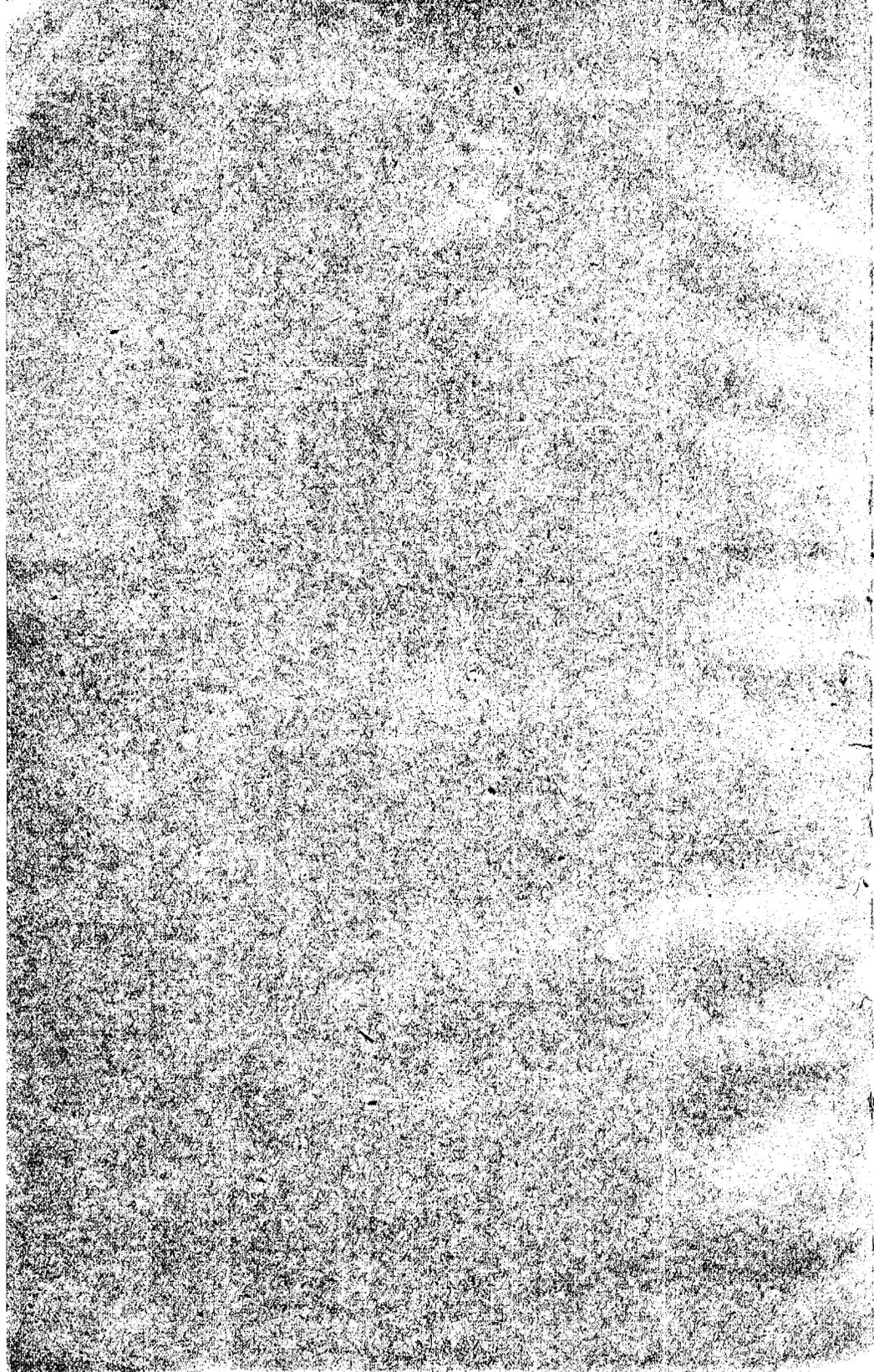


*With the Compliments of  
Dr. J. Gordon*

REDESCRIPTION OF PERICLI  
MENESXSOROR NOBILI (CRUST-  
ACEA, DECAPODA)

BY ISABELLA GORDON

1939



*Redescription of Periclimeses soror Nobili (Crustacea, Decapoda).* By ISABELLA GORDON, D.Sc., Ph.D., Department of Zoology, British Museum (Natural History).

*Periclimeses soror Nobili.*

Nobili, 1904, Bull. Mus. Paris, no. 5, p. 231.

Nobili, 1906, Ann. Sci. Nat. Zool. (9) p. 50, pl. 2, fig. 6.

*Material.*—Sixty-five specimens, including many ovigerous females, found living in association with the starfish *Oreaster nodosus* (Linn.), were presented by F. C. E. Knight, Esq. Dr. Knight writes "They were mostly found close to the oral region but sometimes amongst the tube feet. I lost a lot of specimens as they fell off with the drips of water as the seastar was raised out of the water, and I could watch them swim away quite rapidly. Those I caught were stuck to the host by surface tension, but often flicked themselves free."

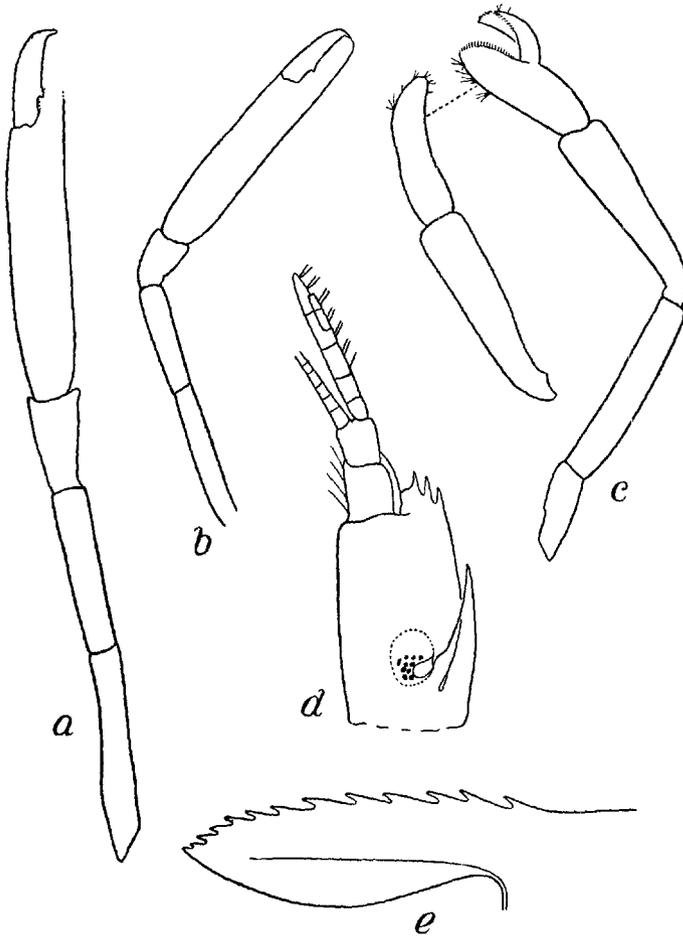
There appears to be only one previous record of a Pontoniid living in association with an Asteroid, namely *Periclimeses parasiticus* Borradaile on *Linckia* (Kemp, 1922, Rec. Ind. Mus. Calcutta, xxiv. p. 117).

*Locality.*—Inside coral reefs at low tide, Sanoer, South Coast of Bali.

*Description of Female.*

The *rostrum* reaches the distal end of the antennular peduncle in small, but is considerably longer in larger,

Fig. 1.



*Periclimenes soror Nobili*. Cotypes.

*a* and *b*. Larger second peraeopod of two specimens of different size.  
*c*. First peraeopod. *d*. Antennule,  $\times 28$ . *e*. Rostrum.

specimens (fig. 3 *c*), extending almost to the apex of the antennal scale. It is deep in lateral view, especially in larger specimens (fig. 1 *e*), in small individuals the lower

border is less convex; the dorsal border is armed with 10-13 spinules, the first of which is situated on a level with, or rather in advance of, the posterior margin of the orbit.

The *eye* is robust; the distal (major) segment of the peduncle is almost as wide as long; the ocular spot is confluent with the cornea, which is hemispherical and a trifle narrower than the peduncle (fig. 3 c).

*Antennule*.—The peduncle is represented in figs. 1 d, 2 g; the lateral process or stylocerite reaches considerably beyond the middle of the basal segment; the anterior margin is greatly produced externally and is armed with two (occasionally three) spines\*. The outer flagellum has 3-5 segments proximal to the bifurcation, according to the size of the specimen; the stouter inner branch appears to be composed of only two segments, but there may be a second suture near the apex, on a level with the distal pair of olfactory filaments (fig. 2 g). The statocyst contains a number of sand grains and is very conspicuous.

The *antennal scale* is more than twice as long as wide (approx. 2.33 : 1); the straight outer margin ends in a spine some distance behind the broadly rounded apex of the lamella (fig. 2 a).

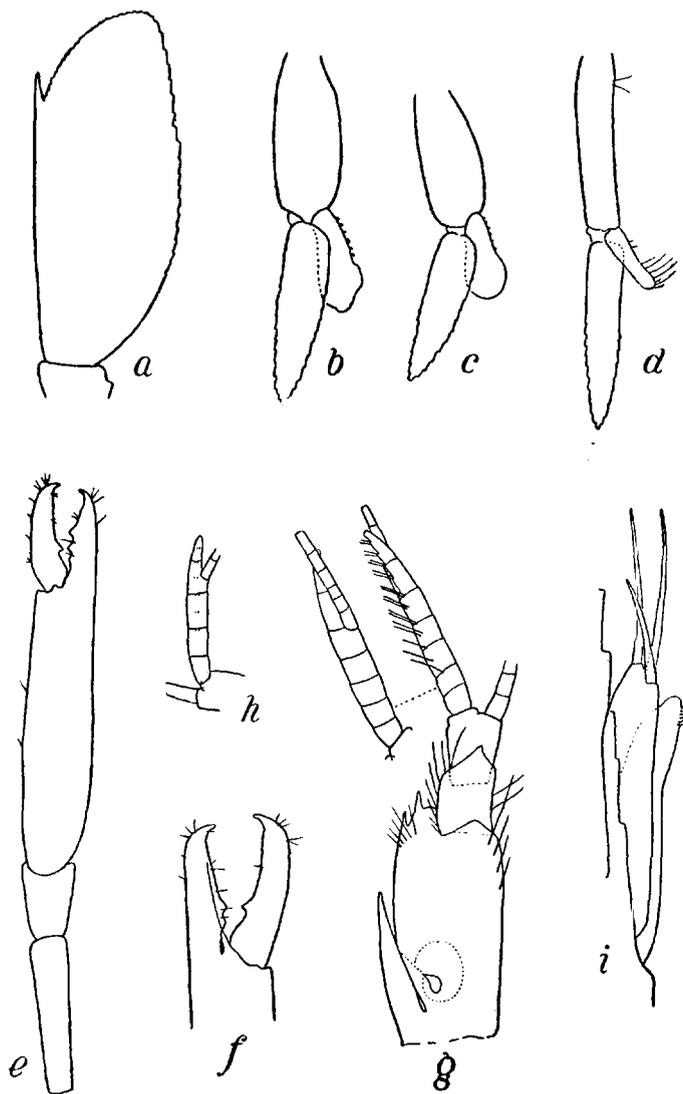
The *mandible* is very slender and deeply bifurcated, the incisor and molar processes being subequal (fig. 3 e); the exopodite of the third maxilliped extends to the middle of the second segment of the endopodite.

*Peræopods*.—The first pair are equal and reach almost to the apex of the antennal scale; the merus and carpus are subequal, and the latter is four (or three) times as long as its distal width (figs. 1 c, 3 d, d'). The fingers are equal to the palm, each is broadly spatulate, with the inner edge finely pectinate (fig. 1, c).

The second peræopods are markedly unequal (figs. 2 e and 3 a). The larger exceeds the antennal scale by at least half the length of the chela, which is almost six times as long as wide. In each the dactylus, which is rather less than one-half of the palm, is armed with a single tooth, which fits in between the first and second teeth on the immovable finger. The carpus, as a rule, is equal to the dactylus in the smaller, and considerably shorter in the larger, cheliped; sometimes

\* *Nobili* only mentions one spine: "l'épine du premier article est courte," but see under remarks, p. 400.

Fig. 2.



*Perichlimeses soror* Nobili. From Bali.

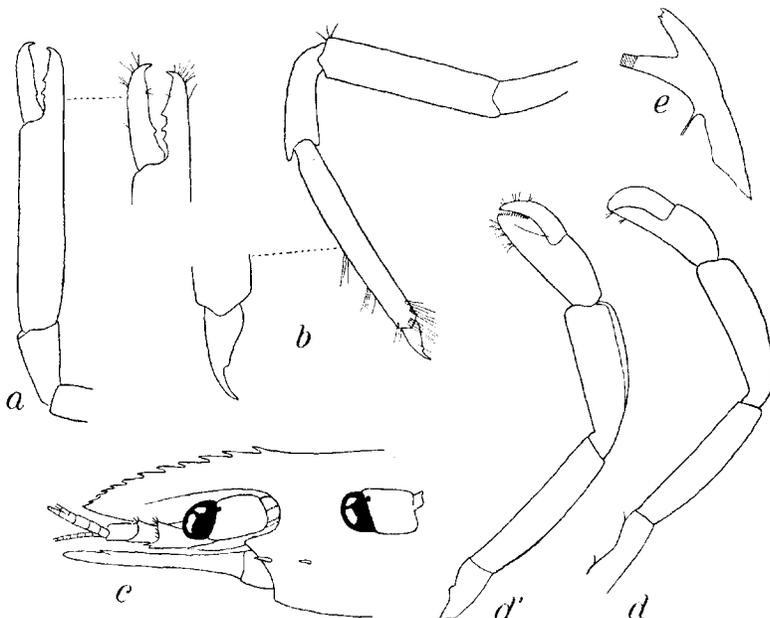
- a. Antennal scale of ♀. b, c. First pleopod of two males differing in size. d. First pleopod of female. e. Larger second peraeopod of female. f. Fingers of larger second peraeopod of male. g. Antennule of male, ventral aspect. h. Outer flagellum of antennule of a smaller female. i. Appendix interna and appendix masculina of male.

a-h all  $\times 28$ .

the reverse condition is found (*e. g.*, fig. 1 *a*). The merus is unarmed, and is a trifle shorter than the ischium.

The three posterior peraeopods are slender; the third extends to the distal end of the second or third segment of the antennular peduncle\*. The merus is unarmed at the distal end of the lower border; the propodus is seven times as long as wide and four-and-a-half times as long as the dactylus (fig. 3 *b*).

Fig. 3.



*Periclimenes soror Nobili*. From Bali.

- a.* Smaller second peraeopod of female with fingers more highly magnified,  $\times 28$  and  $35$ . *b.* Fifth peraeopod of female, with dactylus more highly magnified,  $\times 28$  and  $35$ . *c.* Anterior portion of carapace,  $\times 9$ . *d, d'.* First peraeopod of female,  $\times 28$ . *e.* Mandible,  $\times 45$ .

The sixth *abdominal* somite is much longer than the fifth ( $1.6-1.7:1$ ). The telson bears the usual two pairs of dorsal spinules, the first a little posterior to the middle, the second mid-way between the first pair and the apex.

*Pleopods*.—The anterior pleopods are rather longer and much more slender than those of the male (*cf.* figs. 2 *d*

\* The length of the peraeopods varies somewhat, according to the size of the specimen.

and 2 *b, c*); the endopodite of pleopod 1 is very slender and is provided with a group of long setæ on the distal half of the inner border.

*Remarks.*—The male is very similar to young and non-ovigerous females, but may be distinguished at once by the pleopods. The peduncle (protopodite) is much broader than that of the female (*cf.* figs. 2 *b-d*); the endopodite of pleopod 1 is much broader distally and the inner border is unarmed except for six minute setules on the proximal half. The appendix masculina on pleopod 2 is armed distally with three long setæ, as represented in fig. 2 *i*. The larger cheliped is similar to that of the female, but is somewhat more robust and may exceed the antennal scale by almost the entire chela; in the specimen figured the immovable finger has only two teeth on the inner margin, and the tooth on the dactylus fits in between them (fig. 2 *f*).

As Nobili's description is short and his figure rather poor, I thought it advisable to re-examine the cotypes for comparison with Dr. Knight's material. The cotypes, received on loan from the Paris Museum, are in poor condition and comprise three small specimens measuring 6.9–8.3 mm. in length, which are fairly complete although each has some appendages missing, two rather larger imperfect specimens and two much larger mutilated ovigerous females (length circa 14–15 mm.). Dr. Knight's specimens agree very well with the cotypes, and I think there can be no doubt as to their identity with *P. soror*. The only obvious difference is in the first peræopods, the carpus of which is frequently more inflated than in the cotypes (*cf.* figs. 1 *c* and 3 *d, d'*). Where this inflation is most marked there is a considerable space on one side between the chitin and the underlying tissues (fig. 3 *d'*), suggesting that it may be an artifact. The basal segment of the antennular peduncle represented in fig. 1 *d* has three spines on the anterior margin, but all the other cotypes have two, which appears to be the usual number. The outer flagellum is incomplete in most of the cotypes; I am not sure that my sketch is exact as to the number of segments (fig. 1 *d*). Unfortunately I omitted to examine the pleopods of the cotypes, and the imperfect condition of most of the specimens did not seem to warrant dissection of the mouth-parts.