The absence of any trace of a granulate crest on the palm and the presence of the four short ridges on one side of the carapace agree with *M. pacificus*.

At the inner angle of the wrist is a row of rather high conical granules.

Family **PINNOTHERIDAE** H. Milne-Edwards.

Genus PINNOTHERES Latreille.

Pinnotheres semperi Bürger.

Bürger, 1895, p. 382, pl. IX, fig. 28, pl. X, fig. 27.
Tesch, 1918*a*, pp. 250 and 255.

Material. — Lampasing (Sumatra), **12-IV-29**, an ovigerous ♀ (*l.* and *b.* of carapace = 7.8 and 8.1 mm. respectively).

Remarks. — This specimen is referable to *P. semperi* from Java, according to the key drawn up by Tesch (1918*a*, pp. 251-255). It agrees well with Bürger's description and figures as regards the much reduced fourth pair of walking-

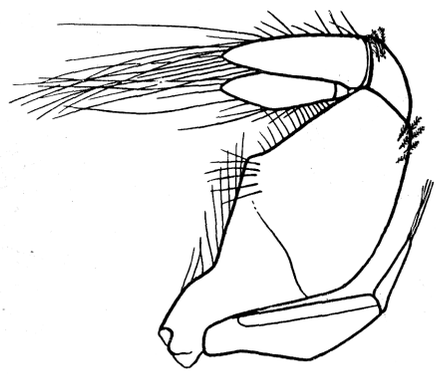

Fig. 9. — *Pinnotheres semperi* Bürger. — Third maxilliped : × 20.

legs and the rather massive chelipeds (Bürger, 1895, pl. IX, fig. 28*a*.) The carapace has the same general outline but is probably smoother and more arched dorsally than in the type specimens the cardiac region, especially, being rather elevated. The front also is more depressed, is scarcely visible in dorsal aspect and bears a rather longer pubescence than do the sides of the carapace. This pubescence is sparse, almost absent on the raised central part of the carapace but may have been rubbed off. There are longish plumose setae on the inner surface of the chelipeds and on the dorsal margin of the walking-legs in addition to the felt mentioned by Bürger.

The external maxilliped is as represented in fig. 9; the dactylus is almost as wide and as long as the propodus, as described by Bürger. When the dense pubescence was removed from the outer surface of the main mero-ischial seg-

ment, a distinct indication of a suture is seen on both maxillipeds (fig. 9); there is, however, no trace of a suture on the inner surface. It is unusual to find such a well-marked superficial suture in the sub-family *Pinnotheridae*.

Unfortunately, I have no data regarding the host with which this specimen was associated but, judging from the shape of the dactylus of the third maxilliped, it was probably a Holothurian. The types of *P. semperi* were found in *Holothuria fuscocinerea*.

Until the type specimens of *P. semperi* are re-examined it is by no means certain that the determination of this Lampasing specimen is correct. *P. semperi* would appear to be a rare form since this is probably only the second record in a period of 39 years.

Pinnotheres villosulus GUÉRIN.

RATHBUN, 1924, p. 13, pl. I, fig. 8 (*ubi bibl. et syn.*).

MATERIAL. — Eiland Enoe, **24-III-29**, 7 ♀ (4 ovigerous another specimen has a large ♀ and a small ♂ Bopyrid on the left side).

? New Guinea, 1 ♀ (much damaged) and 2 ♂.

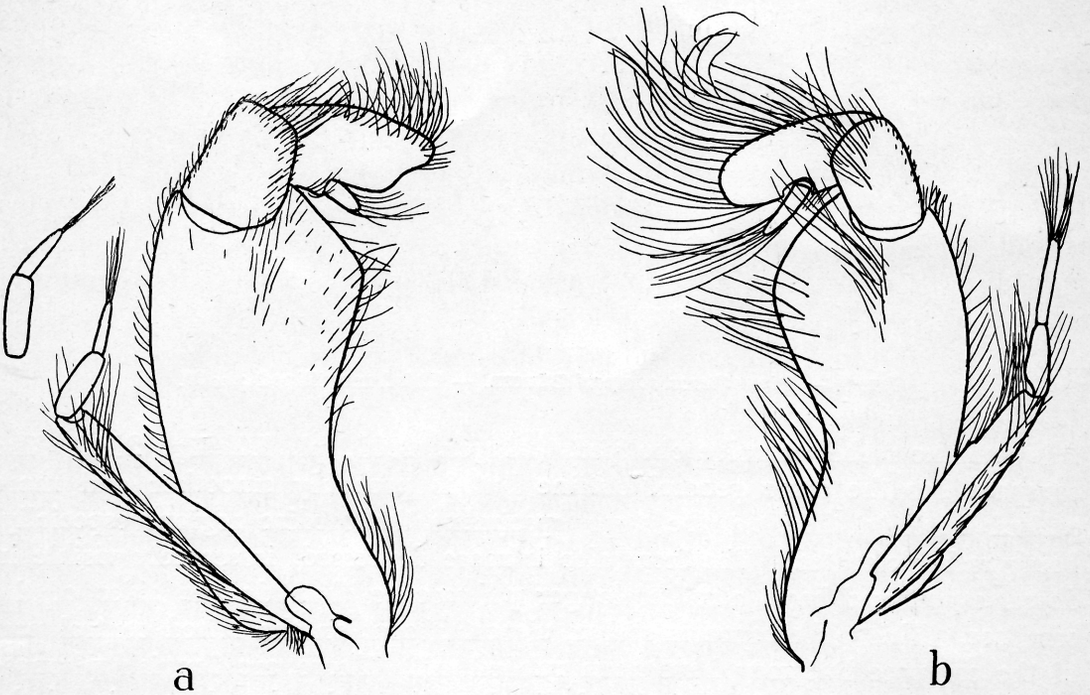

FIG. 10. — *Pinnotheres villosulus* GUÉRIN. — *a.* and *b.* Third maxilliped to illustrate variation in length of setae and in shape and size of dactylus and propodus. (*a.* ×16; *b.* ×20.)

REMARKS. — The carapace in all the specimens is similar to that figured by Rathbun but, when denuded, is distinctly angular near the middle of each

lateral border though to a much less degree than in *P. trichopus* (Tesch, 1918*a*, p. 256, pl. XVII, fig. 6).

The third maxilliped varies somewhat from specimen to specimen. In all those from Eiland Enoe the setae are very long, the dactylus and palp of the exognath are of the type represented in fig. 10*b* though the propodus is sometimes more truncated distally. In the female from ? New Guinea the setae, dactylus and palp of the exognath are all shorter and the propodus is distally truncated near the apex (fig. 10*a*).

The male specimens, one of which is very small, probably also belong to this species. The carapace is smooth, polished and coarsely punctate. In general outline that of the larger specimen is similar to *P. mactricolus* (1) Alcock (1902, pl. LXII, fig. 4). The external maxilliped is similar to that represented in fig. 10*b* but the dactylus is extremely short. First pleopod as represented in fig. 11.

Pinnotheres sp.? (aff. **edwardsi** De Man).

Material. — ? New Guinea, 1 ♂ (carapace, *l.* = *b.* = 7 mm.).

Remarks. — This specimen differs from the males referred to *P. villosulus* in several respects. (1) The carapace is soft and poorly calcified with a short dense pubescence round the lateral margins and on the front. There are also patches of this pubescence here and there on the dorsal surface (which is now rather indented) suggesting that it may have been uniformly covered. (2) The front is narrower. (3) The third maxilliped is rather similar but the dactylus is contracted distally and reaches to the inner end of the obliquely truncated propodus (fig. 11*c*). (4) The first pleopod also is more slender, less setose and more obtuse at the apex (*cf.* fig. 11*a* and *b*).

The chelae are similar to those of *P. villosulus*, the movable finger being armed with a tooth which fits into a depression between two smaller teeth on the lower one.

If the dactylus of the external maxilliped be regarded as reaching to the end of the propodus, this specimen is most closely related to *P. edwardsi* De Man, *P. kutensis* Rathbun and *P. obesus* Dana (= *P. siamensis* Rathbun) in Tesch's key (1918*a*, p. 252) but it certainly does not agree with either of the two latter species as figured by Rathbun (1910*a*, pp. 335-336, text-fig. 19 and 20). *P. edwardsi* is known only from the female; according to Tesch's description the dactylus and propodus of the external maxilliped seem to agree with fig. 11*c*, although he does not mention the distal narrowing of the former segment.

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(1) According to Tesch's key (1918*a*, p. 252) the males are referable to this species but in all probability the key should be used only for the determination of female specimens.

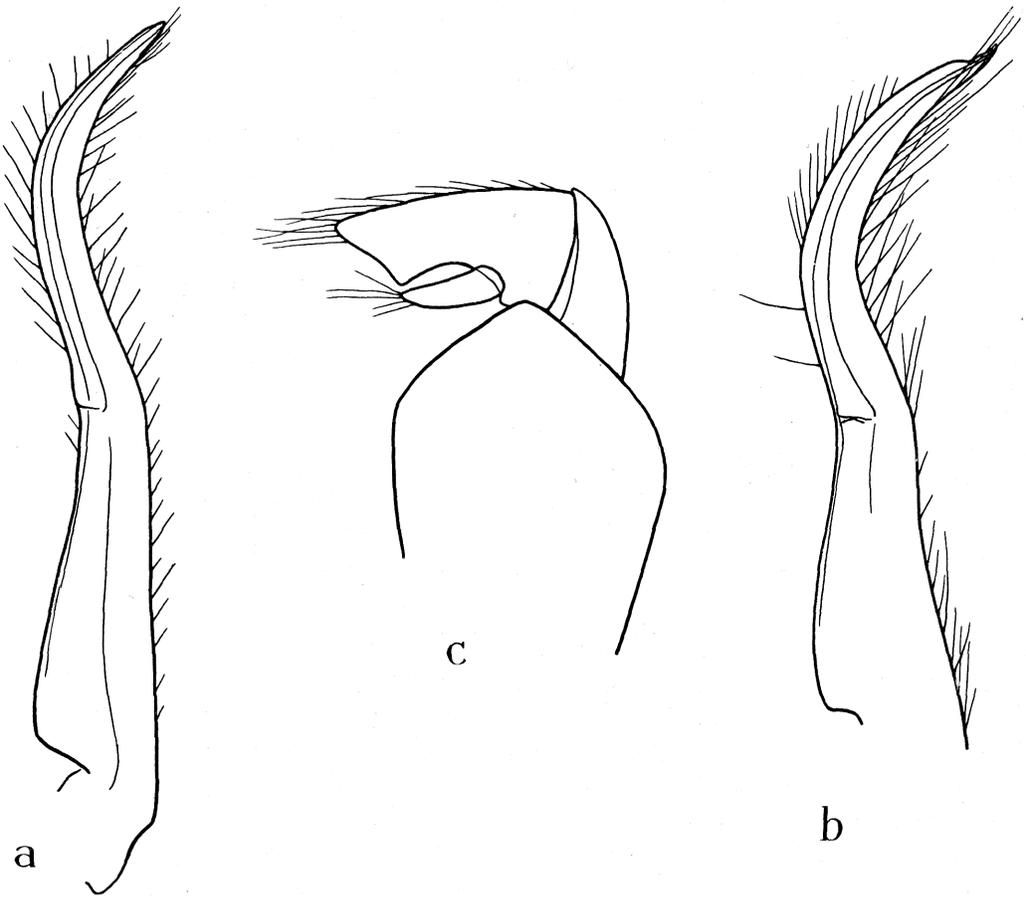

FIG. 11. — *Pinnotheres* aff. *edwardsi* DE MAN. — *a*. First pleopod of male.
c. Distal part of third maxilliped.
Pinnotheres villosus. — *b*. First pleopod of male. (*a*. and *b*. ×36; *c*. ×47.)

FAMILY **GONEPLACIDAE** DANA.

Genus LITOCHEIRA KINAHAN.

Litocheira sp.?

MATERIAL. — Eiland Weim, 26-II-29, 1 immature ♂.

REMARKS. — This small specimen is allied to *L. setosa* (A. Milne-Edwards) and to *L. affinis* Tesch. It agrees with the latter in having the carapace length rather less than the fronto-orbital border, and considerably more than 2/3 of the carapace width. The external orbital angle is less prominent than in *L. affinis* but rather more so than in *L. setosa*; the external maxilliped is similar to that of *L. affinis* (Tesch, 1918*a*, pl. VII, fig. 2*a*, 1*a* and 2*b*). It is doubtful, however, whether it belongs to either of these species as there are distinct traces

of 1-3 spinules on the dorsal border of the merus of each of the three anterior walking-legs, as in *e. g. L. quadrispinosa* Zehntner. But again the merus of the external maxilliped is more quadrate than in the latter species.

There are two broad lobes with spinose apices on each antero-lateral border. Only the right chela remains. There are a few small teeth on the lower and upper inner margins of the merus and a blunt triangular lobe at the inner angle of the carpus. The chela is clothed with fine long silky hairs and there are a few scattered granules on the palm especially on the lower third. The dactylus is nearly twice as long as the dorsal border of the palm.

The following are the more important measurements in mm. :

Length of carapace	= 2.5
Greatest breadth of carapace...	= 3.15
Length of fronto-orbital border	= 2.7
Length of front...	= 1.5

Litocheira sp.? (aff. **quadrispinosa** Zehntner).

Material. — Banda Neira, **24-II-29**, 1 small ♀ (carapace *l.* = **3.3**, *b.* = **4.5** mm.).

Remarks. — This small specimen is apparently allied to *Litocheira quadrispinosa* (1) from which it differs in several respects. (1) There is a minute third spine on the antero-lateral border. (2) There is not much trace of the distinctive colour pattern near the front of the carapace. (3) The upper surface of the wrist of each cheliped bears 3-4 small spines in addition to the prominent curved one at the inner angle. (4) The setae on the legs and carapace are, for the most part, soft and plumose. (5) There are only two spines on the merus of each of the three anterior walking-legs, a minute terminal one and a larger one on the distal third of the dorsal margin.

Family **POTAMONIDAE** Ortmann.

Genus PARATHELPHUSA H. Milne-Edwards.

Parathelphusa (Parathelphusa) incerta (Lanchester).

Potamon (*Parathelphusa*) *tridentatum incertum* Lanchester, 1900, p. 749, pl. XLVI, fig. 10.
Potamon (*Parathelphusa*) *incertis* Rathbun, 1905, pp. 229 and 238.

Material. — Sabang, **12-V-29**, 1 ♂.

(1) Zehntner, 1894, p. 171, pl. VIII, fig. 11 and 11*a*.
Tesch, 1918*a*, pp. 164 and 168, pl. VII, fig. 3 and 3*a*.

Remarks. — This specimen agrees well with Lanchester's material from Singapore, with which I have compared it. The distal segments of the abdomen are represented in fig. 12.

Distribution. — Singapore and Sabang.

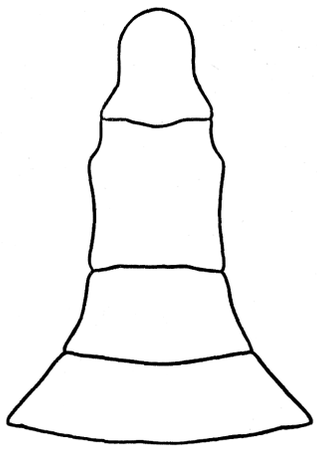

Fig. 12. — *Parathelphusa* (*Parathelphusa*) *incerta* (Lanchester). Segments 4-7 of male abdomen : ×2.

Family **XANTHIDAE** Alcock.

Section I. **HYPEROLISSA.**

1. Genus CARPILODES Dana.

Carpilodes bellus (Dana).

Odhner, 1925, pp. 10 and 16, pl. I, fig. 9.

Material. — Banda Neira, **24-II-29**, 1 ♂ with parasitic Rhizocephalan.

Carpilodes lippus (Nobili).

Chlorodius lippus Nobili, 1906, p. 263, pl. X, fig. 8.
Carpilodes lippus Odhner (M. S. name in Berlin Museum).

Material. — Banda Neira, **24-II-29**, 1 ♂ (Dr. H. Balss det.).

Remarks. — Dr. Balss has sent me the following communication with regard to this species; « unter Dekapoden des belgischen Kronprinzen, die ich Ihnen sandte, befand ich auch ein Ex. von *Chlorodius lippus* Nobili. Ich schrieb Ihnen schon dass die Gattungsbezeichnung Nobilis falsch sei. Inzwischen habe ich aus dem Museum Berlin Examplare dieser Art gesehen, die

Odhner bestimmt hatte und denen er den Namen *Carpilodes lippus* (Nob.) gegeben hat. Er hat diesen Namen aber in seiner Arbeit **1925** nicht publiziert » (**13-VI-33**).

The apex of the first pleopod of the male is of a rather unusual type, with a broad scroll-like projection on one side as represented in fig. **13**.

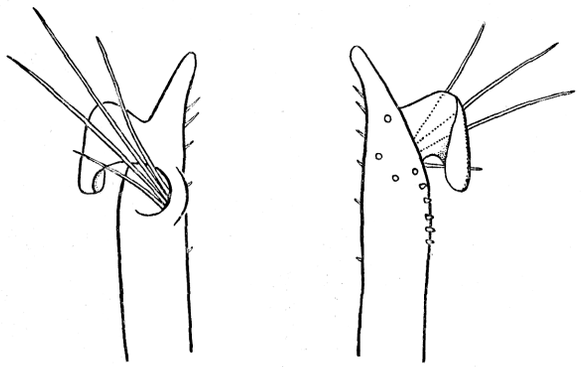

FIG. 13. — *Carpilodes lippus* (NOBILI). — Apex of first pleopod of male to show subterminal scroll-like lobe : × 100.

Carpilodes rugatus (EDW.) A. MILNE-EDWARDS.

ODHNER, 1925, pp. 11 and 20, pl. I, fig. 16.

MATERIAL. — Banda Neira, **24-II-29**, 1 young ♂.

Carpilodes stimpsoni A. MILNE-EDWARDS.

ODHNER, 1925, pp. 10 and 17, pl. I, fig. 10.

MATERIAL. — Banda Neira, **24-II-29**, 1 ♂.

2. Genus ATERGATIS DE HAAN, A. MILNE-EDWARDS.

Atergatis floridus (RUMPH.).

ALCOCK, 1898, pp. 95 and 98.

MATERIAL. — Lampasing (Lampong), **12-IV-29**, 2 ♂.

Kampong Todowangi Mangrove, Djailolo, **16-II-29**, 1 ♂.

REMARKS. — The first pleopod of the male is long and slender; the apex is as represented in fig. **14***a* and *b*. The 5-8 long slender setae are replaced by a few much shorter ones in *Atergatis integerrimus* (Lam.) and are entirely wanting in *A. reticulatus* (de Haan) (fig. **14** A, *a* and *b*).

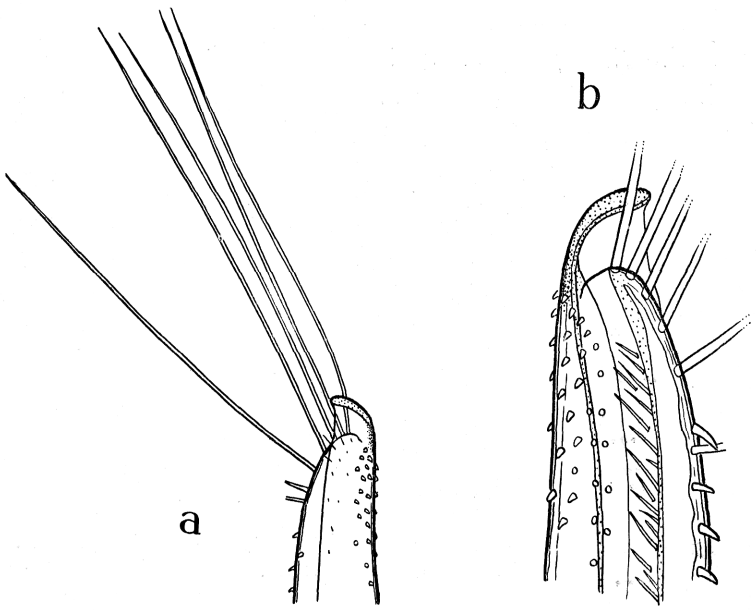

FIG. 14. — *Atergatis floridus* RUMPH. — *a*. Apex of first pleopod of male from concave side : ×27. *b*. Same from convex side : ×60.

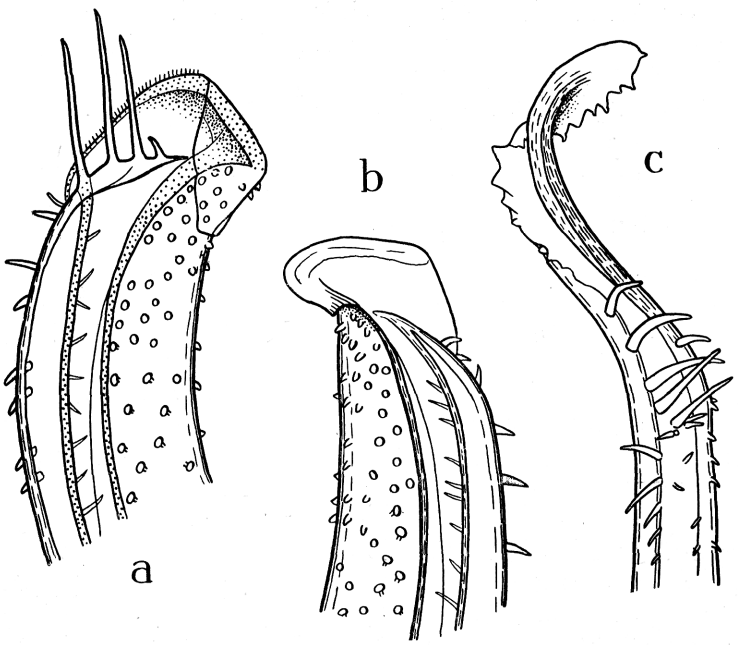

FIG. 14A. — Apex of first pleopod of male of : *a*. *Atergatis integerrimus* (LAM.). *b*. *Atergatis reticulatus* (DE HAAN). *c*. *Etisus laevimanus* RANDALL : × 60.

3. Genus PLATYPODIA Bell.

Platypodia maculata (De Man).

Lophactaea maculata De Man, 1888, p. 250, pl. IX, fig. 1.
Lophactaea maculata De Man, 1902, p. 588.

Material. — Banda Neira, **24-II-29**, **2** ♀ (one ovigerous), **1** ♂.

Remarks. — These specimens agree very closely with de Man's description and figure; the spots on the dorsal surface of the carapace are still distinct though rather faint. The first pleopod of the male differs from that of *P. granulosa* (Rüppell) A. Milne-Edwards in being rather more slender and sinuous, with a longer terminal beak-like projection and in having **12** instead of only **2** subterminal setae (1) (*cf.* fig. **15***a* and *b*).

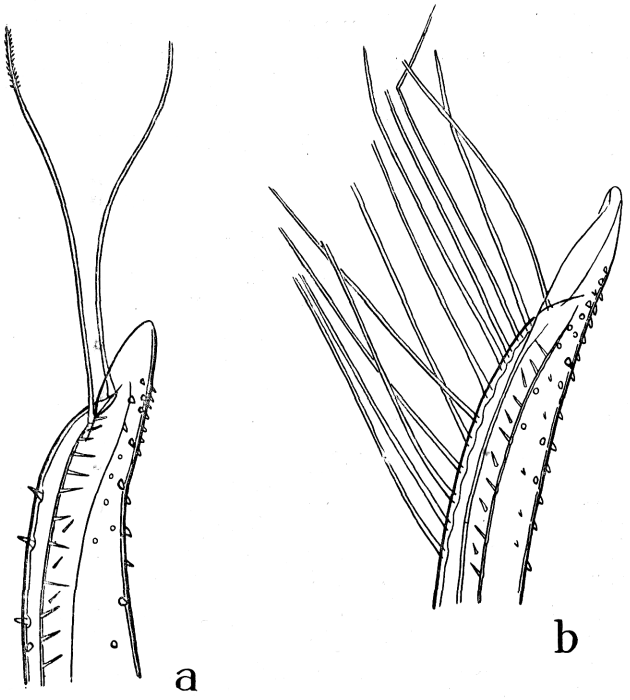

Fig. 15. — Apex of first pleopod of male of : *a. Platypodia granulosa* (Rüppell). *b. Platypodia maculata* (De Man); ×60.

Platypodia granulosa (Rüppell).

Lophactaea granulosa Alcock, 1898, pp. 100 and 101.
Lophactaea granulosa De Man, 1902, pp. 582 and 587.

Material. — Banda Neira, **24-II-29**, **4** ♂, **1** ♀.

Remarks. — See under *P. maculata*.

(1) These setae are nearly all incomplete distilly and may be considerably longer.