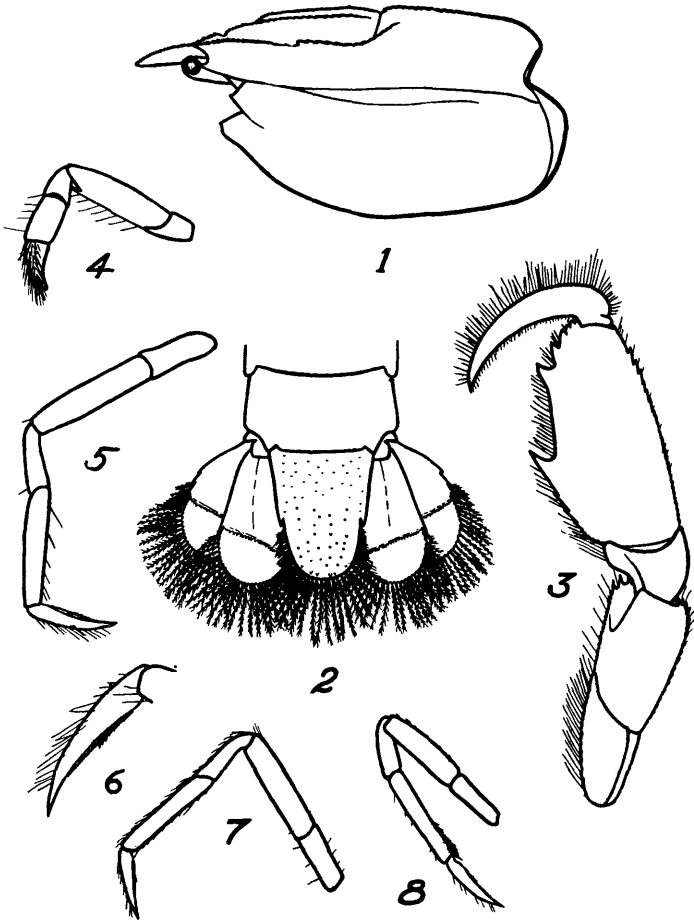


*On the Systematic Status of the Crustacean Genera Naushonia, Homoriscus, and Coralliocrangon.* By FENNER A. CHACE, JR., Museum of Comparative Zoölogy, Cambridge, Mass.

DR. ROBERT GURNEY has recently called my attention to the fact that the branchial structure of the genus *Homoriscus* Rathbun does not justify the inclusion of this form in the family Cragonidæ, where it has recently been placed. Examination of a perfect female specimen of *Homoriscus portoricensis* Rathbun collected last year among rocks along the shore at Havana, Cuba, by Dr. Luis Howell Rivero of the University of Havana bears out this contention. This study has also indicated that both *Homoriscus* and *Coralliocrangon* Nobili from the Red Sea should be synonymized with *Naushonia* Kingsley from the southern coast of Massachusetts, and that this genus is best accommodated by the erection for it of a new subfamily, the Naushoniinæ, in the family Laomediidæ of the Thalassinidea.

*Naushonia* was established by Kingsley (1897) for a shrimp found by Professor Hermon C. Bumpus of Brown University on the Island of Naushon, one of the Elizabeth Islands, off the southern coast of Massachusetts. Kingsley called this form *Naushonia crangonoides* and noted a superficial similarity between it and the members of the Cragonidæ, but at the same time he called attention to certain differences which might subsequently warrant the erection of a new family for it. Gray (1901) published a brief note on a second specimen of the same species collected by himself at Ram Island in the harbour at Woods Hole, Massachusetts. Thompson (1903) re-described these two specimens with good figures and also described several of the larval stages taken in the plankton



*Naushonia portoricensis* (Rathbun), female.

Fig. 1.—Lateral view of carapace,  $\times 9.5$ .

Fig. 2.—Telson and uropods,  $\times 10$ .

Fig. 3.—First pereiopod,  $\times 9.5$ .

Fig. 4.—Second pereiopod,  $\times 9.5$ .

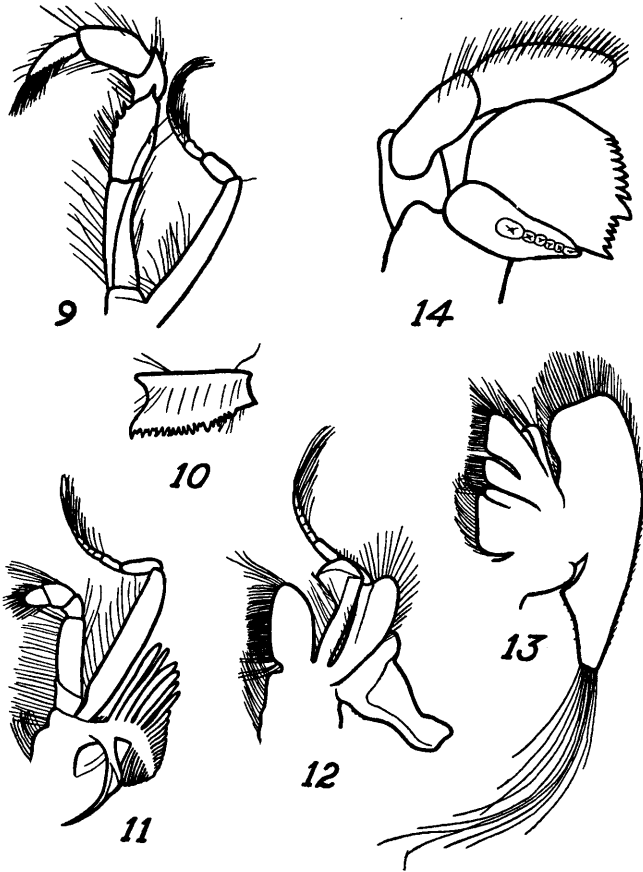
Fig. 5.—Third pereiopod,  $\times 9.5$ .

Fig. 6.—Dactyl of third pereiopod,  $\times 19$ .

Fig. 7.—Fourth pereiopod,  $\times 9.5$ .

Fig. 8.—Fifth pereiopod,  $\times 9.5$ .

at Woods Hole. He recognized the correct systematic position of the genus, suggesting that the larval development was very similar to that of *Calliaxis adriatica*



*Naushonia portoricensis* (Rathbun), female.

- Fig. 9.—Third maxilliped, lateral view,  $\times 19$ .
- Fig. 10.—Ischium of third maxilliped, ventral view,  $\times 19$ .
- Fig. 11.—Second maxilliped,  $\times 19$ .
- Fig. 12.—First maxilliped,  $\times 19$ .
- Fig. 13.—Second maxilla,  $\times 19$ .
- Fig. 14.—Mandible,  $\times 50$ .

Heller (= *Jaxea nocturna* Nardo), one of the two genera now placed in the family Laomediidae. In the report on the 'Siboga' Decapoda, however, de Man (1920, p. 247)

placed both *Naushonia* and *Coralliocrangon* in the Cragonidæ.

*Homoriscus portoricensis* was described by Miss Rathbun (1901, p. 98) from a female specimen without pereopods taken at Playa de Ponce, Porto Rico. Apparently because of the presence of podobranchs and epipods, she called the form "a little neighbour of *Homarus*." In 1906 Nobili published Miss Rathbun's affirmation of the presence of podobranchs and epipods in *Homoriscus*. Bouvier (1925, p. 403) included the genus in his list of West Indian Homaridæ, but Balss (1933, p. 86), believing *Homoriscus* and *Coralliocrangon* to be closely related, placed them both in the Cragonidæ. Glassell (1938, p. 414, pl. xxvii.) founded a new species, *Homoriscus macginitiei*, on two ovigerous females taken by Professor G. E. MacGinitie from a small tidal pool at La Jolla, California.

The genus *Coralliocrangon* was briefly diagnosed by Nobili (1904, p. 234) for the reception of *C. perrieri*, specimens of which were collected by Coutière at Djibouti. Two years later (1906) he more completely described this form, but his descriptions and figures leave much to be desired. Finally, Kemp (1916, p. 384) briefly mentioned the Red Sea species and remarked that the "linea thalassinica" placed it somewhat apart from the other members of the Cragonidæ.

A survey of the available information on the four species involved brings out the following characters common to all:—

1. A "linea thalassinica" on the lateral portion of the carapace. (This is not mentioned in the case of *Homoriscus macginitiei*, but it is probably present due to the striking similarity between this species and *H. portoricensis*.)
2. Both branches of the uropods divided by transverse sutures.
3. Incisor process of the mandible and the remaining mouth-parts very similar.
4. First pereopods subchelate and strikingly alike in all species.
5. Second pereopods short, simple, with the dactyl densely hirsute.
6. Last three legs slender and simple.

7. Pleopods present on the first abdominal somite of the female only.

8. Rostrum of the same general form and denticulate on the margin.

9. A similar disposition of the carapacic carinæ even though they may be inconspicuous as in *Naushonia crangonoides*.

10. Telson broadly rounded.

The differences between the species seem important at first, but analysis renders them less so. *Naushonia* is said to have a two-jointed mandibular palp, whereas the other two genera have a three-jointed one. However, Thompson (1903, p. 3) states that "the proximal joint may represent two fused joints," and his figures distinctly show an indication of a third segment. The differences between the branchial formulæ of *Naushonia crangonoides* and *Homoriscus portoricensis* may be seen in the formulæ of the two presented below:—

*Branchial Formula of Naushonia crangonoides.*  
(After Thompson.)

|                      | VII. | VIII. | IX.  | X.   | XI.  | XII. | XIII. | XIV. |
|----------------------|------|-------|------|------|------|------|-------|------|
| Podobranchiæ . . . . | ep   | 1+ep  | 1+ep | 1+ep | 1+ep | 1+ep | ep    | ..   |
| Arthrobranchiæ ...   | 1    | 2     | 2    | 2    | 2    | 2    | 2     | ..   |
| Pleurobranchiæ ..    | ..   | ..    | ..   | ..   | ..   | .    | ..    | ..   |

*Branchial Formula of Homoriscus portoricensis.*

|                      | VII. | VIII. | IX.  | X.   | XI.  | XII. | XIII. | XIV. |
|----------------------|------|-------|------|------|------|------|-------|------|
| Podobranchiæ . . . . | ep   | 1+ep  | 1+ep | 1+ep | 1+ep | 1+ep | r+ep  | ..   |
| Arthrobranchiæ ...   | ..   | 2     | 2    | 2    | 2    | 2    | 2     | ..   |
| Pleurobranchiæ ..    | ..   | ..    | ..   | ..   | ..   | ..   | ..    | ..   |

The only differences between the branchial arrangement in these two forms are the presence of an arthrobranch

on VII. in *Naushonia* and the presence of a rudimentary podobranch on XIII. in *Homoriscus*. The arthrobranch on VII. might well have been overlooked when I examined the specimen of *Homoriscus*, as Thompson (p. 4) says that it is small. On the other hand, the podobranch on the fourth leg in *Homoriscus* is so rudimentary that it might easily be overlooked. *Coralliocrangon*, however, is said to have six pleurobranchs and no epipods, although Nobili states that the condition of his specimens was too poor to permit an exact determination of the position of the gills. It is difficult to believe that a form which is so similar in every other respect could differ so markedly in the gill-formula. It seems possible that Nobili mistook the dorsal series of arthrobranchs for pleurobranchs and the epipods were either lost or overlooked. If *Coralliocrangon* does prove to be distinct on the basis of the gill-structure, this will probably be the most striking instance of parallelism on record.

The Laomediidæ, as redefined to include these species, is made up of those thalassinids having a "linea thalassinica" and both branches of the uropods divided by transverse sutures. The Naushoniinæ may be distinguished from the Laomediinæ by the subchelate rather than chelate first pereopods, the well-developed antennal scale which is very rudimentary or entirely absent in the Laomediinæ, and the simple instead of subchelate last pereopods.

Although a re-examination of the Massachusetts and Red Sea species is needed, the following key may serve to distinguish the four forms. It will be noted that the differences so far as known are not of great importance, certainly no more than would be expected between congeneric species:—

- A. Orbital margin and anterior edge of carapace not denticulate; no lateral movable spines on the dactyls of the last three pereopods.
1. "Linea thalassinica" pronounced; carinæ of carapace weak; eyes not visible from above ..... [Kingsley.  
*N. crangonoides*
  2. "Linea thalassinica" not pronounced; carinæ of carapace well marked; eyes visible from above.
    - a. Rostrum bluntly acute; antennal scale with four or five marginal teeth; telson armed with a single pair of lateral spines. [(Rathbun).  
*N. portoricensis*

- b. Rostrum rounded; antennal scale with seven or eight marginal teeth; telson armed with three pairs of lateral spines. [(Glassell). *N. macginitiei*
- B. Orbital margin and anterior edge of carapace denticulate; movable lateral spines on dactyls of last three pereopods ..... *N. perrieri* (Nobili).

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