

## PYCNOGONIDA FROM THE QUEENSLAND COAST.

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(Nine Text-figures.)

INCLUDING those from Torres Strait, the number of species of Pycnogonida known from the coast of Queensland comprises only about eight, as follows:—*Nymphopsis armatus* Haswell, 1884, Port Molle; *Rhopalorhynchus kröyeri* Wood-Mason, 1873 (*R. tenuissimus* Haswell, 1884), Port Denison; *Pallenopsis hoekii* (Miers), 1884, Torres Strait; *Endeis* (= *Phoxichilus*) *charybdæus* (?) (Dohrn), 1880, Port Molle; *Parapallene australiensis* (Hoek), 1881, Torres Strait; *Parapallene haddonii* Carpenter, 1892, Torres Strait; *Ascorhynchus tenuirostris* Carpenter, 1892, Torres Strait.\*

Of the above it is certain that the species believed by Professor Haswell to be identical with *Phoxichilus charybdæus* is different, as might be expected from the greatness of the distance between the two localities at which they were collected. The Queensland specimen is preserved in the Australian Museum as a microscope slide (G5206), and proves to be an immature male with three joints developed in the ovigers. The proboscis is longer than in Dohrn's species, being somewhat more than two-thirds of the trunk length. It is impossible to make out the number of cement tubes present. Until such time as fully grown specimens are available I have deemed it advisable not to give the Queensland specimen any specific designation.

The collection whose examination forms the basis of the present paper was obtained from two localities in Queensland by Mr. Melbourne Ward. Though only four species are represented, two of these are apparently new to science. These are *Ascorhynchus melwardi* from 9-12 fathoms in Albany Passage near Cape York, and *Parapallene famelica* from 9 fathoms in Whitsunday Passage. The other two species are also interesting, one of them being *Nymphopsis armatus* Haswell, the other *Pallenopsis hoekii* (Miers).

I have to thank the authorities of the Australian Museum, and particularly the Director, Dr. C. Anderson, for accommodation and the use of literature while examining this collection.

### DESCRIPTION OF SPECIES.

Genus ASCORHYNCHUS Sars, 1877.

***Ascorhynchus melwardi* spec. nov.**

*Specimens*.—Holotype male, allotype female, registered in the Australian Museum Collection as P9345 and P9344 respectively.

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\* The opportunity might here be taken to point out that the generic name *Pallene* instituted by Johnston (Mag. Zool. Bot., i, (4), Dec. 1836, p. 380) is preoccupied by *Pallene* Megerle in Dahl, Col. u. Lep., 1823, p. 56, representing a genus of *Coleoptera* (fide C. D. Sherborn). For this reason I propose that the generic name *Pallene* Johnston be replaced by *Callipallene*, the genotype being *Pallene brevirostris* Johnston.



*Locality*.—Albany Passage, near Cape York, Northern Queensland, 9-12 fathoms, coll. Mel. Ward, Sept. 1928.

*Description*.—The body is generally slender and hirsute, the hairiness being much more evident in the male than in the female. The trunk is slender and definitely segmented. The crurigers are long and slender, separated from

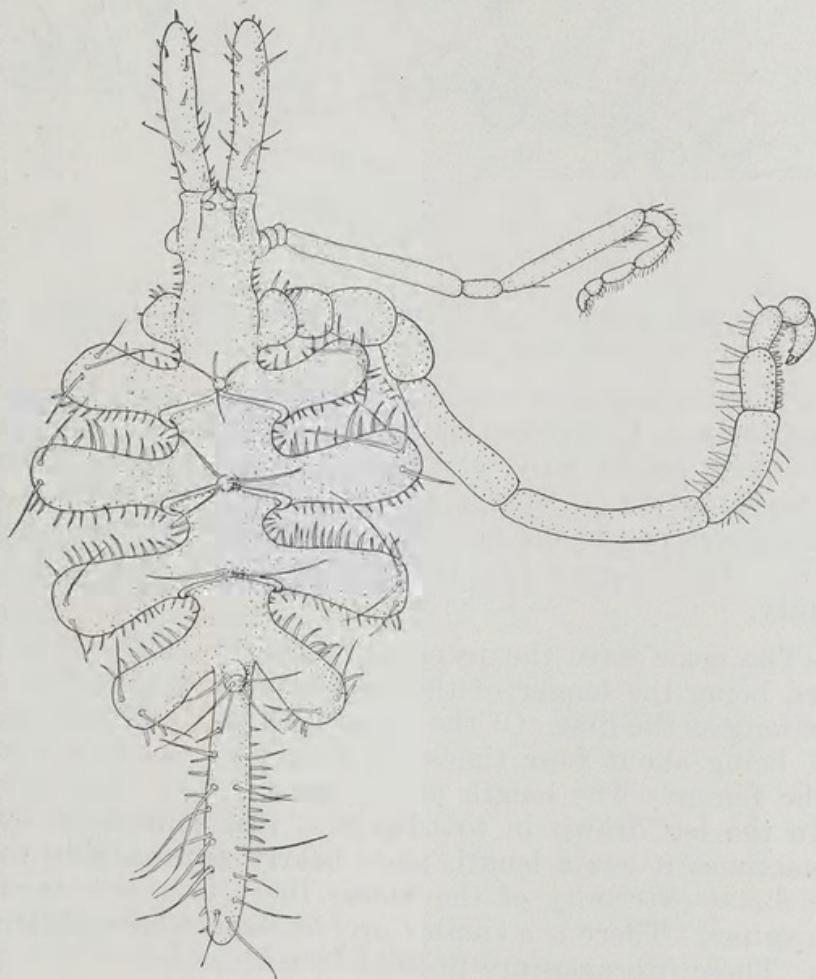


Figure 1.—*Ascorhynchus melwardi* spec. nov. Holotype male; dorsal view with legs omitted.

one another by spaces equal to or a little more than their own width. The posterior edge of each trunk segment is produced dorsally into a median more or less sharply pointed process beset by long spiny hairs. There are four of these processes, the most posterior being much higher and stronger than any of those in advance of it. The ocular tubercle is situated over the origin of the palps, only a short distance from the anterior edge of the cephalon. Just in front of the first pair of crurigers there is a slight narrowing of the cephalon forming a somewhat indefinite neck. The length of the cephalon is just about one-half the remaining trunk length, and is somewhat more than half the width of the trunk across the first pair of crurigers. The position of the ocular tubercle has been noted. It is of moderate height, cylindrical in its lower portion; above, it is conical with a sharply pointed process directed slightly backward. The eyes are well developed. The anterior pair is larger than the posterior. The proboscis is fairly long and reaches on the ventral side to the middle of the hindmost trunk



segment. It is of typical shape for the genus except that the distal third is more than usually tubular. The proboscis, at about one-fourth the distance from its base, is encircled by a shallow groove.

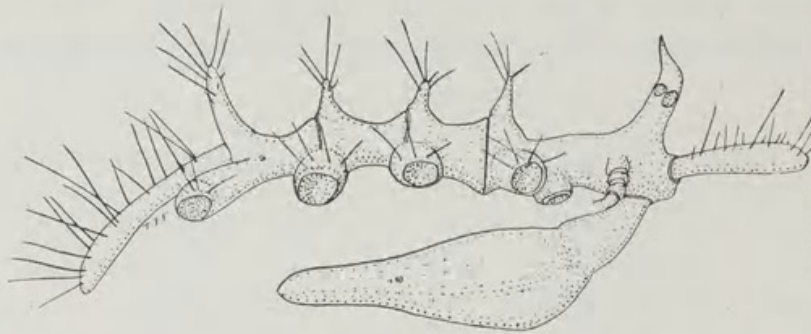


Figure 2.—*Ascorhynchus melwardi* spec. nov. Holotype female; lateral view with legs, ovigers, and part of the palps omitted.

The abdomen is long and slender. It is slightly curved with the convexity upward. Posteriorly it is directed somewhat downward. The chelophores are represented by their scapes only, and these are undivided. There is no trace whatever of the chela joint. Spines and long hairs are present on the scapes. These are better developed in the case of the male than of the female. The palps are ten-jointed. The ovigers are ten-jointed. The final joint has a small chelate extremity.

Legs:—The coxæ have the usual arrangement. The first and third are short, the third being the longer of the two, while the second is about one and a-half times as long as the first. Of the remaining joints of the legs the first tibia is the longest, being about four times the length of the first coxa and a little longer than the femur. The length of the second tibia may vary in the same individual. In the leg drawn in text-figure 3 this joint is about equal to the femur, but sometimes it has a length more nearly approaching that of the first tibia. At the distal extremity of the femur there is a prominent process well provided with spines. There is a similar process, somewhat smaller, at the end of the first tibia. These processes are present in both sexes.

In this species the trunk and appendages are extremely spinous, this condition being much more evident in the male than in the female. The general arrangement, however, is the same in each. There is, first, a series of short spines which range themselves laterally along the trunk, even appearing at the sides of the neck and also springing from the base of the dorsal trunk elevations. From the trunk they are continued on to the crurigers, where they have a very regular arrangement and are better developed on the anterior surfaces than on the posterior.

There are also to be found very much longer hairs arranged in groups of two or three or more. Such a group is present on each of the dorsal trunk elevations, particularly well developed on the most posterior. They are also to be found at the extremities of the crurigers, on the dorsal side of the abdomen, and on the chelophore scapes.

The above description applies to the male holotype. In the female allotype the arrangement of the spines and of the hairs is about the same, but they are much smaller, so that the female seems to be almost smooth.



In the case of the legs the lateral body spines are continued to the first coxa, but are poorly represented on the second. The most characteristic feature of the remaining joints of the legs is the presence of the spinous processes at the extremities of the femur and of the first tibia. The claw is fairly short and stout.

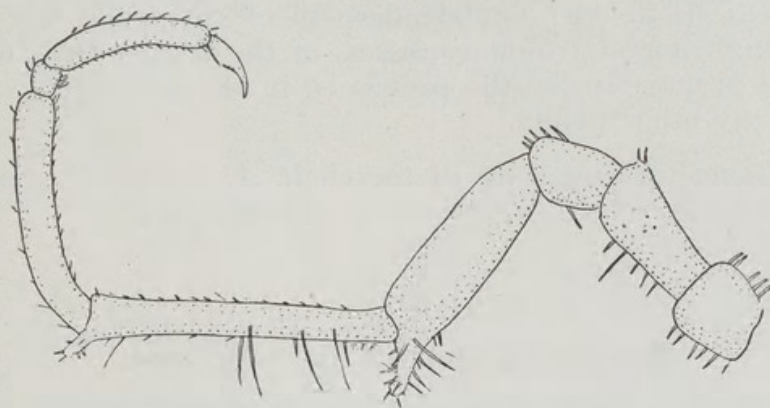


Figure 3.—*Ascorhynchus melwardi* spec. nov. Third right leg of holotype male.

Genital openings:—The female openings are wide apertures situated ventrally at the distal ends of the second coxæ of all the legs. The male openings are smaller, and are placed on slight elevations on the ventral sides of the second coxæ of the posterior two pairs of legs.

MEASUREMENTS, IN MM.

	Male Holotype.	Female Allotype.
Proboscis—		
Length .. .. .	4.00	4.40
Greatest diameter .. .. .	0.90	1.30
Trunk—		
Length .. .. .	4.05	4.40
Width across second crurigers .. .. .	2.56	2.70
Diameter between first and second crurigers .. .. .	.55	.65
Cephalon, length .. .. .	1.45	1.60
Abdomen, length .. .. .	2.30	2.55
Chelophore, scape length .. .. .	1.40	1.65
Third right leg—		
First coxa .. .. .	.70	.77
Second coxa .. .. .	1.08	1.05
Third coxa .. .. .	.70	.87
Femur .. .. .	2.20	2.80
First tibia .. .. .	2.80	3.07
Second tibia .. .. .	2.40	2.97
Tarsus and propodus .. .. .	1.60	1.90
Claw .. .. .	.52	.45

*Affinities.*—This species belongs to the group of the species of the genus which, as well as possessing the claw on each of the anterior pair of legs, has the tarsus much shorter than the propodus, and the ocular tubercle not so far removed from the anterior edge of the cephalon. In this group are to be



included *A. cryptopygius* Ortmann 1891, *A. latipes* (Cole) 1906, *A. arenicola* (Dohrn) 1881, *A. abyssi* Sars 1891 (*A. tridens* Meinert 1899), *A. castelli* (Dohrn) 1881.

The only other representative of the genus so far obtained from Torres Strait is *A. tenuicollis* Carpenter 1892, collected by Dr. Haddon. This agrees with *A. melwardi* in the general slenderness of the body, but differs in the absence of the high dorsal trunk processes, in the form of the ocular tubercle, in the form and proportions of the proboscis, in the presence of a rudimentary chela, and in many other points.

In the absence of any trace of the chela *A. melwardi* apparently differs from all previously described species of the genus.

Genus NYMPHOPSIS Haswell, 1884.

**Nymphopsis armatus** Haswell, 1884.

*Specimen*.—One specimen, female (juv.), Australian Museum, Reg. No. P9341.

*Locality*.—Dredged in 9 fathoms near Lindeman Island, Whitsunday Passage, East Coast, Queensland, coll. Mel. Ward, Sept. 1928.

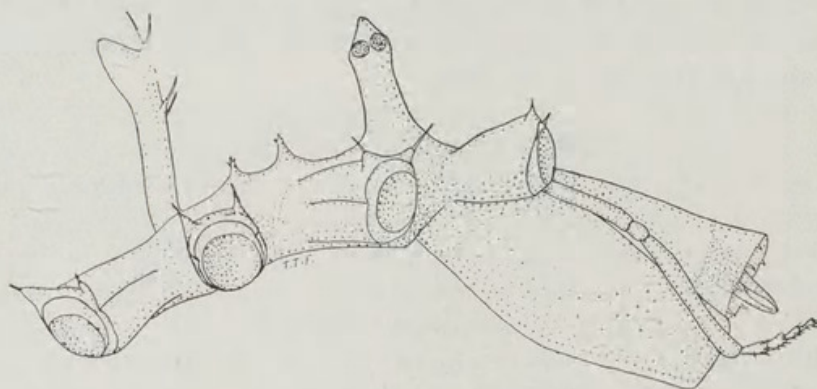


Figure 4.—*Nymphopsis armatus* Haswell. Lateral view of trunk with legs and ovigers omitted.

*Remarks*.—The holotype of Haswell's species is preserved in the Australian Museum as a microscope slide (G5201). Loman (1928, p. 41) has suggested that *N. korotnewi* Schimk., 1887, may be synonymous with *N. armatus* Haswell.

Comparison of the specimen collected by Mr. Ward with the type shows that some important features have been overlooked in my previous revision of the description of the holotype (1919). There are in the holotype between the ocular tubercle and the abdomen two dorsal trunk elevations seen with difficulty in the holotype slide. They are to be well seen in the specimen from Whitsunday Passage. Such elevations are to be found now in all species of the genus except *N. korotnewi* Schimk. In *N. armatus*, however, the elevations are of very moderate height as compared with other species. Another point is that the abdomen bears two pairs of pinnate spines instead of one pair as stated in my former description. The second pair is situated on the same face of the abdomen somewhat lower down.



In the holotype it is impossible to make out the structure of the ovigers. In the specimen collected by Mr. Ward these appendages give evidence of immaturity. Each consists of ten joints. It is surprising to find that the limb is terminated by a small but distinct claw. This has not so far been recorded as occurring in any other member of the genus. It is unfortunately impossible to determine whether such a claw is present on the oviger in the holotype.

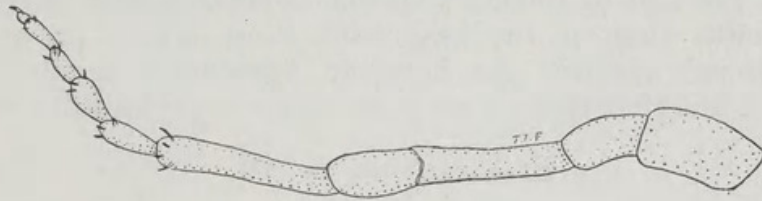


Figure 5.—*Nymphopsis armatus* Haswell. Left oviger (x 10).

The chelophores are well developed in the Whitsunday Passage specimen, and in this as in the holotype the chela shaft consists of one joint.

*Affinities.*—A full consideration of the structure of the two forms indicates that it is not possible to regard *N. korotnewi* as a synonym of *N. armatus*.

*N. armatus* is obviously very closely related to *N. anarthrus* Loman, 1928, with which it agrees in the unjointed nature of the chelophore scape and in the presence of two dorsal trunk elevations. The latter species, recorded by Loman from the coast of Venezuela (1928), is devoid of auxiliary claws, and in it, too, the trunk elevations are very high and pointed. Further, *N. armatus* differs from all other species of the genus in having but two pairs of large pinnate spines on the abdomen. In all others there are four pairs.

Genus *PALLENOPSIS* Wilson, 1881.

Subgenus *RIGONA* Loman, 1908.

***Pallenopsis (Rigona) hoekii* (Miers), 1884.**

*Phoxichilidium hoekii* Miers, 1884, p. 324, plate xxxv, fig. B.

*Pallenopsis hoekii* Carpenter, 1893, plate ii, fig. 11.

*Pallenopsis (Rigona) rigens* Loman, 1908, p. 68, taf. ix, figs. 128-133.

*Specimen.*—One male, Australian Museum Reg. No. P9343.

*Locality.*—Dredged in 9-12 fathoms, Albany Passage, near Cape York, Northern Queensland, coll. Mr. Mel. Ward, Sept. 1928.

*Remarks.*—This male agrees very well in its structure with the description of the holotype as given by Miers. His statement that the divisions between the segments appear only on the ventral side is true for this specimen also. The trunk is somewhat broader than is indicated in Miers's figures. Miers's drawing of the oviger leaves much to be desired, especially with regard to the last few joints. It is correctly depicted by Carpenter (1893, plate ii, fig. 11).

Some of the spines on the legs of this species resemble those found in *P. crosslandi* Carpenter, 1910, and in *P. alcocki* Calman, 1923. There is no doubt



that *P. hoekii* is closely related to these species, but is easily distinguished by the differences in the proportions of the joints of the legs. In *P. alcocki* and *P. crosslandi* the second tibia is distinctly longer than the femur, while in *P. hoekii* the two joints are subequal.

There does not seem to be any reasonable doubt that *Pallenopsis* (*Rigona*) *rigens* Loman is identical with this species. As Loman (1908, p. 71) points out, he had not been able to see the description of *P. hoekii*. Apparently the only difference is that the legs in Loman's specimen are slightly longer in proportion to the trunk length than is the case with those which have been put with certainty into Miers's species. As, however, agreement in other respects seems to be quite close, I feel that there is no question as to the validity of the synonymy suggested.

MEASUREMENTS, IN MM.

Proboscis, length .. .. .	2.4
Trunk—	
Length .. .. .	4.0
Width across first crurigers .. .. .	3.0
Width between first and second crurigers .. .. .	1.0
Cephalon, length .. .. .	1.5
Posterior right leg—	
First coxa .. .. .	1.0
Second coxa .. .. .	2.2
Third coxa .. .. .	1.2
Femur .. .. .	4.9
First tibia .. .. .	5.4
Second tibia .. .. .	4.2
Tarsus and propodus .. .. .	1.8

Genus PARAPALLENE Carpenter, 1892.

**Parapallene famelica** spec. nov.

*Specimen*.—Holotype male, Australian Museum, Reg. No. P9342.

*Locality*.—Dredged in 9 fathoms near Lindeman Island, Whitsunday Passage, coll. Mr. Mel. Ward, December 1928.

*Description*.—The body is quite smooth; the trunk is slender, elongated, and distinctly segmented. Anteriorly the cephalon is slightly expanded with a slight median longitudinal groove. The cephalon is equal in length to half the remainder of the trunk. All trunk segments are long and thin, but the most posterior is shorter and more slender than the others. The crurigers are very short and are separated by very wide interspaces equal to about four times their own diameter. The ocular tubercle is a low rounded cone with a terminal point. The visual elements are well developed. The proboscis is short and cylindrical, and is contracted in the midregion. At the anterior end it has the shape of a very shallow cone. A peculiarity is the presence, on the ventral side of the proboscis, of two distinct tubercles, one at each antero-lateral angle. The tubercles are separated by a median groove. The abdomen is very short,



erect, and tubular. The chelophores are short and robust with the chela placed transversely in front of the mouth. The scape is short and thick, expanded towards the extremity. The length of the scape is about two and a-half times its mean width. The hand is slightly longer than the scape. The palm is stout and rounded, with a wreath of short bristles round the base of the fingers. The fingers are short, with smooth blades which have a slight tendency to cross at the extremities. The moveable blade is external. The ovigers are ten-jointed, with incomplete separation of the third and fourth joints. A long terminal claw is present which is finely toothed.

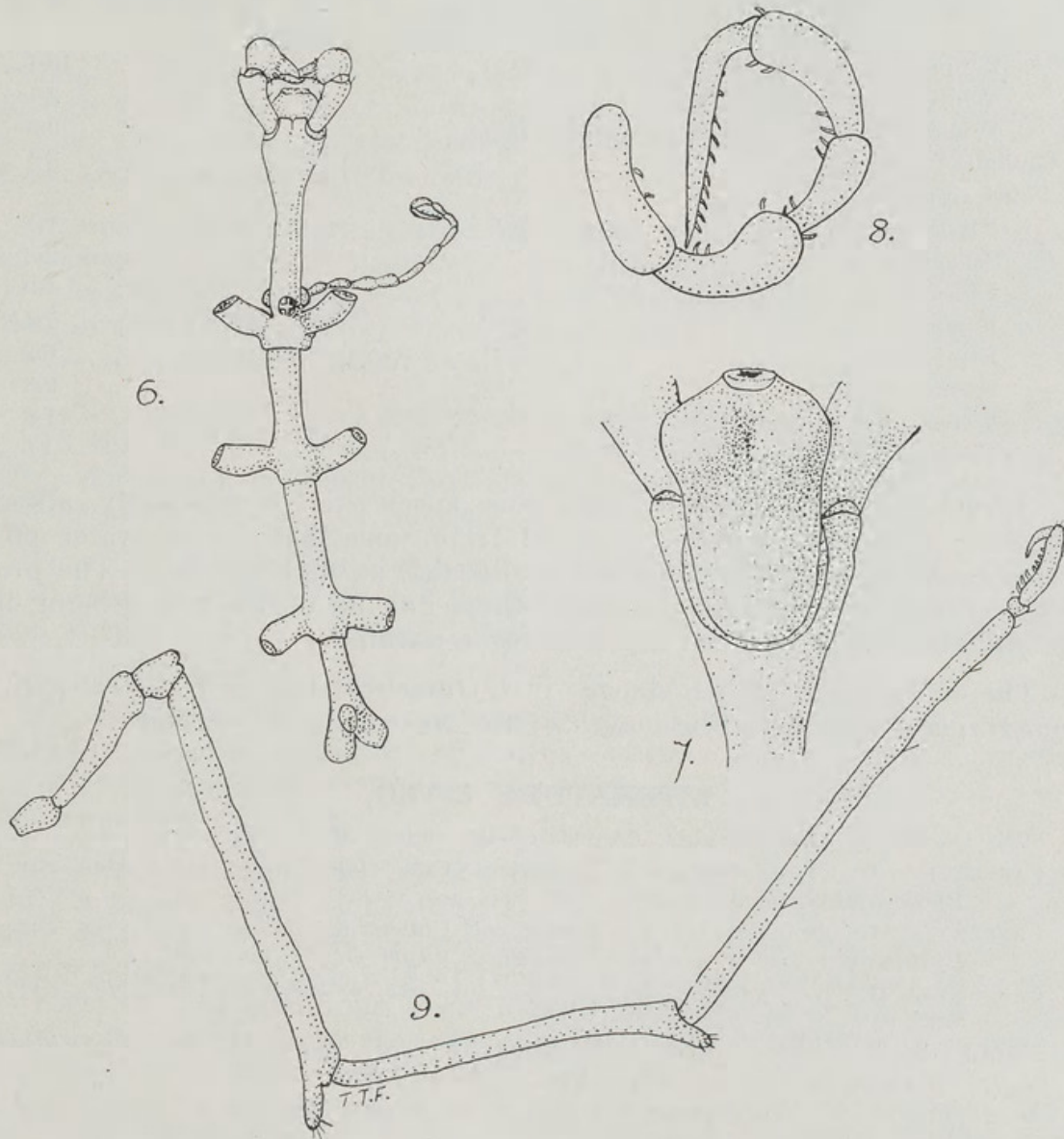


Figure 6.—*Parapallene famelica* spec. nov. Holotype male; dorsal view omitting legs.

Figure 7.—*Parapallene famelica* spec. nov. Holotype male; ventral view of proboscis.

Figure 8.—*Parapallene famelica* spec. nov. Holotype male; terminal joints of the oviger.

Figure 9.—*Parapallene famelica* spec. nov. Holotype male; third left leg.

The legs are extremely long and slender. The first and third coxæ are short, the second is about two and a-half times the length of the first. The



femur is long and slender, a little shorter than the three posterior trunk segments taken together. At the distal end the femur bears a spinous projection. A similar projection occurs on the first tibia. This latter joint is somewhat shorter than the femur. The second tibia is extremely long and slender; it is equal in length to the trunk excluding the last segment. The claw is fairly stout. There are no auxiliary claws.

## MEASUREMENTS, IN MM.

								Holotype male.
Proboscis—								
Length along ventral surface	..	..	..	..	..	..	..	1.8
Greatest width	..	..	..	..	..	..	..	1.0
Trunk—								
Length to base of abdomen	..	..	..	..	..	..	..	10.1
Width across first crurigers	..	..	..	..	..	..	..	2.1
Width between first and second crurigers	..	..	..	..	..	..	..	0.6
Cephalon, length	..	..	..	..	..	..	..	3.1
Third right leg—								
First coxa	..	..	..	..	..	..	..	1.1
Second coxa	..	..	..	..	..	..	..	2.6
Third coxa	..	..	..	..	..	..	..	1.0
Femur	..	..	..	..	..	..	..	7.4
First tibia	..	..	..	..	..	..	..	6.2
Second tibia	..	..	..	..	..	..	..	9.8
Tarsus and propodus	..	..	..	..	..	..	..	1.8
Claw	..	..	..	..	..	..	..	1.0

*Affinities.*—It is obvious that this species is very closely allied to *Parapallene nierstraszi* Loman, obtained from somewhat deeper water off the coast of New Guinea and Timor (1908, p. 44, taf. ix, fig. 122-127). The present species is, however, much more slender, the segments of the trunk being much longer and the crurigers much more widely separated.

The crurigers are much shorter in *P. famelica* than in *P. nierstraszi*, and the same remark applies to the length of the legs in the two species.

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