

A NEW SPECIES OF PARASITIC COPEPOD, WITH NOTES  
ON SPECIES ALREADY DESCRIBED.

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Three males and two females of an undescribed species of parasitic copepod were obtained by Dr. William A. Hilton from a "swordfish" at Catalina Island, off the coast of Southern California, in 1917, which are herewith described.

GLOIOPOTES COSTATUS, new species.

Plate 21.

*Host and Record of Specimens.*—One male and female are still fastened together and are made the cotypes of the new species (Cat. No. 51040, U. S. N. M.); the others are free and become paratypes (Cat. No. 51041, U.S.N.M.).

*Specific characters of female.*—Carapace elliptical, as wide as long, squarely truncated posteriorly and not very strongly arched; frontal plates indistinct; posterior sinuses wide but shallow, the tips of the lateral lobes curved inward until they touch the sides of the third segment. The carapace is reinforced by very stout ribs; the posterior ones in the lateral area on either side sweep around backward into the lateral lobes, and are double at their base for some distance. The thoracic area is marked off in much the same pattern as in *Gloiopotes ornatus*, with the triangular eye area inserted in the center of its anterior margin. The fourth segment is about the same length and width and is covered with a pair of kidney-shaped dorsal plates, which are inclined at an angle to the body axis, with their concave sides outward. They reach quite a distance backward over the anterior end of the genital segment, leaving a wide median posterior sinus between them.

The genital segment is horseshoe-shaped, as in other species of the genus; it is contracted into a neck anteriorly, then widened abruptly to half the width of the carapace and prolonged backward in a stout lobe on either side of the abdomen. The sides of the segment are convex with a smooth curve, lacking the shoulders at the anterior corners, which are found in *ornatus*. The tips of the lobes also curve inward so far that they almost meet on the midline; the dorsal surface and the lateral margins are smooth. Instead of the flap or

membrane found on the lobes of this segment in *ornatus*, the present species has a conical process extending backward parallel with the abdomen and ending in three small spines, with a row of similar spines along the inner margin.

The abdomen is two-jointed and cylindrical, the basal joint the same width as the terminal but less than half as long. The terminal joint tapers uniformly backwards and is bluntly rounded posteriorly. The lateral margins are smooth, but there is a double row of spines along the center of the dorsal surface. The anal laminae are linear, two-thirds the length of the terminal joint and tipped with small spines. The second antennae are stout, the basal joint armed posteriorly with a wide flat spine, the terminal claw strongly curved and without an accessory spine. Maxillary hooks three-parted, the two inner prongs fused and much smaller than the outer one. Maxillae comparatively large and bifurcate, the outer ramus longer and wider than the inner one; between the rami projects a stout spine attached to the ventral surface of the head.

The furca is compound, the posterior rami bifid, the lateral ones simple; on either side of the tip of the furca is a secondary furca, attached to the head and projecting ventrally.

The first legs have three-pronged claws like those of *ornatus*; the rami of the third legs are widely separated and two-jointed. The basal joint of the exopod is armed with a large three-pronged claw, quite different from the one in *ornatus*. The fourth legs are large and stout, the basal joint longer than the three terminal ones; the latter are distinctly separated, the second and third joints with one claw, the fourth joint with three, the terminal one larger than the others. The egg strings in both females were broken.

*Specific characters of male.*—Carapace considerably elongated, but still quite squarely truncated posteriorly; areas and markings similar to those of the female; the posterior ribs in the lateral areas are strengthened even more than in the female, since they have two supporting ribs at their base instead of one. The dorsal plates of the fourth segment are nearly circular in outline, with a triangular sinus between their bases on the median line. While they extend laterally considerably beyond the margins of the genital segment they do not reach posteriorly as far back as in the female. The genital segment is less than half the width of the carapace, longer than wide, narrowed into a waist where it joins the fourth segment, and convex posteriorly. At each posterior corner is a wide process, flattened laterally, and extending diagonally outward and backward to about the level of the center of the abdomen. These processes taper gradually and are tipped with two small spines. The abdomen is two-jointed and relatively the same as in the female.

Of the mouth parts the maxillary hooks are somewhat smaller and shorter than those of the female; the maxillae are also smaller and the endopod is reduced so much as to be scarcely discernible. The furca is of the same general pattern, but the lateral branches are more slender and are directed diagonally backwards instead of standing out at right angles.

The swimming legs are similar to those of the female, except that the claws on the fourth pair are slightly enlarged.

Color (preserved material) a dark purplish red, deepened along the ribs and in the appendages.

Total length—female, 12.50 mm.; male, 10.50 mm. Length of carapace—female, 5.85 mm.; male, 4.66. Width of carapace—female, 5.50 mm.; male, 4 mm. Width of genital segment—female, 3 mm.; male, 1.95 mm.

(*costatus*, ribbed, alluding to the supporting ribs of the carapace.)

*Remarks.*—The male here described corresponds closely with the one presented by Stebbing<sup>1</sup> and is not at all like the one figured and described by Thomson.<sup>2</sup> This renders it even more probable that Thomson's specimens were both females—one with and the other without egg strings. The present species differs from *ornatus* in the dimensions of the carapace, in the size and shape of the dorsal plates on the fourth segment, in the length of the posterior lobes of the genital segment compared with the abdomen, and in the relative size of the latter.

#### SPECILLIGUS versus NESIPPUS.

In the Proceedings of the United States National Museum (vol. 33, p. 434), a parasitic copepod described by Dana under the name *Specilligus curticaudis* was referred to the genus *Nesippus*. Dana's description was published in 1852, while the genus *Nesippus* was not founded until 1865 by Heller. Apparently Heller's genus should be made a synonym of Dana's instead of the reverse, and some writers have already done this, supposedly believing that the two had been proved to be identical. Such a proceeding did not seem wise at the time above referred to, and seems even less so to-day, for the following reasons:

Dana's genus was founded upon one or two specimens, all of the male sex and unfortunately long since lost. His establishment of a new genus upon male specimens alone was not valid, because they properly belonged in the genus *Nogaus* as it then stood. There was no reason for separating them as a distinct genus, and such a reason could only be found in the structure of the females. But Dana possessed no female specimens and none have since been discovered, so that the genus still remains incapable of being justified. All the

<sup>1</sup> Willey's Zoological Results, pt. 5, 1900, p. 671, pl. 74, fig. A.

<sup>2</sup> Trans. New Zealand., vol. 22, 1889, p. 354, pl. 29, fig. 1a.

other genera in the Pandarinae are distinguished chiefly by the characters of the female, and the male plays an insignificant part in genus differentiation. And even Dana's type males are lost, so that they can never be identified with certainty.

If Dana's genus is restored, therefore, we have a genus not yet proved to be genuine, founded on the wrong sex, with the types lost, and which can never advance beyond a probability until the other sex is discovered.

On the other hand, Heller's genus was founded upon two species, the original female specimens of which are still preserved in the Vienna Museum, and to them have since been added the males. Accordingly, while it may not be allowable to make Dana's genus a synonym of Heller's, it certainly seems wise to retain Heller's genus, because it has been definitely proved. We can leave Dana's genus as it stands until female specimens are discovered, or until it can be conclusively established in some other way. Let us not, even in the cause of priority, sacrifice an absolute certainty for something that can never be more than a possibility.

#### LERNAEOPODA CLUTHAE.

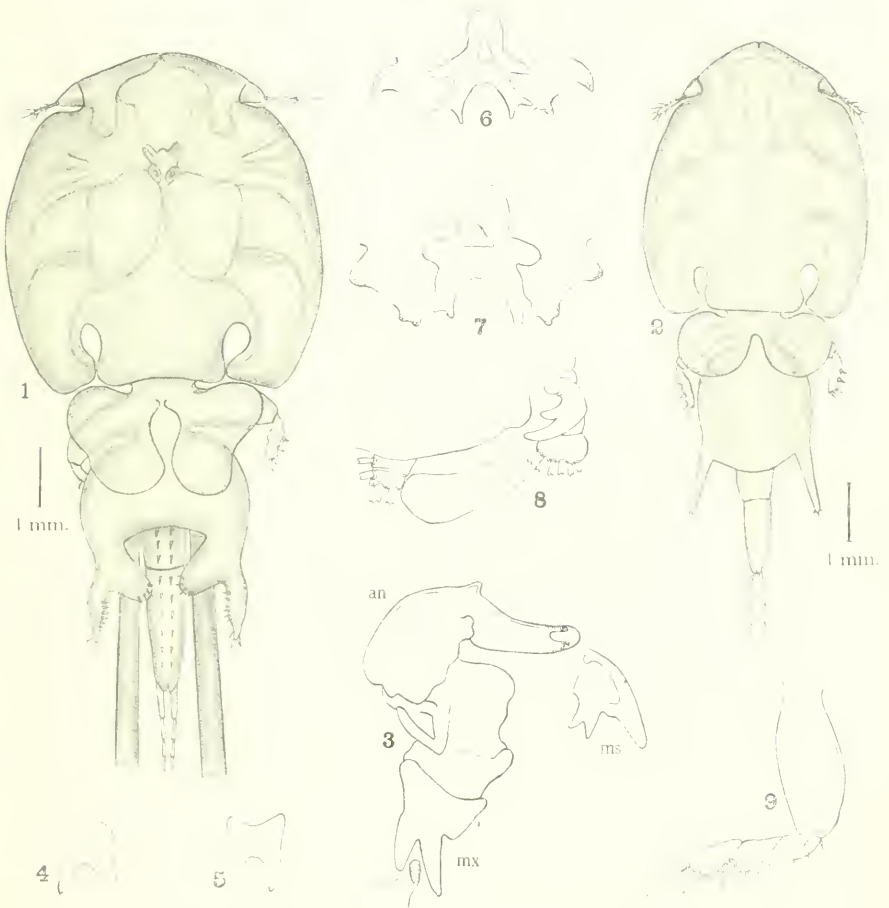
In volume 47 of these Proceedings an effort was made to locate intelligently the various species belonging to the *Lernaeopodidae*. One such species, *Lernaeopoda cluthae*, inadvertently appeared twice under different genera. The allusions to it found upon pages 653 and 654 should be eliminated, while those upon pages 639 and 640 should be retained.

#### LERNAEA ANOMALA.

In the Bulletin of the Bureau of Fisheries, volume 35, there is described (p. 194) and figured (pl. 14, figs. 68, 69, 70, 73, 74) a new species of parasitic copepod under the name *Lernaea anomala*. When this species was established it was placed in the genus *Lernaeocera*, as it then stood. It was afterwards found that the two genera must be transposed in accordance with the laws of priority. The specific name was all right as first established under *Lernaeocera*, but the name *Lernaea anomala* was preoccupied by Abildgaard in 1794, and although the creature he described did not belong to the genus *Lernaea*, nor even to the family *Lernaeidae*, it is still proper that the name be changed. Accordingly the specific name *insolens* is suggested in place of *anomala*, the two having the same meaning.

#### EXPLANATION OF PLATE 21.

*Gloiopotes costatus*, new species: Fig. 1. Dorsal view of female.—Fig. 2. Dorsal view of male.—Fig. 3. Second antenna, maxillary hook, and maxilla of female.—Fig. 4. Maxillary hook of male.—Fig. 5. Maxilla of male.—Fig. 6. Furca of male.—Fig. 7. Furca of female.—Fig. 8. Third leg of female.—Fig. 9. Fourth leg of male.



GLOIPOTES COSTATUS, A NEW PARASITIC COPEPOD.

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