

AQUATIC AND SEMIAQUATIC HETEROPTERA OF TAHITI*

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Very little has been recorded hitherto concerning the waterbug fauna of the Society Islands. The first species was recorded from Tahiti many years ago by Stål¹ as *Gerris discolor* Stål. Stål described his species from material received from Tahiti, China, and Manila. The types (male and female), which are still in the possession of the Swedish State Museum of Natural History at Stockholm, are from Manila and are identical with *Limnogonus fossarum* (Fabricius). Unfortunately the Tahitian specimens are lost, but they probably belonged to another species, *L. luctuosus* (Montrousier),² the only species known to me from Tahiti that has the general appearance of *L. fossarum*. It was originally described from New Caledonia.

The second species to be recorded from Tahiti was *Microvelia prompta* Cheesman,³ which is not known elsewhere and may be endemic.

Mr. E. P. Mumford, Director of the Pacific Entomological Survey, has sent me for study a small collection of waterbugs taken on Tahiti by his associate, Mr. A. M. Adamson. This includes but one species, *Limnogonus luctuosus* (Montrousier). From Mr. W. E. China of the British Museum (Natural History) I have received a further collection from the Society Islands, and this includes four species taken on Tahiti and Raiatea by Miss L. E. Cheesman of the St. George Expedition. In addition to *L. luctuosus*, mentioned above, Miss Cheesman's collection includes the previously described *Microvelia prompta* Cheesman, and *L. cheesmani* and *Anisops tahitiensis*, both of which are here described as new.

FAMILY NOTONECTIDAE

SUBFAMILY ANISOPINAE

Anisops tahitiensis, new species (fig. 1, a-c).

Male

Length of body about 6.0 mm. Head large, as wide as greatest width of prothorax. Eyes large. The relative measurements for synthlipsis, widest part and narrowest part

¹ Stål, C., Hemiptera, species novas descripsit: Kongliga Svenska Fregatten Eugénies resa omkring jorden under befäl af C. A. Virgin åren 1851-1853, Zoologi, vol. 4, p. 265, Stockholm, 1859.

² Montrousier, P. (and Perroud, B. P.), Essai sur la faune entomologique de Kanala (Nouvelle-Caledonie): Annales de la Soc. Linnéenne de Lyon, nouv. sér., vol. 11, p. 242, 1864.

³ Cheesman, L. E., Two new species of Veliidae from the southeast Pacific: Ann. Mag. Nat. Hist., 9th ser., vol. 18, p. 364, 1926.

* Pacific Entomological Survey Publication 6, article 26. Issued May 16, 1934.

of notocephalon are 2.5, 6.0, and 4.2 respectively. The lower part of the notocephalon is provided with a sharp, simple, longitudinal keel. The keel extends from the end of the clypeus up to about $1/3$ of the length of the notocephalon. The prongs of the beak are long, their upper ends being sharply pointed and curved backward. Antennae of usual shape, last segment dorsally in the second fourth carrying a number of short and thick peglike spines. Second segment ventrally with some four very long, distally distended and truncated, spadelike bristles. The last segment has shorter bristles of the same shape.

Pronotum, seen from above, much shorter than length of eyes ($2:3$) when the two parts are compared in their maximum extension. Its posterior margin is roundedly incised in the middle.

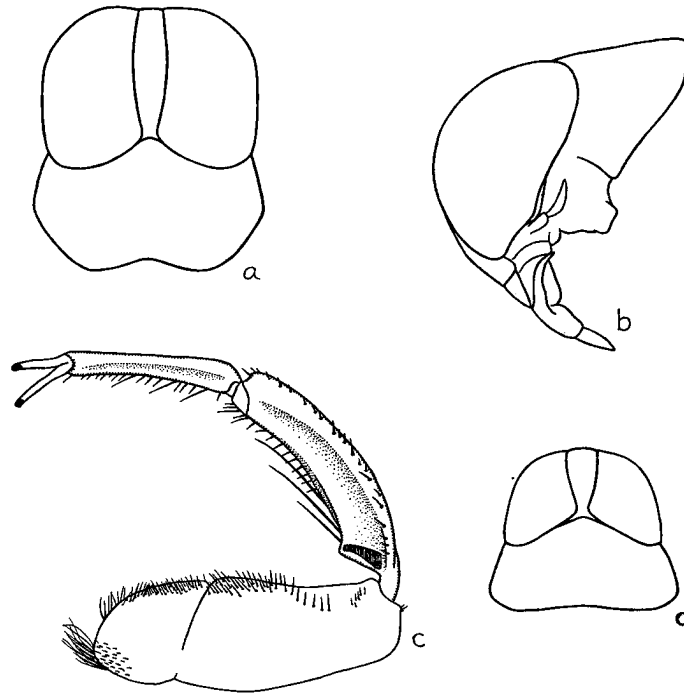


FIGURE 1.—*Anisops tahitiensis*, new species, male: *a*, head and pronotum from above; *b*, same in side view; *c*, anterior leg. *Anisops cleopatra* Distant, male: *d*, head and pronotum, from above (for comparison).

The anterior legs resemble those of *Anisops cleopatra* Distant and thus are not very characteristic. The femur ends broadly rounded. The tibial comb consists of about 32 pegs, of which those near the extensor (dorsal) side of the tibia are thicker than the other, which taper in thickness and length gradually toward the flexor side. There are very few more conspicuous, larger bristles at the inner side of the tibia; near and above the comb at the extensor side there are two or three longer bristles only, and then follows a row of very small, insignificant spines. There are no spines or pegs at the apex of the tibia, but the dorsal half of the inside of the tibia has, as usual, a fell of crowded bristles, increasing in length toward distal end of tibia. The tibia is fairly wide, with the extensor side evenly curved. The tarsus has no remarkable spines.

Female

Length of body about 6.7 mm. Head not so wide as in the male, a little narrower than pronotum. Eyes smaller. Synthlipsis and notocephalon wider and ventral part of notocephalon convexly swollen but without distinct keel. Pronotum as long as eyes, seen from above. Anterior femora more slender than in the other sex.

Tahiti: July 20, 1925, without accompanying field data, L. E. Cheesman.

The species described above is closely allied to *Anisops cleopatra* Distant (fig. 1, *d*), but is decidedly larger and has a much wider head. The foreleg is very much the same in both species. In the male *A. cleopatra*, the ventral part of the notocephalon has no keel.

FAMILY VELIIDAE

Microvelia prompta Cheesman.

Microvelia prompta Cheesman, Ann. Mag. Nat. Hist., 9th ser., vol. 18, p. 364, 1926; Lundblad, Arch. Hydrobiol., Suppl.-Bd. 12, p. 345, 1933.

Tahiti: Two specimens without accompanying field data; a third from Lake Vaihiria, July 17, 1925, L. E. Cheesman.

This species is so far known only from Tahiti, where it is said to occur commonly in many places.

FAMILY GERRIDAE

SUBFAMILY GERRINAE

Limnogonus luctuosus (Montrousier) (fig. 2, *b, c*; 3, *a*).

?*Gerris discolor* Stål, Freg. Eugenes resa, Zool., vol. 4, p. 265, 1859.

Gerris luctuosa Montrousier, Ann. Soc. Linn. Lyon. nov. ser., vol. 11, p. 242, 1864; Distant, Sarasin and Roux, Nova Caled. Zool., vol. 1, pt. 4, p. 384, 1914.

?*Limnometra lineata* Carpenter, Royal Dubl. Soc., Scient. Proc., new ser., vol. 7, p. 141, 1891.

Limnogonus luctuosus (Montrousier), Esaki, Insects of Samoa, part 2, p. 70, 1928; Lundblad, Arch. Hydrobiol., Suppl.-Bd. 12, p. 380, 1933.

Limnogonus discolor (Stål) Esaki, Insects of Samoa, part 2, p. 70, 1928.

Tahiti: Papenoo Valley, altitude 300 meters, 10 kilometers from sea, October 26-30 and December 4, A. M. Adamson; without accompanying field data, 1925, L. E. Cheesman.

Raiatea: May, 1925, L. E. Cheesman.

The present species was discussed in my paper on the Hemiptera of the Sunda Islands, cited above, and will not therefore be described again here. It closely resembles *L. fossarum* (Fabricius); the characters in which the

two species differ from each other are mentioned in that paper. Some drawings, however, are included here to demonstrate the coloring of the sides of the mesothorax. The coloring is, of course, not quite constant, but in spite of this highly important. In *L. fossarum* the yellow lateral line tapers posteriorly, whereas in *L. luctuosus* it increases in width and ends truncated

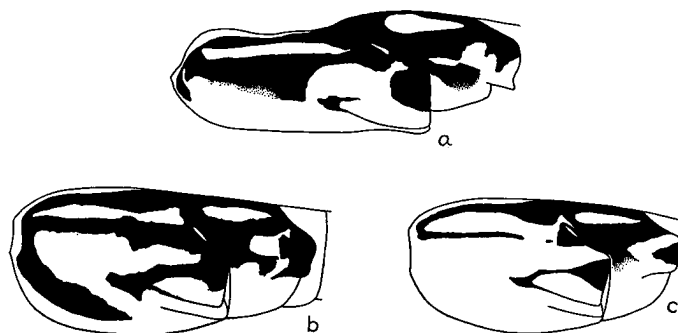


FIGURE 2.—Coloring of mesothorax and metathorax of *Linnogonus*: a, *L. fossarum* (Fabricius), winged; b, *L. luctuosus* (Montrousier) apterous, from Tahiti; c, *L. luctuosus* (Montrousier), apterous, from New Caledonia.

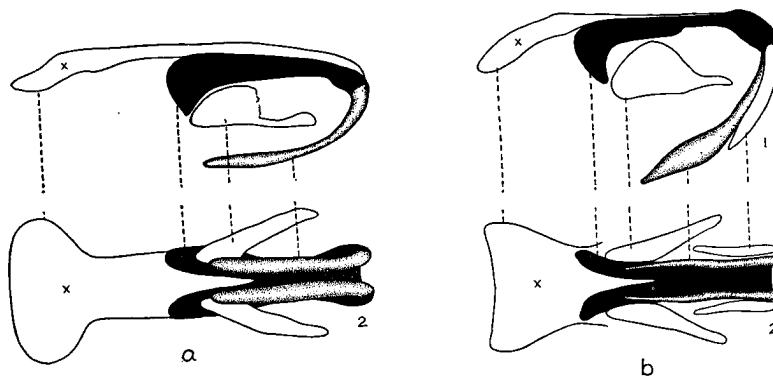


FIGURE 3.—Aedeagus of *Linnogonus*: a, *L. luctuosus* (Montrousier) (1, in side view; 2, from beneath); b, *L. fossarum* (Fabricius) (1, in side view; 2, from beneath); x, endosoma. Dorsal arm black, ventral arm dotted, lateral arm unmarked.

(compare fig. 2, a and b). Sometimes, though apparently seldom, the broad, black line bordering the yellow one from beneath is more or less obliterated (fig. 2, c). In some specimens there is a broad, black line or spot originating from near the anterior end of the mesothorax, where it joins the two other black lines (fig. 2, b); the free end of the spot is directed backward-downward.

The structure of the aedeagus of the two allied species is quite unknown. It presents very striking specific differences, especially in the so-called endosoma, which is spadelike, distended, and rounded at the apex in *L. luctuosus*, and excavated with the side corners projecting in *L. fossarum*. There are also some other differences, as can best be seen in figure 3, such as the presence of two pairs of lateral arms in *L. fossarum*, and one pair in *L. luctuosus*. The pair which is represented in both species is when seen from the side very broad, but has a long slender handle. In the figure the dorsal arm is black, the ventral one dotted, and the lateral one not especially marked.

***Limnogonus cheesmani*, new species (figs. 4, 5).**

Male

Apterous form, length of body 5.0 mm. Shape short and robust, broadest at the second pair of acetabulae, which project considerably laterally. Abdomen shorter in relation to pronotum and head than in *L. fossarum* or *L. luctuosus*. Yellow coloring as in *L. luctuosus*, but the two spots on the pronotum are much broader. The midline of the dorsal side of the abdomen is dirty yellow, the broad, longitudinal band not being interrupted for each segment as in *L. luctuosus*. The characteristic color of the mesothoracic and metathoracic sides can be seen from the figure. Because of the very limited material it is impossible to say whether the color marking here figured is the most common one in the species. Probably it varies to some degree. At any rate the yellow line on the side of the mesothorax is not distended apically and the yellow spot on the metathorax is connected with the yellow part of the lower side of the metathorax. The color of the whole body differs also in being dull, not shining as in *L. fossarum* and *L. luctuosus*.

The relative figures for the segments of antennae, rostrum, and foreleg (femur, tibia, tarsus) are:

	I	II	Accessory segment 1	III	Accessory segment 2	IV
Antennae	36	21	1.5	20	0.5	27.5
Rostrum	8	4	29	9
Anterior leg	54	45	5	9

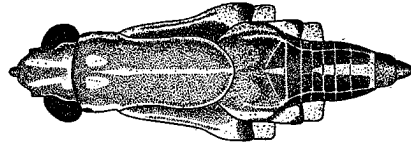


FIGURE 4.—*Limnogonus cheesmani*, new species, male.

As the last abdominal and genital segments are damaged, they cannot be fully described. The eighth cylindrical abdominal segment has the distal end excavated dorsally in the middle. It seems as if the same segment had been slightly protruded ventrally in the middle, perhaps in the same manner as in *L. luctuosus* or *L. fossarum*. The seventh segment is not so angularly incised ventrally as in *L. fossarum*, but seems to be evenly rounded. Unfortunately the aedeagus is also badly damaged, but the end of the endosoma is well preserved and of characteristic shape, being very little distended at the tip, which is rather blunt. The lateral arms of the aedeagus armature are provided with a long handle. I am unable to say whether the short and thick arm (black in the figure)

actually belongs to the dorsal arm (and not to the lateral), but I feel inclined to believe so. The parameres are rudimentary, broad, pointed at the apex and carry some long bristles.

Female

Apterous form, length of body 6.6 mm. In the obsolete and dull color the female resembles the other sex. Body much shorter and broader than in *L. fossarum* or *L. luctuosus*. Abdomen with a broad, yellowish or brownish, longitudinal band dorsally throughout. Connexiva broadly bordered with the same color. Last abdominal segment angularly projecting ventrally in the middle as in *L. luctuosus*, hence much slighter than in *L. fossarum*. There are, however, no lateral projecting teeth as in *L. luctuosus* or *L. fossarum*, the ends of the connexiva being blunt and obtusely cut off.

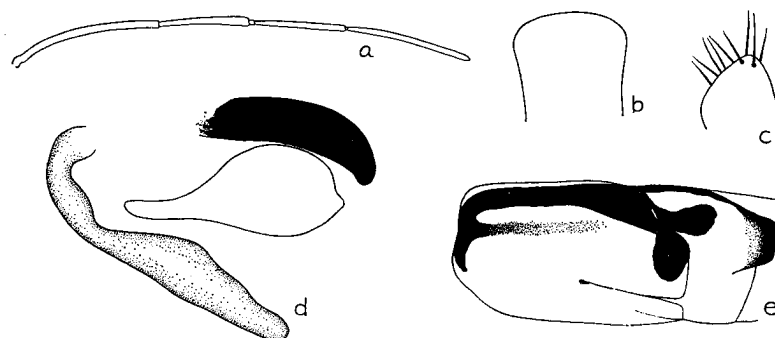


FIGURE 5.—*Linnogonus cheesmani*, new species, male: *a*, antenna; *b*, endosoma; *c*, paramere; *d*, parts of aedeagus; *e*, mesothorax and metathorax in side view. Dorsal arm black, ventral dotted, lateral unmarked.

Raiatea: 3 specimens (1 male, 2 females), May, 1925, L. E. Cheesman.

Two very small species of *Linnogonus* have already been described from the Pacific islands, *L. buxtoni* Esaki and *L. hopkinsi* Esaki, both from Samoa. *L. buxtoni* is even smaller than *L. cheesmani*, and both species differ in that the female sex has the last abdominal segment ventrally truncate at apex, and without toothlike processes.