). First segment of antennae as long as head and pronotum together; pronotal collar distinct and complete..... **Mecistoscelini**
 First segment of antennae shorter than head and pronotum together; pronotal collar incomplete **Stenodemini**
- 3(1). Hemelytra glassy and transparent allowing the abdomen and membranous wings to be seen from above..... **Hyalopeplini**
 Hemelytra not glassy and transparent, the abdomen and membranous wings not seen from above..... **Mirini**

TRIBE MECISTOSCELINI REUTER

Genus *Mecistoscelis* Reuter

61. *Mecistoscelis scirtetoides* Reuter (fig. 42, *e, f*).

Mecistoscelis scirtetoides Reuter, 1891, Rev. d'Ent. 10: 132.—Distant, 1904, Fauna of India, Rhynch. 2: 241, fig. 269.

Characterized by its color and male genitalia.

Male: Length 4.9 mm., width 1.0 mm. *Head*: Length 0.5 mm., width 0.9 mm., vertex 0.42 mm. *Antennae*: Segment I, length 2.1 mm.; II, 3.4 mm.; III, 6.6 mm.; IV, 3.4 mm. *Pronotum*: Length 0.9 mm., width at base 0.9 mm. *Rostrum*: Length 2.4 mm.

Color stramineous to olive ochraceous; eyes, middle of vertex posteriorly, anterior and lateral margins of calli, two bracket-like fascia on pronotum (opposing each other), extreme apex of corium, stripe on propleura, and apex of rostrum fuscous to black; extreme apex of first antennal segment, remaining antennal segments, apices of femora, tibiae, and anal tube of female infusate, often with an orange tinge. Some specimens

show a darker color on claval commissure. Spots may also be seen on upper surface of femora, especially on hind pair.

Genitalia: Aedeagus without sclerotized spiculum. Left clasper (fig. 42, f) curved and twisted near apex, with long setae and short hairs intermixed with minute setae. Right clasper with an apical tubercle, as shown in figure 42, e. The female has a noticeably elongated anal tube which is not completely covered by the hemelytra.

Female: Similar to male in color. Length 7.6 mm., width 1.0 mm. Hemelytra not covering apex of abdomen.

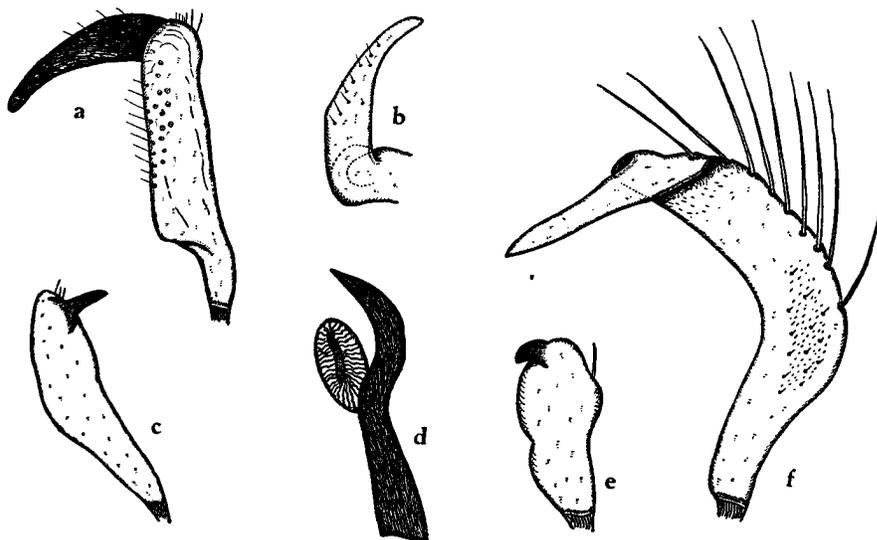


FIGURE 42.—Male genitalia. a-d, *Trigonotylus dohertyi*: a, left clasper; b, dorsal view of apex of left clasper; c, right clasper; d, spiculum of aedeagus. e, f, *Mecistoscelis scirtetoides*: e, right clasper; f, left clasper.

DISTRIBUTION: Java, Formosa, Ceylon, India, Caroline Is. Four males and 12 females.

PALAU. BABELTHUAP: Iwang, Dec. 1952, Gressitt; Dec. 1947, Dybas.
KOROR: Dec. 1952, Gressitt; Jan. 1953, Beardsley (ex bamboo).

YAP. YAP I.: Oct. 1952, Krauss.

TRIBE STENODEMINI CHINA

Genus *Trigonotylus* Fieber

62. *Trigonotylus dohertyi* (Distant). (Figure 42, a-d.)

Megaloceraea dohertyi Distant, 1904, Fauna of India, Rhynch. 2: 425.

Characterized by its color, size, and structure of male genitalia.

Male: Length 4.1 mm., width 1.0 mm. *Head*: Length 0.6 mm., width 0.6 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.5 mm.; II, 1.7 mm.; III, 1.3 mm.; IV, 0.5 mm. *Pronotum*: Length 0.5 mm., width at base 0.9 mm. *Rostrum*: Length 1.3 mm.

General color stramineous to greenish yellow; antennae reddish; eyes brown; claws black. The amount of red tinge varies; it is lacking in teneral specimens and more marked on fully matured specimens.

Hind tibiae about 2.2-2.3 times longer than width of pronotum at base, second antennal segment 2.3-2.5 times longer than width of head across eyes.

Genitalia: Aedeagus with a typical spiculum (fig. 42, *d*). Left clasper bent beyond middle, as in figure 42, *a, b*. Right clasper (fig. 42, *c*) with a subapical, sclerotized pointed tubercle.

Female: Similar to male in color but slightly more robust.

DISTRIBUTION: Central and South America, South Africa, South Asia, and Micronesia. Three hundred and thirty specimens.

BONIN IS. CHICHI JIMA: Omura, June 1936, Ikeda.

N. MARIANA IS. PAGAN: Laguna, Apr. 1940, Yasumatsu and Yoshimura.

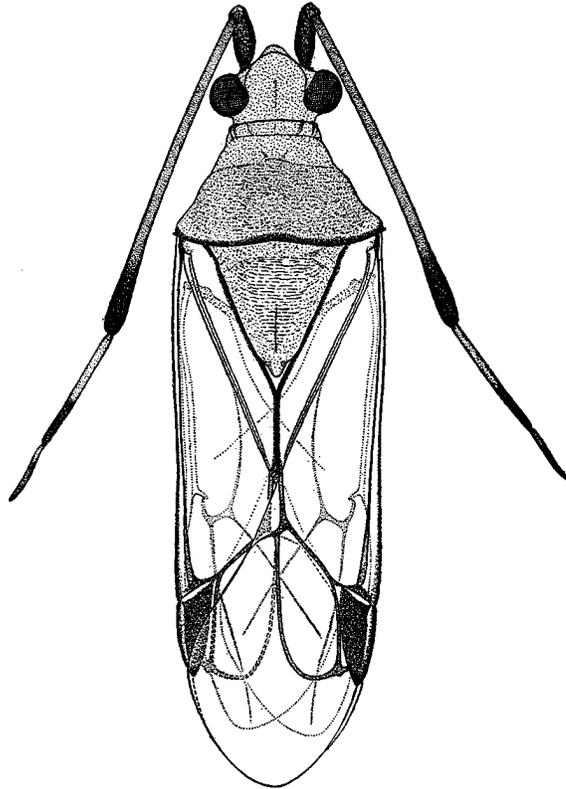


FIGURE 43.—*Hyalopeplus guamensis*, female, holotype (after Usinger).

S. MARIANA IS. SAIPAN: Ants Valley, June 1946, Townes. TINIAN: June 1946, Townes. ROTA: June 1952, Kondo; June 1936, Esaki. GUAM: Pt. Ritidian, light trap, Aug. 1945, Gressitt; Mt. Santa Rosa, Dec. 1945, Gressitt; Pt. Oca, May, June, July, Dec. 1945, G. Bohart and Gressitt; Agana, Oct. 1952, Krauss; Asan, Dec. 1945, Gressitt; Yona, Mt. Bolanos, Mt. Lamlam,

Oct. 1952, Krauss; Talofoto, Aug. 1952, Krauss; Com. Mar. Hill, May 1948, Maehler.

PALAU. BABELTHUAP: Ulimang, Dec. 1947, Dybas; western Koror, 25 m., light trap, Dec. 1952, Gressitt. PELELIU: East coast, Jan. 1948, Dybas. ANGAUR: Feb. 1948, Dybas.

YAP. YAP I.: Oct. 1952, Krauss; Ruul District, Kolonia, July 1950, Goss. RUMUNG I.: East coast, July 1950, Goss.

CAROLINE ATOLLS. SONSOROL: Sept. 1953, Krauss. NGULU: Oct. 1952, Krauss. ULITHI: Potangeras I., Nov. 1947, Dybas; Mogmog I., Oct. 1952, Krauss; Fassarai I., Oct. 1952, Krauss. NAMOLUK: Nov. 1952, Beardsley. LUKUNOR: Nov. 1952, Beardsley. MOKIL: Jan. 1953, Gressitt. PINGELAP: Jan. 1953, Gressitt.

TRUK. TON (Tol): Apr. 1940, Yasumatsu and Yoshimura.

KUSAIE. Malem, Dec. 1937, Esaki.

MARSHALL IS. UJELANG: Oct. 1953, Beardsley. ENIWETOK: May 1946, Townes. UJAE: Oct. 1953, Beardsley. NAMU: Aug. 1953; Kaginen I., Nov. 1953, Beardsley. NAMORIK: Mar. 1953, Beardsley. EBON: Aug. 1953, Beardsley. KILI: Oct. 1953, Beardsley. JALUIT: Nov. 1937, Esaki. ARNO: Ine I., July 1950, La Rivers; June 1950, Usinger. MILI: Nallo (Alu) I., Oct. 1953, Beardsley.

GILBERT IS. TARAWA: Mar. 1951, Catala.

This species is tropicopolitan. It has been reported also from India, Ceylon, and Christmas I. (Indian Ocean); and I have studied specimens from the Philippines, Formosa, New South Wales, Mexico, Peru, Colombia, Puerto Rico, Nigeria, British Cameroon, Thailand, and Panama.

TRIBE HYALOPEPLINI CARVALHO

KEY TO GENERA

1. Pronotum distinctly and coarsely punctate.....**Macrolonidea**
 Pronotum rugulose**Hyalopeplus**

Genus **Hyalopeplus** Stål

63. **Hyalopeplus amboinae** Carvalho, n. sp. (fig. 44, d-f).

Characterized by its color, size, and male genitalia.

Male: Length 5.0 mm., width 2.3 mm. *Head*: Length 0.8 mm., width 1.3 mm., vertex 0.68 mm. *Antennae*: Segment I, length 0.9 mm.; II, 4.4 mm.; III, 1.3 mm.; IV, 1.3 mm. *Pronotum*: Length 1.6 mm., width at base 2.3 mm. *Rostrum*: Length 3.5 mm.

Color citrine to lutescent with glassy, transparent hemelytra; seven longitudinal vittae on pronotum and propleura, the three median ones following those on head, median line and two spots at apex of scutellum dark brown to reddish; veins of membrane and extreme apex of cuneus darker; gena with a longitudinal dark stripe, apex of rostrum and veins of membranous wings black; femora with rows of dark or reddish spots, tibiae and antennae with reddish tinge or minute reddish areas.

Genitalia: Aedeagus with a spiculum (fig. 44, *f*) very slightly enlarged apically. Left clasper as shown in figure 44, *d*. Right clasper (fig. 44, *e*) with an apical large tooth.

Female: Similar to male in color and dimensions.

Holotype, male (CAS), Amboina, F. Muir; allotype, female, same data as for type. Paratypes, female. Babelthuap I., Palau, Dec. 19, 1952, J. W. Beardsley; six males, 10 females, Amboina, F. Muir.

DISTRIBUTION: Malay Archipelago and Caroline Is. (Palau).

This species is very near *H. vitripennis* (Stål) from Java, but it differs in the pale embolium and cuneus, in the size of the body, and in the structure of the male genitalia. In *H. vitripennis* the spiculum of the aedeagus (fig. 44, *c*) shows a larger apical broadened area. The right clasper (fig. 44, *b*) and the left clasper (fig. 44, *a*) also show differences. It is quite possible that it may be found within the Micronesian region.

64. *Hyalopeplus guamensis* Usinger (figs. 43; 44, *g, h*).

Hyalopeplus guamensis Usinger, 1946, B. P. Bishop Mus., Bull. 189: 58, fig. 13.

Characterized by its color and structure of male genitalia.

Male: Length 7.1 mm., width 1.9 mm. *Head*: Length 0.7 mm., width 1.2 mm., vertex 0.5 mm. *Antennae*: Segment I, length 0.8 mm.; II, 4.1 mm.; III, 1.3 mm.; IV, 0.8 mm. *Pronotum*: Length 1.1 mm., width at base 1.8 mm. *Rostrum*: Length 2.3 mm.

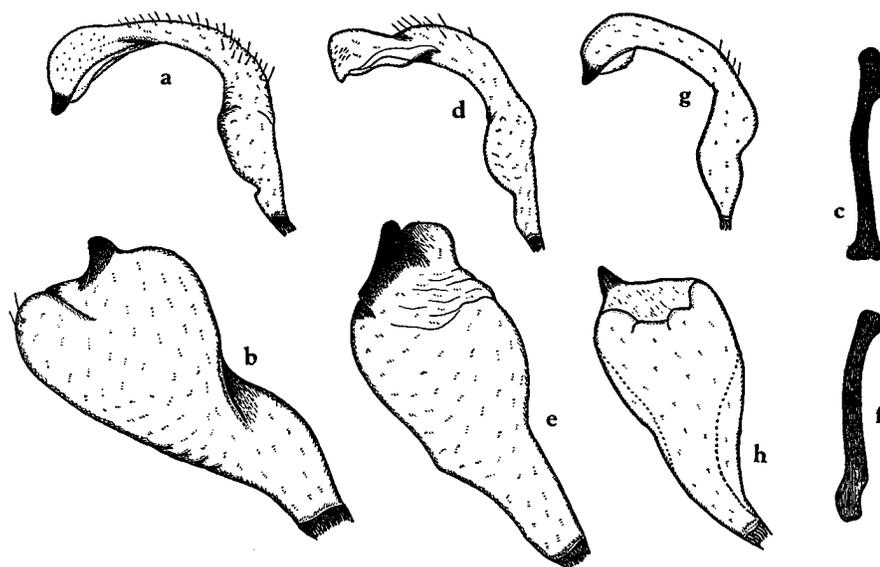


FIGURE 44.—Male genitalia. a-c, *Hyalopeplus vitripennis*: a, left clasper; b, right clasper; c, spiculum of aedeagus. d-f, *H. amboinae*: d, left clasper; e, right clasper; f, spiculum of aedeagus. g, h, *H. guamensis*: g, left clasper; h, right clasper.

General color yellowish ochraceous with two long, interrupted brown stripes laterally and one short median stripe on tylus, a median longitudinal brown stripe on vertex, seven longitudinal stripes on collar; brown elsewhere as follows: Narrowly on hind margin of pronotum, eyes, inner margin, and commissure of clavus, veins of hind wings and membrane, and apex of rostrum; cuneus mostly reddish and costal margin of corium and cuneus pale brown to ochraceous posteriorly; antennae reddish with brown at extreme base and apex and brown spots on inner basal half of first segment, brownish apex of second segment, and ochraceous bases and brownish apices of third and fourth segments; front and middle legs pale with reddish apices of tibiae and reddish tarsi except for brown apices and claws; hind femora pale with brown spots and red apices, tibiae and tarsi red with brown tarsal apices and claws.

Rostrum reaching apices of middle coxae, pronotum finely transversely rugose; head, pronotum, and scutellum glabrous.

Genitalia: Vesica with two lobes more or less sclerotized and with a field of spines. Left clasper (fig. 44, *g*) broadly curved with a swollen area near the apex. Right clasper ended by a point, as shown in figure 44, *h*.

Female: Length 7.5 mm., width 2.1 mm. Similar to male in color.

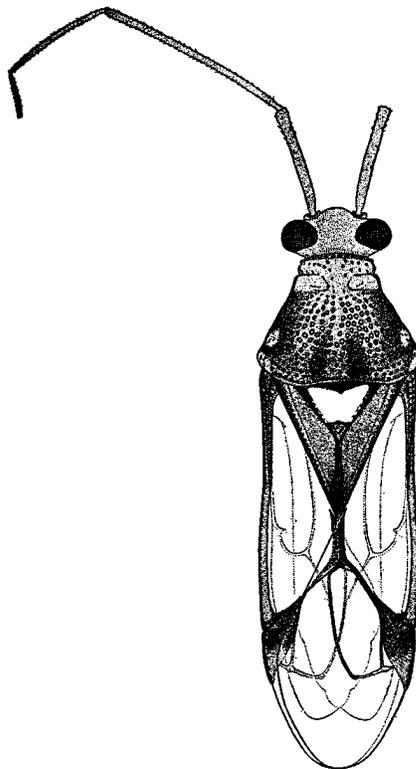


FIGURE 45.—*Macrolonidea hyalinus*, female, holotype (after Usinger).

DISTRIBUTION: Mariana Is. One male and four females.

S. MARIANA IS. GUAM: Pt. Oca, June 1945, G. Bohart and Gressitt.

HOST: *Thespesia populnea* (Usinger, 1946).

This species differs from other species in the genus in its immaculate and finely transversely rugose pronotum, in the absence of hairs on the head, in the pronotum and scutellum, and in the structure of the male genitalia.

Genus **Macrolonidea** Hsiao

65. **Macrolonidea hyalinus** Usinger (figs. 45; 46, *a, b*).

Macrolonidea hyalinus Usinger, 1946, B. P. Bishop Mus., Bull. 189: 60, fig. 14.

Characterized by its color and dimensions.

Male: Length 4.2 mm., width 1.2 mm. *Head*: Length 0.2 mm., width 0.8 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.8 mm.; II, 1.5 mm.; III, 0.8 mm.; IV, 0.4 mm. *Pronotum*: Length 0.9 mm., width at base 1.2 mm. *Rostrum*: Length 1.5 mm.

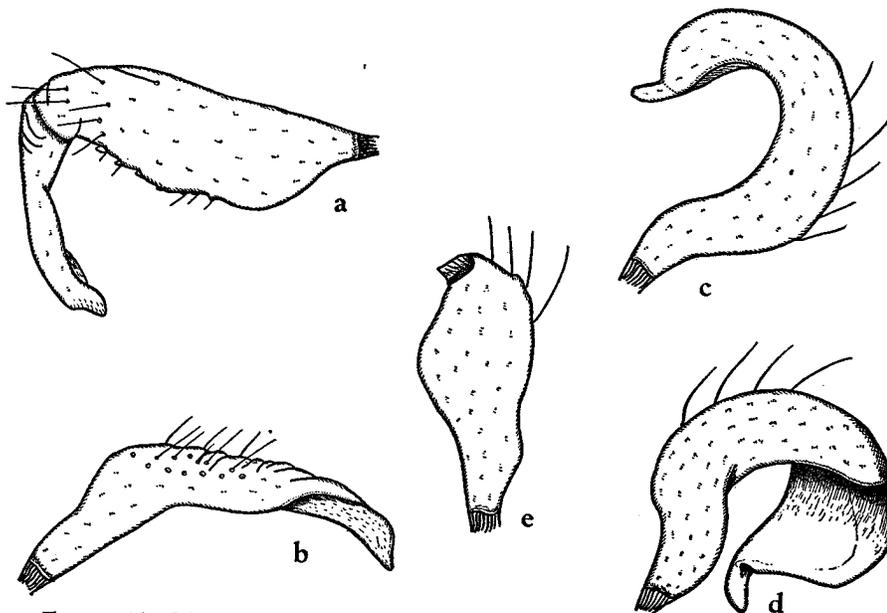


FIGURE 46.—Male genitalia. *a, b*, *Macrolonidea hyalinus*: *a*, left clasper; *b*, right clasper. *c-e*, *Mycetocylapus pacificus*: *c*, dorsal view of left clasper; *d*, ventral view of same; *e*, right clasper.

General color ochraceous with fulvous anteriorly on head, brown eyes, dark brown apex of second antennal segment and all of apical segments except for narrow white base of third; pronotum with brown humeri and a brown fascia on either side of middle near hind margin; scutellum yellow with black base (mesonotum), an ill-defined brown line along middle, and brown apex; hemelytra clear, hyaline, the inner margin of clavus broadly dark brown to black, the outer punctate margin of clavus brown, corium pale along costal margin and narrowly at apex of clavus, elsewhere along inner and apical margin brown, cuneus dark brown at inner base, pale along outer margin, membrane clear; underside of body mostly pale, brown at middle of abdomen, apex of rostrum and tarsal apices brown.

Pronotum coarsely punctate, strongly convex on disc, scutellum smooth above but with somewhat serrated notches laterally, claval vein punctate, hemelytra glassy, corium without veins.

Rostrum reaching hind coxae.

Genitalia: Left clasper (fig. 46, *a*) strongly curved a little beyond the middle with a few setae dorsally and on the upper margin. Right clasper also curved, as shown in figure 46, *b*.

Female: Similar to male in color and dimensions.

DISTRIBUTION: Mariana Is. One male and three females.

S. MARIANA IS. SAIPAN: 1 to 2 miles east of Tanapag, Mar. 1944, Dybas; Garapan, May 1940, Yasumatsu and Yoshimura. TINIAN: Mt. Lasso, June 1946, Townes.

HOST: Paipay (*Guamia mariannae*), (Usinger).

This species differs from *M. cyanescens* Hsiao in its smaller size and in the less narrowed anterior portion of the pronotum.

TRIBE MIRINI HAHN

KEY TO GENERA

1. Pronotum smooth or rugose but without punctures..... 2
Pronotum punctate 3
- 2(1). Vertex sulcate longitudinally, frons striolate; long parallel-sided species,
antenna very long..... **Creontiades**
Vertex not sulcate; species usually ovoidal in outline, antenna short and
thick **Sidnia**
- 3(1). Body covered with very long, fine, and erect pubescence, hemelytra with
silvery tomentose areas..... **Nesodaphne**
Body with short pubescence and without silvery tomentose areas..... 4
- 4(3). First antennal segment noticeably enlarged, somewhat compressed..... **Eurystylus**
First antennal segment cylindrical..... 5
- 5(4). Claws toothed at base, head pointed in front, pubescence somewhat silky.....
..... **Proboscidoecoris**
Claws not toothed at base, head not pointed, pubescence normal..... **Lygus**

Genus **Creontiades** Distant

KEY TO SPECIES OF CREONTIADES

1. Body stramineous, scutellum pale with black apex..... **pallidifer**
Body dark brown to castaneous; scutellum unicolorous dark..... 2
2. Pronotum uniformly pale yellow to lutescent..... **yapensis**
Pronotum dark brown, reddish behind calli..... **palauensis**

66. **Creontiades palauensis** Carvalho, n. sp. (fig. 48, *a, b*).

Characterized by color of pronotum and structure of male genitalia.

Male: Length 5.7 mm., width 2.2 mm. *Head*: Length 0.5 mm., width 1.2 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.9 mm.; II, 2.4 mm.; III, 2.0 mm.; IV, 1.1 mm. *Pronotum*: Length 1.0 mm., width at base 1.8 mm. *Rostrum*: Length 2.7 mm.

General color reddish brown to dark castaneous; head with a darker area on sulcus of vertex; pronotum with two reddish-yellow areas behind calli, narrow posterior margin, longitudinal line and apex of scutellum, commissures, embolium (especially toward apex), outer margin and apex of cuneus, and hind tibiae (in some specimens also apex of femora)

reddish; membrane infumate; underside of body castaneous, more reddish on abdomen; femora and two anterior pairs of tibiae yellowish; first antennal segment, extreme base, and apex of second segment reddish brown (median basal portion of second segment and third and fourth segments paler).

Rostrum reaching apex of hind coxae (fourth or fifth abdominal segment, body densely pubescent).

Genitalia: Left clasper (fig. 48, *a*) long, curved near apex, ended by an acute point. Right clasper (fig. 48, *b*) much smaller, with two apical constrictions, ended also by a point.

Female: Second antennal segment, length 2.4 mm.

Holotype, male (US), northeast Koror, Limestone Ridge, Palau, 40 m., Dec. 14, 1952, J. L. Gressitt; allotype, female (US), east Ngatpang, Babelthuap I., Palau, Dec. 8, 1952, Gressitt. Paratypes, five males and three females. Palau: Babelthuap, Dec. 9, 1952, Gressitt; wooded peak southwest of Ulimang, Dec. 12, 1947, H. S. Dybas; Koror, Limestone Ridge, Dec. 14, 1952, Gressitt; Ngarmalk (northwest Auluptagel), Dec. 13, 1952, Gressitt; May 23, 1953, Beardsley; Jan. 29, 1938, T. Esaki; Peleliu, Mt. Amiungal, Dec. 23, 1952, Gressitt.

DISTRIBUTION: Caroline Is. (Palau).

This species is very near *C. yapensis* but differs in the darker pronotum with pale reddish areas behind the calli and in the structure of the male genitalia.

67. *Creontiades pallidifer* (Walker). (Figure 48, *f, g*.)

Capsus stramineus Walker, 1873, Cat. Het. Brit. Mus. 6: 120; name preoccupied by *Capsus stramineus* Walker, op. cit., p. 96.

Capsus pallidifer Walker, 1873, Cat. Het. Brit. Mus. 6: 199; new name for *C. stramineus* Walker.

Creontiades stramineus, Usinger, 1954, Gressitt, Insects of Micronesia 1: 188.

Kranga dudgeoni Kirkaldy, 1902, Ent. Soc. London, Trans. 1902: 257; syn. by Distant, 1904, Ann. Mag. Nat. Hist. VII, 13: 105.

Characterized by its color, dimensions, and male genitalia.

Male: Length 5.9 mm., width 1.9 mm. *Head*: Length 0.5 mm., width 1.1 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.8 mm.; II, 2.3 mm.; III, 1.9 mm.; IV, 0.9 mm. *Pronotum*: Length 0.9 mm., width at base 0.6 mm. *Rostrum*: Length 2.4 mm.

General color stramineous to pale ochraceous or ferruginous with small dark-brown spots on pronotum, scutellum, and apex of femora; pronotum at posterior margin, two fasciae on mesoscutum (sometimes fused), base of scutellum, and apex of posterior femora dark brown; apex of scutellum shining piceous black; underside of body, first antennal segment, and veins of membrane with reddish tinge (not all specimens); tibial spines dark brown; in some specimens the hairs on hemelytra with minute dark spots at base.

Rostrum reaching the fourth abdominal segment.

Genitalia: Left clasper (fig. 48, *f*) long, ended by a fine point. Right clasper (fig. 48, *g*) smaller, tapering to apex.

Female: Similar to male in color and dimensions.

DISTRIBUTION : India, Ceylon, Java, Philippines, New Hebrides, Santa Cruz Is., Fiji, Formosa, Minikoi Is., China, Samoa, Mariana Is., Caroline Is., and Bonin Is. Twenty-eight males and 42 females, plus 81 specimens.

BONIN IS. CHICHI JIMA : July 4, 1949, Mead.

VOLCANO IS. IWO JIMA : Dec. 1945, Bertram.

N. MARIANA IS. AGRIHAN : July 1951, R. Bohart. PAGAN : Regusa, Apr. 1940, Yasumatsu and Yoshimura.

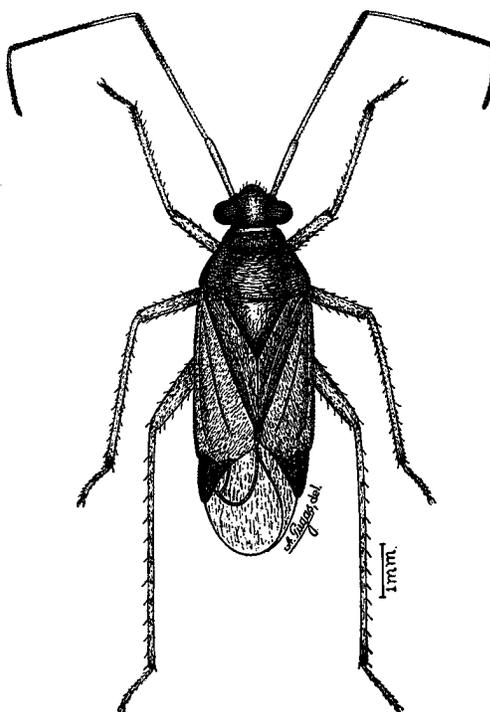


FIGURE 47.—*Creontiades yapensis*, female, paratype.

S. MARIANA IS. SAIPAN : Sept. 1946, Dybas; Garapan, Apr. 1946, Krauss; Nov. 1937, Esaki; May 1940, Yasumatsu and Yoshimura. ROTA : Feb. 1936, Esaki. GUAM : Pt. Oca, Dec. 1945, G. Bohart and Gressitt; Agana, May 1945, Gressitt; Asan, Dec. 1945, Gressitt; Ordot, May 1945, G. Bohart and Gressitt; Tutujan, Nov. 1952, Gressitt; Talofoto, Aug. 1952, Krauss; Com. Mar. Hill, Mar. 1946, Maehler.

PALAU. BABELTHUAP : Ulimang, Dec. 1947, Dybas; Ngiwal, July 1946, Townes. KOROR : Mar. 1923, Uchiyama.

YAP. YAP I. : Dugor, July 1950, Goss. MAP I. : Eastern part, July 1950, Goss.

CAROLINE ATOLLS. PULO ANNA: Sept. 1952, Krauss. ULITHI: Mogmog I., Oct. 1952, Krauss; Fassarai I., Oct. 1952, Krauss; Asor I., Oct. 1952, Krauss. FAIS: Apr. 1954, Beardsley. WOLEAI: Woleai I., Oct. 1952, Krauss; Utagal (Utagal, Utakae) I., July 1946, Townes; Feb. 1953, Beardsley. FARAULEP: Feb. 1953, Beardsley. EAST FAYU: Oct. 1952, sweeping grass, Beardsley. IFALUK: Sept. 1953, Beardsley. NAMA: Oct. 1952, Beardsley.

TRUK. PIS: June 1946, Townes. MOEN: May 1946, Townes; southern valley, Mt. Tonaachau, Apr. 1949, Potts; Mt. Teroken, Feb. 1953, Gressitt; Civ. Ad. Area, Mar. 1949, Potts. DUBLON: May 1946, Townes.

PONAPE. Colonia, Aug. 1946, Townes; Nanwei (Nanue, Nanu), June 1950, Adams.

This species differs from *C. palauensis* and *C. yapensis* in the pale color of the body and in the less dense pubescence, as well as in the structure of the male genitalia.

HOSTS: *Piper guahamense*, *Siola* sp., *Zea* (maize), and *Ipomoea* (sweet potato).

68. *Creontiades yapensis* Carvalho, n. sp. (figs. 47; 48, c-e).

Characterized by color of pronotum and structure of male genitalia.

Male: Length 6.1 mm., width 2.2 mm. *Head*: Length 0.5 mm., width 1.2 mm., vertex 0.28. *Antennae*: Segment I, length 0.8 mm.; II, 2.4 mm.; III, 1.8 mm.; IV, 1.0 mm. *Pronotum*: Length 1.1 mm., width at base 2.0 mm. *Rostrum*: Length 2.7 mm.

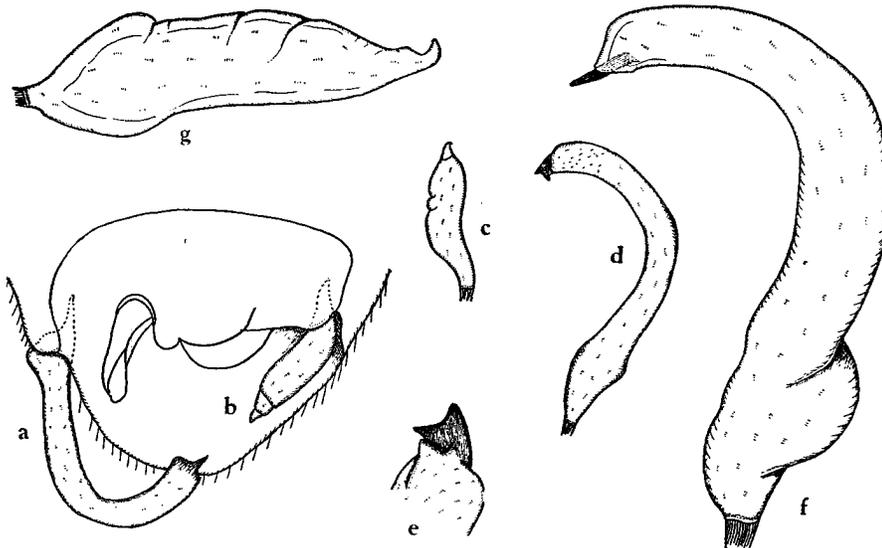


FIGURE 48.—Male genitalia. a, b, *Creontiades palauensis*: a, left clasper; b, right clasper. c-e, *C. yapensis*: c, right clasper; d, left clasper; e, apex of left clasper. f, g, *C. pallidifer*: f, left clasper; g, right clasper.

General color reddish brown to testaceous; antennae (except apices of second, third, and fourth segments), pronotum (except calli), tending to lutescent; embolium and outer margin of cuneus reddish; membrane dark fuscous; eyes brown to reddish brown; under-side of body and legs castaneous with paler portions tending to yellow, mesosternum darker; tibiae in some specimens yellow to testaceous, reddish brown toward base; second antennal segment noticeably darker apically.

Rostrum reaching hind coxae, body densely pubescent.

Genitalia: Left clasper (fig. 48, *d, e*) long, cylindrical ending with a forked tooth. Right clasper small, as in figure 48, *c*.

Female: Length 7.4 mm., width 2.5 mm. *Head*: Length 0.5 mm., width 1.3 mm., vertex 0.37 mm. *Antennae*: Segment I, length 0.9 mm.; II, 2.4 mm.; III, 1.8 mm.

Holotype, male (US), hill behind Yaptown, Yap I., Dec. 1, 1952, J. L. Gressitt; allotype, female (US), same data as for type. Paratypes, two males and three females. Yap: Hill behind Yaptown; Mt. Matade, Dec. 2, 3, 1952, Gressitt; July 1950, R. J. Goss; Ruul-Tomil, Sept. 5, 1939, T. Esaki.

DISTRIBUTION: Caroline Is. (Yap).

This species is very near *C. palauensis*; but it differs in the unicolorous, somewhat lutescent pronotum and in the structure of the male genitalia.

Genus *Eurystylus* Stål

69. *Eurystylus costalis* var. *unicolor* Poppius (fig. 58, *a-c*).

Eurystylus costalis var. *unicolor* Poppius, 1911, Ofv. F. Vet.-Soc., Forh. 53 (A): 6.

Characterized by its color and dimensions.

Male: Length 5.6 mm., width 2.3 mm. *Head*: Length 0.6 mm., width 1.1 mm., vertex 0.4 mm. *Antennae*: Segment I, length 0.9 mm.; II, 2.1 mm.; III, 0.5 mm.; IV, 0.4 mm. *Pronotum*: Length 1.4 mm., width at base 2.0 mm. *Rostrum*: Length 1.9 mm.

General color olivaceous on head, pronotum, and scutellum, brown olivaceous on hemelytra, the whole body mottled with yellow; exocorium and outer portion of cuneus tending to red; membrane translucent, veins brown; antennae darkening toward apex, base of three last antennal segments whitish; femora toward base and tibiae paler, the latter with reddish tinge, eyes dark brown, base of first antennal segment and a triangular spot above antennal peduncle black.

Body strongly inclined anteriorly and posterior to cuneal fracture, head pointed in front, eye inclined, collar very wide (about as wide as thickness of first antennal segment), scutellum quite large, rostrum reaching middle coxae, antenna with first segment very stout, somewhat compressed, the second segment strongly incrassate toward the apex.

Genitalia: Left clasper (fig. 58, *b, c*) enlarged apically, curved. Right clasper (fig. 58, *a*) strongly curved near apex.

Female: Similar to male in color, slightly more robust, second antennal segment 0.8 mm. long.

DISTRIBUTION: Sumatra, Mentawai, Philippines, and Mariana Is. Four males and four females.

N. MARIANA IS. PAGAN: July 1951, R. Bohart.

S. MARIANA IS. GUAM: Pt. Oca, 1945, Gressitt; Mt. Lamlam, Oct. 1952, Krauss; Talofoto, Apr. 1946, Krauss.

Genus *Lygus* HahnKEY TO SPECIES OF *LYGUS*

1. Greenish or pale greenish species, apex of cuneus dark.....**pallidulus**
 Dark species or pale but with dark brown or reddish areas..... 2
- 2(1). Second antennal segment black apically..... 3
 Second antennal segment totally pale or black basally..... 4
- 3(2). Second antennal segment black at apex and base; color of body lutescent anteriorly**kororensis**
 Second antennal segment black only apically; color of body brown anteriorly**ponapensis**
- 4(2). Cuneus unicolorous 5
 Cuneus pale or castaneous but with black or sanguineous apex..... 6
- 5(4). Body yellowish ochraceous, clavus and area surrounding corial commissure black**fullawayi**
 Body castaneous to dark brown, spots over calli, clypeus, and frons black**palauensis**
- 6(4). Pronotum with two black spots over external portion of calli, frons with reddish to brown striae, sides of head reddish.....**guamensis**
 Pronotum without black spots as above, frons not striated..... 7
- 7(6). Pronotum dark brown with a large portion of disc internally and anteriorly pale yellow to citrine..... 8
 Pronotum unicolorous or nearly so..... 10
- 8(7). Scutellum pale, unicolorous.....**trukensis**
 Scutellum brown or reddish with pale apex..... 9
- 9(8). Rostrum reaching middle of abdomen.....**rotaensis**
 Rostrum reaching hind coxae.....**saipanensis**
- 10(7). Color of body mostly pale, pale brown to castaneous; femora pale brown with apical dark rings but without distinct pale spots..... 11
 Color of body black to dark brown; hind femora dark brown apically with distinct pale spots..... 12
- 11(10). Body with a reddish tinge, scutellum reddish, femora with at least two reddish apical rings.....**rubrotinctus**
 Body mostly pale or castaneous; scutellum not reddish, femora brown apically**babelthuapensis**
- 12(10). Tibiae with dark spines and dark spots at their bases; abdomen largely pale**kusaiensis**
 Tibiae with brown spines without spots at base; abdomen largely black**dybasi**

70. *Lygus babelthuapensis* Carvalho, n. sp. (fig. 49, a, b).

Characterized by its color and structure of male genitalia.

Male: Length 3.2 mm.; width 1.4 mm. *Head*: Length 0.2 mm.; width 0.9 mm.; vertex 0.35 mm. *Antennae*: Segment I, length 0.3 mm.; II, 1.1 mm.; III, 0.7 mm.; IV, 0.4 mm. *Pronotum*: Length 0.5 mm.; width at base 1.1 mm. *Rostrum*: Length 1.2 mm.

General color pale brown to castaneous, anterior portion of calli, apex of scutellum, middle of claval commissure, middle of excarina and embolium and cuneus paler, the latter black apically, legs concolorous, apices of posterior femora darker.

Rostrum reaching apices of the trochanters (sixth to seventh abdominal segment).

Genitalia: Left clasper as shown in figure 49, a. Right clasper (fig. 49, b) smaller, with a tooth near apex. Aedeagus without a sclerotized spiculum.

Female: Similar to male in color and dimensions.

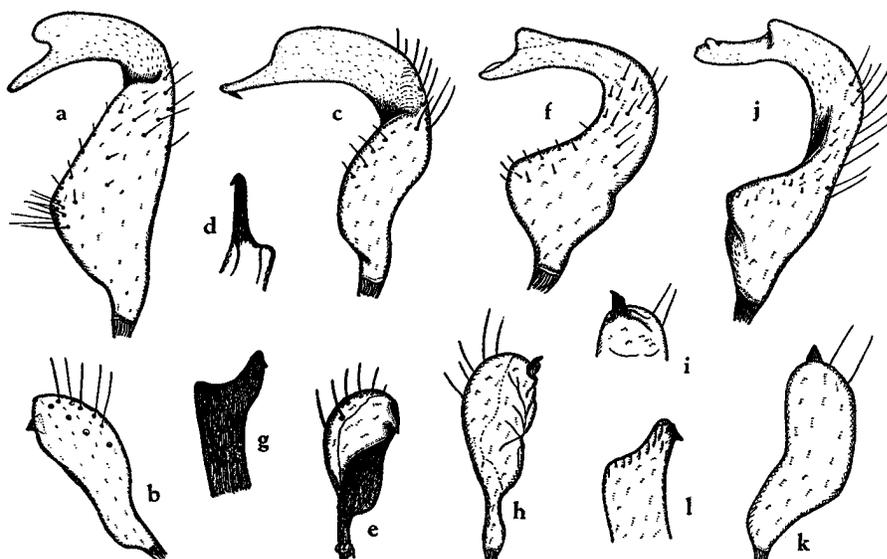


FIGURE 49.—Male genitalia. a, b, *Lygus babelthuapensis*: a, left clasper; b, right clasper. c-e, *L. kusaiensis*: c, left clasper; d, apex of left clasper; e, right clasper. f-i, *L. ponapensis*: f, left clasper; g, apex of left clasper; h, right clasper; i, apex of right clasper. j, k, *L. saipanensis*: j, left clasper; k, right clasper. l, *L. trukensis*, apex of left clasper.

Holotype, male (US), east Ngatpang, Babelthuap I., Palau Is., Dec. 1952, J. L. Gressitt; allotype, female (US). Paratypes, one male and two females, same data as for the type.

DISTRIBUTION: Caroline Is. (Palau).

This species is near *L. rubrotinctus*, new species, but without a reddish tinge or areas and with the posterior femora lacking reddish apical rings.

71. *Lygus fullawayi* Usinger (fig. 55, d-g).

Lygus fullawayi Usinger, 1946, B. P. Bishop Mus., Bull. 189: 64.

Characterized by its small size, color, and male genitalia.

Male: Length 3.1 mm., width 1.4 mm. *Head*: Length 0.2 mm., width 0.9 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.4 mm.; III, 0.7 mm.; IV, 0.4 mm. *Pronotum*: Length 0.6 mm., width at base 1.2 mm. *Rostrum*: Length 1.1 mm.

General color yellowish ochraceous, the hind margin of pronotum narrowly white, eyes brown, apical two antennal segments and apex of rostrum infusate; clavus black with brownish outer margins; corium broadly black at inner apex and inner angle of cuneus forming a large black area; apices of hind femora ringed with brown subapically.

Rostrum reaching but not surpassing the coxae.

Genitalia: Left clasper (fig. 55, f, g) curved, slightly more broadened at base, the apex as illustrated. Right clasper (fig. 55, d, e) with a characteristic subapical projection bearing two spinelike tubercular projections.

Female: Length 3.4 mm., width 1.6 mm. *Head*: Width 1.0 mm., vertex 0.30 mm. *Pronotum*: Length 0.6 mm., width at base 1.3 mm.

DISTRIBUTION: Mariana Is. Seven males and 10 females.

S. MARIANA IS. TINIAN: Mt. Lasso, June 1946, Hadden. AGIGUAN: June 1952, Kondo. GUAM: Pt. Oca, Mt. Santa Rosa, June, Nov. 1945, G. Bohart and Gressitt; Mt. Lamlam, Mt. Bolanos, Oct. 1952, Krauss.

HOST: *Piper guahamense*.

This species approaches *L. erimensis* Poppius but differs in color and size. I have seen the variety *rubroscutellatus* Usinger which, as the name indicates, has a reddish scutellum. In the present survey, no specimens were available for study.

72. *Lygus guamensis* Usinger.

Lygus guamensis Usinger, 1946, B. P. Bishop Mus., Bull. 182: 63.

Characterized by its color and male genitalia.

Female: Length 4.3 mm., width 1.9 mm. *Head*: Length 0.2 mm., width 1.0 mm., vertex 0.37 mm. *Antennae*: Segment I, length 0.5 mm.; II, 1.7 mm.; III, 0.9 mm.; IV, 0.6 mm. *Pronotum*: Length 0.8 mm., width at base 1.6 mm. *Rostrum*: Length 1.7 mm.

General color fulvous to brownish ferrugineous, pale fulvous on head and pronotum with brown and red oblique stripes at middle of head and generally reddish anterior portion of head; first and second antennal segments entirely pale ochraceous, the last two segments brown; rostrum ochraceous with reddish base and black apex; disc of pronotum brown anterolaterally including outer portion of callosities and broadly brown posteriorly (not reaching humeri) except for narrow testaceous posterior margin; scutellum pale fulvous to ochraceous with white apex and with two ill-defined reddish longitudinal vittae at middle; hemelytra brownish ferrugineous, the costal margins narrowly pale basally and broadly pale at middle; cuneus subhyaline, white laterally, red apically and along inner margin; membrane uniformly faintly clouded, the veins reddish; under surface brown on thorax, ochraceous on abdomen, reddish laterally; legs pale, testaceous tinged with reddish, the hind femora, except at bases, brownish ferrugineous.

Rostrum slightly exceeding apices of hind coxae.

DISTRIBUTION: Mariana Is. Two females. No males of this species were found among the present material.

S. MARIANA IS. ROTA: Native forest near Sabana, June 1946, Townes. GUAM: Pt. Oca, June 1945, G. Bohart and Gressitt.

According to Usinger (1946, B. P. Bishop Mus., Bull. 189: 64), this species runs to *L. rosaceus* Poppius from Sumatra in Poppius' key to the Indo-Australian species (1914, Mus. Nat. Hungarici, Ann. 12: 337), but *rosaceus* lacks the brown basal portion of the pronotum, has a narrower vertex, has a longer second antennal segment, and has a relatively longer last antennal segment.

73. *Lygus kororensis* Carvalho, n. sp. (fig. 55, a-c).

Characterized by its color, size, and male genitalia.

Male: Length 2.8 mm., width 1.2 mm. *Head*: Length 0.2 mm., width 0.8 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.2 mm.; II, 0.8 mm.; III and IV broken. *Pronotum*: Length 0.5 mm., width at base 1.1 mm. *Rostrum*: Length 1.1 mm.

General color brownish lutescent, tending to lutescent alone on head and pronotum; hemelytra darkened toward cuneus, membrane dark fuscous; external and pleural areas, extreme base of abdomen, and legs yellowish lutescent; abdomen castaneous to brown; tibial spines and extreme bases of tibiae and apices of tarsi, dark; eyes castaneous; apex

of clypeus black; base of first antennal segment and extreme base and apical fourth of second segment fuscous to black.

Rostrum reaching hind coxae.

Genitalia: Aedeagus with a sclerotized portion on vesica (fig. 55, c). Left clasper curved, with a more enlarged subbasal portion, or lobe, bearing small tubercles, the dorsal surface with several setae, apical portion (fig. 55, a) ending with two spinelike projections. Right clasper as shown in figure 55, b.

Female: Similar to male but more robust.

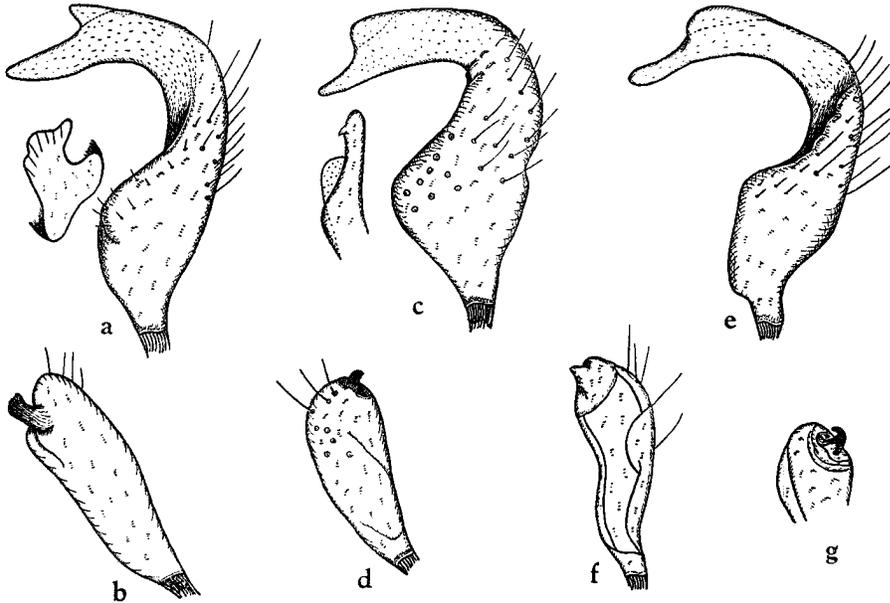


FIGURE 50.—Male genitalia. a, b, *Lygus rotaensis*: a, left clasper and apex of same; b, right clasper. c, d, *L. trukensis*: c, left clasper and apex of same; d, right clasper. e-g, *L. dybasi*: e, left clasper; f, right clasper; g, ventral aspect of apex of right clasper.

Holotype, male (US), Koror I., Palau Is., Nov. 30, 1947, H. S. Dybas; allotype, female (US), Koror, Mar. 26, 1953, J. W. Beardsley. Paratypes, three males and two females: Koror, Dec. 2, 1947, Dybas; Sept. 1952, N. L. H. Krauss; May 1953, Beardsley.

DISTRIBUTION: Caroline Is. (Palau).

This species differs from other Micronesian species in its small size, in the color, in the short antennae, and in the structure of the male genitalia.

74. *Lygus kusaiensis* Carvalho, n. sp. (fig. 49, c-e).

Characterized by its color and structure of male genitalia.

Male: Length 3.4 mm., width 1.2 mm. *Head*: Length 0.3 mm., width 0.8 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.3 mm.; III, 1.0 mm.; IV, 0.5 mm. *Pronotum*: Length 0.5 mm., width at base 1.1 mm. *Rostrum*: 1.3 mm.

General color cinnamon brown to dark brown; eyes castaneous; antennae, posterior portion of vertex, middle area of collar, thin posterior margin of pronotum, apex of

scutellum, apical fourth of exocorium, and middle of cuneus pale yellow to hyaline (cuneus somewhat translucent); median outer portion of embolium, extreme apex of corium and embolium, outer margin and subapical portion of cuneus with an orange to reddish tinge; membrane fuscous with two faint, paler areas beyond apex of cuneus; underside of body with external and pleural areas dark brown, the abdomen showing brown and reddish areas; legs pale yellow to hyaline, apical portion of hind femora dark brown with faint yellow spots, tibial spines brown with dark areas at base.

Rostrum reaching apices of hind coxae.

Genitalia: Left clasper curved, with an enlarged basal portion, dorsal setae, and a strongly narrowed apical portion tapering to end where it is also curved (fig. 49, *c, d*). Right clasper as shown in figure 49, *e*.

Female: Length 4.2 mm., width 1.8 mm. *Head*: Width 1.0 mm., vertex 0.34 mm.

Rostrum: Length 1.5 mm.

Paler in color than male, the median portion of claval commissure with a hyaline to pale yellow spot. Orange tinge on hemelytra absent.

Holotype, male (US), Mt. Fenkol, Kusaie, Jan. 24, 1953, J. L. Gressitt; allotype, female (US), same data as for type. Paratypes, 10 females and 16 males: Kusaie, Mt. Fenkol, Jan. 24, 1953, Gressitt; "Hill 1010," Mt. Fuinkol, Wakap, Mutunlik, Apr. 1953, J. F. G. Clarke; Lele (Lelo, Lelu), Dec. 4, 1937, T. Esaki.

DISTRIBUTION: Caroline Is. (Kusaie).

This species differs from other species in the color of the body, in the pubescence, in the occurrence of pale spots on the hind femora, and in the structure of the male genitalia. It is nearest to *L. ponapensis*, but its tibiae have dark spines and spots or cloudings at the base and a shorter second antennal segment.

75. *Lygus palauensis* Carvalho, n. sp. (fig. 51, *d-f*).

Characterized by its large size, color, and structure of male genitalia.

Male: Length 4.0 mm., width 1.8 mm. *Head*: Length 0.2 mm., width 1.0 mm., vertex 0.23 mm. *Antennae*: Segment I, length 0.5 mm.; II, 1.7 mm.; III, 0.9 mm.; IV, 0.5 mm. *Pronotum*: Length 0.6 mm., width at base 1.5 mm.

Color brown to castaneous; two spots over the calli, clypeus, frons, and eyes dark brown; pleural portion and upper portion of abdominal tergites fuscous; legs pale, femora with two apical dark rings, tibial spines with minute spots at their bases; second antennal segment dark on extreme base.

Rostrum reaching hind coxae. Pubescence dense, hairs on clavus in somewhat longitudinal rows.

Genitalia: Aedeagus with vesica as shown in figure 51, *f*. Left clasper (fig. 51, *d*) large, curved with a pointed apex and calloused area on dorsal surface. Right clasper (fig. 51, *e*) smaller, with an acute and curved point apically.

Female: Similar to male in color and dimensions.

Holotype, male (US), Auluptagel, Palau Is., Sept. 1952, N. L. H. Krauss; allotype, female (US), same data as for type.

DISTRIBUTION: Caroline Is. (Palau).

This species differs from all other Micronesian species in the size, in the black color of the calli, in the clypeus and frons, and in the structure of the male genitalia.

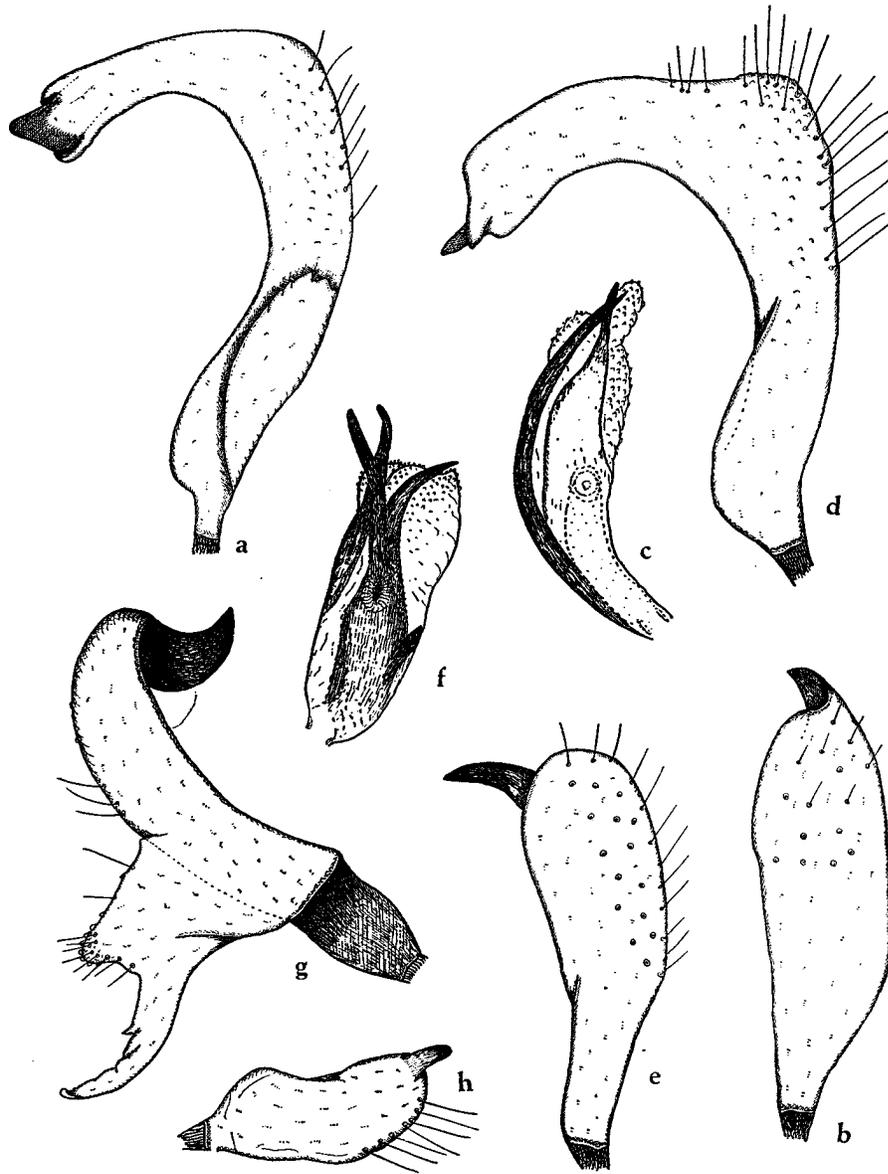


FIGURE 51.—Male genitalia. a-c, *Lygus rubrotinctus*: a, left clasper; b, right clasper; c, vesica. d-f, *L. palauensis*: d, left clasper; e, right clasper; f, vesica. g, h, *L. pallidulus*: g, left clasper; h, right clasper.

- 76. *Lygus pallidulus*** (Blanchard). (Figure 51, *g, h*.)
Phytocoris pallidulus Blanchard, 1852, IN Gay, Hist. Fis. Pol. Chile 7: 183.
Lygus apicalis Fieber, 1861, Eur. Hem., 275; new syn.
Lygus putoni Meyer, 1870, Schweiz. Ent. Ges., Mitt., 207; syn. by Puton, 1873, Soc. Ent. France, Ann. V, 3: 25.
Lygus prasinus Reuter, 1876, Ofv. K. Vet.-Akad., Forh. 32 (9): 72; syn. by Reuter, 1909, Acta Soc. Sci. Fenn. 36 (2): 43.
Lygus carolinae Reuter, 1876, Ofv. K. Vet.-Akad., Forh. 32 (9): 72; syn. by Knight, 1941, Illinois Nat. Hist. Surv. Bull. 22 (1): 154.
Lygus uruguayensis Berg, 1879, An. Soc. Ci. Argentine 16: 16; syn. by Reuter, 1907, Naturhist. Hofmus. Wien, Ann. 22 (1): 63.
Lygus godmani Distant, 1893, Biol. Cent. Am., Rhynch. 1: 433; syn. by Carvalho, 1952, Mus. Nac. Zool., Bol. 118: 7.
Lygus osiris Kirkaldy, 1902, Ent. Soc. London, Trans. 1902: 262; syn. by Poppius, 1910, IN Sjoestedt, Ergeb. Schwed. Exped. Kilimandjaro 12 (4): 39.
Lygus immitis Distant, 1904, Fauna of India, Rhynch. 2: 456; new syn.
Lygus pubens Distant, 1904, Fauna of India, Rhynch. 2: 456; new syn.
 Characterized by its pale to greenish color and the structure of the male genitalia.
Male: Length 4.0 mm., width 1.7 mm. *Head*: Length 0.2 mm., width 1.1 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.5 mm.; III, 0.8 mm.; IV, 0.5 mm. *Pronotum*: Length 0.7 mm., width at base 1.5 mm. *Rostrum*: Length 2.0 mm.
 Color greenish or yellowish green; membrane and corium often marked with fuscous, apex of cuneus black; eyes dark brown, apices of tarsi and apex of rostrum fuscous to black.
 Rostrum reaching about middle of abdomen.
Genitalia: Left clasper (fig. 51, *g*) typical for species. Right clasper (fig. 51, *h*) small, with an apical point.
Female: Similar to male in color and dimensions.
- DISTRIBUTION: Mariana Is., Caroline Is., and Bonin Is. Three males and five females.
- BONIN IS. HAAHA JIMA: Aug. 1951, R. Bohart.
 S. MARIANA IS. GUAM: Mt. Bolanos, Aug. 1952, Krauss.
 PALAU. PELELIU: Mt. Amiangal, Dec. 1952, Gressitt.
 YAP. YAP I.: Gagil District, July 1950, Goss; Ruul District, July 1950, Goss.
 PONAPE. June 1950, Adams.

I have studied the type of *Phytocoris pallidulus* Blanchard 1852 and, later on, dissected specimens from the type locality. As I stated in 1952 [Rev. d'Ent. 19(3): 1851], the synonymy of this species with *Lygus apicalis* Fieber can now be established. It seems to be a cosmopolitan species, as it has been found in all continents and zoogeographical regions.

77. *Lygus ponapensis* Carvalho, n. sp. (figs. 49, f-i; 52).

Characterized by its color and structure of male genitalia.

Male: Length 3.4 mm., width 1.4 mm. *Head*: Length 0.2 mm., width 0.8 mm., vertex 0.25 mm. *Antennae*: Segment I, length 0.5 mm.; II, 1.7 mm.; III, 1.1 mm.; IV, 0.7 mm. *Pronotum*: Length 0.6 mm., width at base 1.2 mm. *Rostrum*: Length 1.8 mm.

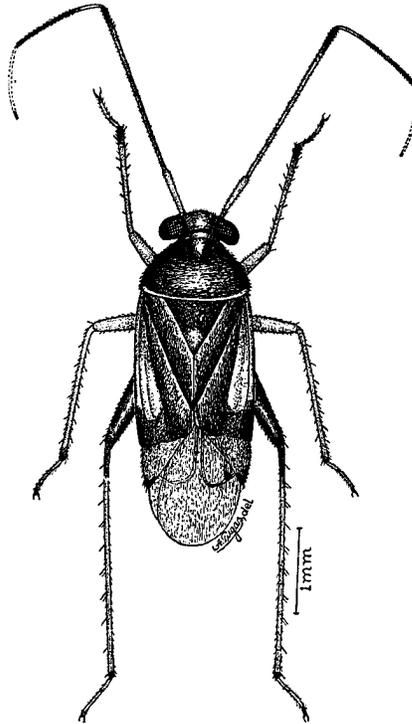


FIGURE 52.—*Lygus ponapensis*, male, paratype.

General color dark brown to black with pale-yellow markings; head, collar, slender posterior margin of pronotum, apex of scutellum, area on apical fourth of embolium and exocorium, cuneus (except extreme apex and inner angle) pale yellow to hyaline (paler area of cuneus translucent); in a few specimens a faint orange tinge is present before apex of cuneus; membrane dark with a paler area beyond apex of cuneus; underside of body with external and pleural areas piceous; sides and base of abdomen dark brown, tending to castaneous distally; coxae, bordering portion of first coxal cleft, peritreme, and middle of abdomen and legs pale yellow to hyaline; apical half of posterior femora (except extreme apex) and base of hind coxae dark brown to black; tibiae with yellow spines without cloudings or spots at base; rostrum and antennae pale yellow (except apex of first and second segments which are infuscate to black).

Rostrum reaching apices of trochanters.

Genitalia: Left clasper (fig. 49, f, g) with a somewhat laminate subapical outgrowth, the apex with a tooth. Right clasper (fig. 49, h, i) globose, with a characteristic apical spinelike projection.

Female: Length 4.5 mm., width 1.8 mm. *Head*: Length 0.2 mm., width 1.0 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.6 mm.; II, 1.9 mm.; III, 1.1 mm.; IV, 0.7 mm. *Pronotum*: Length 0.6 mm., width at base 1.5 mm.

General color as in male, pronotum with portion between calli anteriorly, lateral margins broadly, and posterior margin pale yellow; pale area of hemelytra larger, reaching endocorium in some specimens (corial commissure may also be paler in color); hind femora with obsolete pale spots on dark apical portion.

Holotype, male (US), Colonia, Ponape I., Aug. 9, 1946, H. K. Townes; allotype, female (US), Mt. Kupwuriso, Ponape, Mar. 11, 1948, H. S. Dybas. Paratypes, 15 males and 19 females. Palau: Ngariungs I., Ngaiangl (Kayangel) Atoll, Dec. 16, 1952, Gressitt; Peleliu, west coast, Feb. 2, 1948, Dybas. Ponape: Colonia, Aug. 8, 1946, Townes; Feb. 29, 1948, Dybas; Agric. Exper. Sta., Jan. 7, 1953, J. L. Gressitt; June 1950, P. A. Adams; Tolenot, June 1950, Adams; Paliker, July 17, 1939, T. Esaki; Mt. Kubersoh, Sept. 1950, Adams; Mt. Kupwuriso, Mar. 11, 1948, Dybas; Mt. Temwetemwensekir, Jan. 11, 1953, Gressitt; Mt. Pairo, Mar. 13, 1948, Dybas; Mt. Nanalaut, Jan. 13, 1953, Gressitt.

DISTRIBUTION: Caroline Is. (Palau, Ponape).

This species differs from other species in the color, in the absence of pale spots on the hind femora, and in the structure of the male genitalia. It is nearest to *L. kusaiensis*, but the hind tibiae have pale spines without spots or cloudings at the base and a longer second antennal segment.

78. *Lygus rotaensis* Carvalho, n. sp. (fig. 50, *a, b*).

Characterized by its color and structure of male genitalia.

Male: Length 3.2 mm., width 1.4 mm. *Head*: Length 0.1 mm., width 0.9 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.5 mm.; III, 0.9 mm.; IV, 0.5 mm. *Pronotum*: Length 0.6 mm., width at base 1.3 mm. *Rostrum*: Length 1.4 mm.

Color very similar to that of *L. saipanensis* but with reddish traces on pronotum and hind femora more extensively infuscate apically with distinct pale spots.

Rostrum reaching middle of abdomen (level with fifth or sixth abdominal segment).

Genitalia: Aedeagus without sclerotized spiculum. Left clasper as shown in figure 50, *a*. Right clasper (fig. 50, *b*) distinctive, with apical point blunt.

Female: Unknown.

Holotype, male (US), Rota I., June 24, 1946, H. K. Townes. Paratype, male (US), Tinian I., June 8, 1946, Townes.

DISTRIBUTION: Mariana Is. (Rota, Tinian).

This species is very near *L. saipanensis* but differs in the much longer rostrum and in the structure of the right clasper.

79. *Lygus rubrotinctus* Carvalho, n. sp. (fig. 51, *a-c*).

Characterized by its reddish color, size of body and male genitalia.

Male: Length 3.0 mm., width 1.4 mm. *Head*: Length 0.1 mm., width 0.8 mm., vertex 0.35 mm. *Antennae*: Segment I, length 0.3 mm.; II, 1.1 mm.; III, 0.5 mm.; IV, 0.4 mm. *Pronotum*: Length 0.5 mm., width at base 1.2 mm. *Rostrum*: Length 1.3 mm.

Color pale lutescent, variegated with reddish or brown; scutellum mostly red, with pale apex; hemelytra with darker clavus (fuscous to brown) and apical portion of corium, especially near commissure (this latter area reddish externally); extreme apex of cuneus reddish to reddish brown, membrane fuscous. Underside of body in some specimens variegated with red (others pale), antennae and legs pale, hind femora with two reddish rings, the uppermost one divided, base of hind tibiae infuscated in one specimen, tibial spines brown without spots at base.

Rostrum reaching hind coxae.

Genitalia: Aedeagus with vesica as shown in figure 50, *c*. Left clasper (fig. 50, *a*) curved, ended by a toothlike projection. Right clasper (fig. 50, *b*) also ended by a point.

Female: Similar to male in color and dimensions.

Holotype, male (KU), Tapotchau, Saipan I., May 6, 1940, K. Yasumatsu and S. Yoshimura; allotype, female, Matansha-Calabera, Saipan, May 3, 1940, Yasumatsu and Yoshimura.

DISTRIBUTION: Mariana Is. (Saipan).

This species has the aspect of *L. fullawayi* Usinger but differs in the size and in the structure of the male genitalia.

80. *Lygus saipanensis* Carvalho, n. sp. (fig. 49, *j*, *k*).

Characterized by its color and structure of male genitalia.

Male: Length 3.2 mm., width 1.3 mm. *Head*: Length 0.2 mm., width 0.7 mm., vertex 0.28 mm. *Antennae*: Segment I, length 0.4 mm.; II, 1.4 mm.; III and IV broken. *Pronotum*: Length 0.6 mm., width at base 1.2 mm. *Rostrum*: Length 1.1 mm.

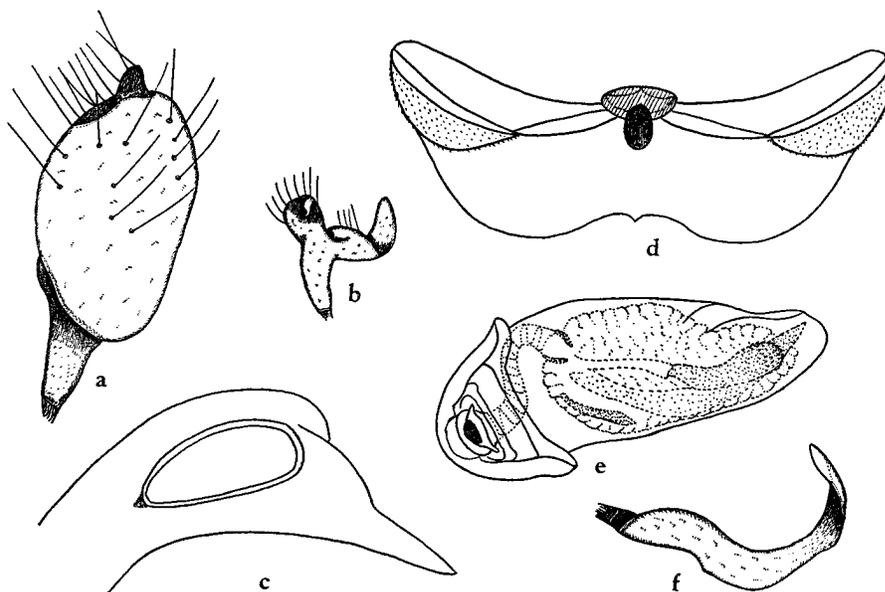


FIGURE 53.—Genitalia. *a*, *b*, *Pilophorus perplexus*: *a*, right clasper; *b*, left clasper. *c*, *d*, *Lygus trukensis*: *c*, female ring; *d*, dorsal wall of bursa copulatrix. *e*, *f*, *Palaucoris unguidentatus*: *e*, phallus; *f*, left clasper.

Color pale yellow to citrine or lutescent with dark brown or reddish areas as follows: Eyes, lateral and posterior portion of pronotum (except extreme posterior margin), scutellum (except apex), clavus (except apex and outer basal portion), corium and embolium (except median portion of exocorium and embolium), inner angle and extreme apex of cuneus, apex of hind femora (except two pale rings) and extreme base of tibiae; a reddish tinge may be present on scutellum, external apical portion of exocorium and apex of cuneus; membrane fuscous with a small elongate pale area contiguous to apex of cuneus; underside of body concolorous, the pleural portion brown, abdomen reddish with a darker longitudinal area following upper portion of tergites, genital segment dark brown basally.

Rostrum reaching hind coxae.

Genitalia: Aedeagus without sclerotized spiculum. Left clasper as illustrated (fig. 49, j). Right clasper (fig. 49, k) ended by a tooth.

Female: Similar to male in color, slightly more robust, the underside mostly pale.

Holotype, male (KU), Matansha-Calabera, Saipan I., May 3, 1940, K. Yasumatsu and S. Yoshimura; allotype, female. Paratype, female, same data as for holotype.

DISTRIBUTION: Mariana Is. (Saipan).

This species is very near *L. trukensis* but differs in the color of the scutellum (reddish) and in the structure of the male genitalia.

81. *Lygus trukensis* Carvalho, n. sp. (figs. 50, c, d; 54).

Characterized by its color and structure of male genitalia.

Male: Length 3.4 mm., width 1.3 mm. *Head*: Length 0.2 mm., width 0.8 mm., vertex 0.27 mm. *Antennae*: Segment I, length 0.5 mm.; II, 1.5 mm.; III, 1.0 mm.; IV, 0.5 mm. *Pronotum*: Length 0.5 mm., width at base 1.1. *Rostrum*: Length 1.4 mm.

General color yellowish to olive testaceous with dark brown markings; eyes, lateral and posterior margin of pronotum (broadly), clavus (except outer basal portion and apex), inner basal portion or corium (only in some specimens), corial commissure and transverse, apical fascia on corium (in some specimens reaching embolium) dark brown; extreme apex of cuneus dark brown with reddish tinge; underside of body and legs pale yellow to hyaline, sides of propleura, spots on meso- and metapleura, and more than apical half of hind femora dark brown; sides of abdomen with two (sometimes with indication of a third) brown to reddish longitudinal fasciae reaching seventh abdominal segment laterally; head with jugum, lorum, and sides of clypeus with reddish tinge, apex of rostrum infuscate; extreme base of posterior tibiae dark brown.

Rostrum reaching hind coxae.

Genitalia: Left clasper (fig. 50, c) very near that of *Lygus ponapensis* but with a broader basal portion, a shorter and wider apical portion. Right clasper as illustrated (fig. 50, d).

Female: Length 4.7 mm., width 1.8 mm. *Head*: Length 0.2 mm., width 1.0 mm., vertex 0.34 mm. *Antennae*: Segment I, length 0.5 mm.; II, 1.7 mm.; III, 1.0 mm.; IV, 0.5 mm. *Pronotum*: Length 0.5 mm., width at base 1.1 mm.

With paler color than male, the brown markings are not as evident.

Holotype, male (US), Mt. Unibot, Tol I., Truk, Jan. 1, 1952, J. L. Gressitt; allotype, Mt. Teroken, Moen I., Truk, Feb. 6, 1953, Gressitt. Paratypes, 17 males and 45 females. Caroline Atolls: Lamotrik, Feb. 5, 1953, J. W. Beardsley; Nama, Oct. 31, 1953, Beardsley. Truk: Pis, June 3, 1946, H. K. Townes; Mt. Unibot, Tol I., Jan. 2, 1953, Gressitt; Moen, Mt. Teroken, Dec.

This species differs from other species in the color, in the very marked pale spots on the hind femora, and in the structure of the male genitalia. It differs from *L. kusaiensis* in having tibiae with brown spines without spots at base and in the structure of the male genitalia.

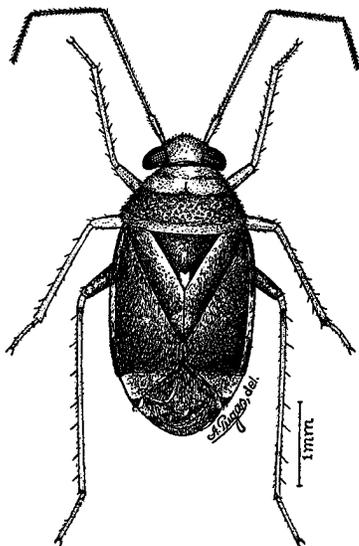


FIGURE 56.—*Lygus dybasi*, female, paratype.

Genus *Nesodaphne* Kirkaldy

83. *Nesodaphne marianensis* Usinger (fig. 57, a, b).

Nesodaphne marianensis Usinger, 1946, B. P. Bishop Mus., Bull. 189: 66.

Characterized by its color and male genitalia.

Male: Length 4.9 mm., width 1.7 mm. *Head*: Length 0.5 mm., width 1.0 mm., vertex 0.30 mm. *Antennae*: Segment I, length 0.7 mm.; II, 1.7 mm.; III, 0.8 mm.; IV, 0.5 mm. *Pronotum*: Length 0.9 mm., width at base 1.5 mm. *Rostrum*: Length 1.7 mm.

General color pale testaceous and brownish, head pale with fulvous on vertex; rostrum brown at apex; antennae pale with an oblique brown fascia at base and a broad fulvous area at apex of first segment; second segment brown with short white pubescence and with two pale rings on basal fourth, one at middle and one at apex; third segment dark brown except for pale ring at apex; fourth segment entirely brown; pronotum fulvous with paler anterior margin of collar, disc of callosities, humeri, and narrow hind margin; scutellum brownish with a white tomentum, the apex white; clavus brown with white tomentose spots basally and apically; corium with numerous pale spots occupying most of basal half, the costal area interrupted with only two brown areas; apical half more broadly brown; cuneus brown at middle and at apex; membrane dark brown at base, infumate apically, with white on apical angle of areole. Underside of body largely pale; legs pale with median and subapical brown rings on femora, two brown rings on anterior tibiae, three on middle tibiae, and four on posterior tibiae; tarsi brown.

Rostrum reaching apex of mesosternum, pubescence of pronotum placed in tufts.

Genitalia: Left clasper (fig. 57, b) complex and very characteristic. Right clasper as illustrated in figure 57, a. Pygophore seen from ventral side has appearance shown in figure, with a group of very long, wide setae on left side.

Female: Similar to male in color and dimensions.

DISTRIBUTION: Mariana Is., and Caroline Is. Thirty-four males and 89 females.

S. MARIANA IS. GUAM: Pt. Oca, June, July 1945, G. Bohart and Gressitt; Agana, May 1945; Pt. Ritidian, Aug. 1945, Gressitt; Com. Mar. Hill, Mar. 1946, Maehler.

CAROLINE ATOLLS. IFALUK: July 1953, Bates.

TRUK. MOEN: Mt. Chukumong (Teroken), Feb. 1953, Gressitt; Feb. 1949, Potts; Civ. Ad. Area, Mar. 1949, Potts. **TONOAS (Toloas, Dublon)**: Feb. 1948, Krauss, Maehler; Apr. 1938, Yasumatsu and Yoshimura.

PONAPE. Colonia, Feb. 1948, Dybas.

KUSAIE. Matanluk (Matunlik, Yegan), Jan. 1953, Gressitt; "Hill 541," Feb. 1953, Clarke.

This species differs from *N. knowlesi* Kirkaldy in the length of the rostrum, in the color of the second antennal segment, and in the hemelytra.

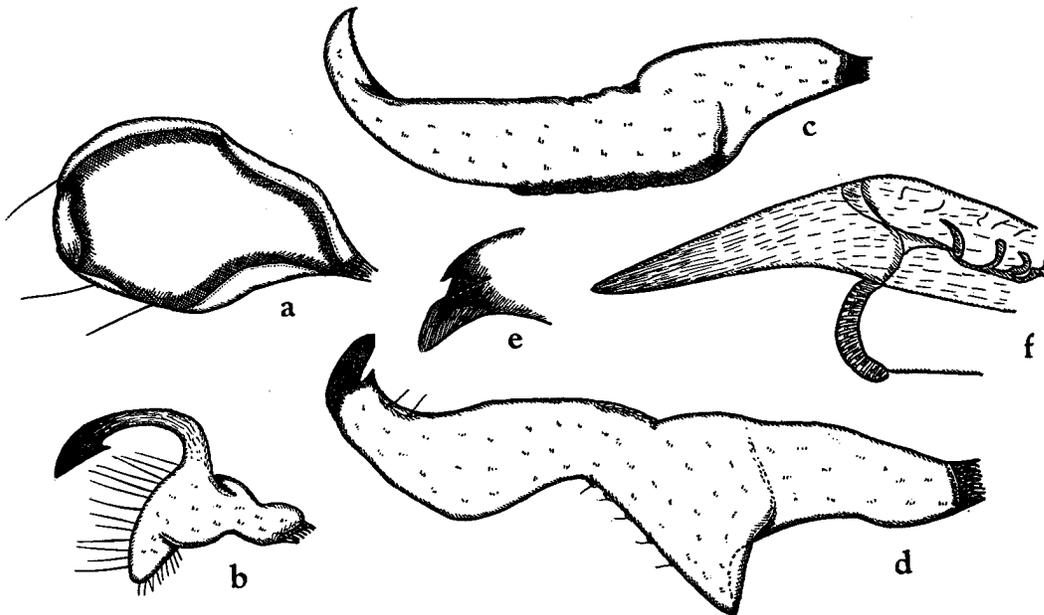


FIGURE 57.—Male genitalia: a, b, *Nesodaphne marianensis*: a, right clasper; b, left clasper. c-f, *Proboscidoecoris malayus*: c, right clasper; d, left clasper; e, apex of left clasper; f, spiculum of vesica.

Holotype, male (US), Mt. Matante, Kusaie, Feb. 1953, J. F. G. Clarke; allotype, female (US), Mt. Tafeayat, Mar. 1953, Clarke. Paratype, one female, Mt. Tafeayat, Aug. 20, 1946, H. K. Townes.

DISTRIBUTION: Caroline Is. (Kusaie).

This species differs from *Sidnia kellersi* Knight from Samoa and *S. kingbergi* Stål from Australia in the color and dimensions of antennal segments. It is larger than *S. kellersi* but has shorter antennae.

87. *Sidnia rotaensis* Carvalho, n. sp. (fig. 58, d-f).

Characterized by its color, rugose body, and male genitalia.

Male: Length 4.5 mm., width 1.1 mm. *Head*: Length 0.2 mm., width 1.2 mm., vertex 0.40 mm. *Antennae*: Segment I, length 0.5 mm.; II, 1.3 mm.; III, 0.6 mm.; IV, 0.5 mm. *Pronotum*: Length 0.8 mm., width at base 1.7 mm. *Rostrum*: Length 1.5 mm.

Color dark brown to castaneous; first antennal segment pale, second segment castaneous, black apically, third and fourth segments black, whitish basally; posterior margin of pronotum, extreme apex of embolium, and base of cuneus whitish or pale; clavus with silvery tomentose tinge, cuneus piceous black, membrane fuscous; underside concolorous, the peritreme and a large area on middle of abdomen, inferiorly, white; legs castaneous, apices of anterior femora, tibiae (the hind pair only apically), tarsi, and rostrum pale.

Rostrum reaching middle coxae, body rugose but not punctate, densely pilose, head finely margined on vertex, much wider than long, eyes very large, scutellum large and strongly raised well above level of hemelytra, membrane minutely pilose.

Genitalia: Aedeagus with vesica as in figure 58, f. Left clasper (fig. 58, d) falciform and large. Right clasper (fig. 58, e) small, simple.

Female: Length 5.1 mm., width 2.2 mm.; similar to male in color but more robust.

Holotype, male (US), Rota, Apr. 23, 1946, H. K. Townes; allotype, female (US), same data as for type.

DISTRIBUTION: Mariana Is. (Rota).

This species differs from *S. kusaiensis* in the color (with pale areas), in the more slender second antennal segment, in the more rugose body, and in the structure of the male genitalia.

ADDITIONAL SPECIES NOT DESCRIBED IN THIS PAPER

As a result of the present survey, it is known that at least five new species occur in Micronesia. However, they cannot be adequately described at this time because no males are available. These specimens, on deposit in Bishop Museum, are as follows: *Bakeriola* species, Ngergoi (Garakaio) Island, Palau; *Bertsia* species, Kusaie, Mount Matante; *Felisacus* species, inlet near Koror Island, Palau; *Nesodaphne* species, Ine Island, Marshalls; *Deraeocoris* species, Koror Island, Palau.