

NOTES AND NEWS

REDESCRIPTION OF THE LITTLE KNOWN SHRIMP, *TOZEUMA CORNUTUM* A. MILNE-EDWARDS, 1881 (DECAPODA, HIPPOLYTIDAE)

BY

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A redescription is offered of the rare western Atlantic shrimp species, *Tozeuma cornutum* A. Milne-Edwards, 1881, based on material collected in 2003 from gorgonian samples in the Cayos Cochinos marine reserve on the Caribbean coast of Honduras.

Tozeuma cornutum was described in 1881 by A. Milne-Edwards, based on a single specimen from close to Barbados, at a depth of 73 meters (A. Milne-Edwards, 1881). Forest & Holthuis (1997) state that the specimen was collected by the "Blake" at Station 285 (13°05'12"N 59°37'18"W, off Barbados, 7th February 1879) on a coral bottom at a depth of 13 fathoms, in contrast to the type description which states 56 fathoms. Although the description is brief, it does mention a unique feature, the recurved, dorsal projection on the third abdominal somite. In 1883, the single specimen was illustrated by A. Milne-Edwards in his *Receuil* (see Forest & Holthuis, 1997) with on Plate 29 a toto drawing and various appendages (first and second pereopods, third pereopod?, antennal scale, and antennule), as well as a dorsal and lateral close-up of the frontal region. The holotype ovigerous female (postorbital carapace length approx. 6 mm) is still present in the Muséum national d'Histoire naturelle, Paris (MNHN-Na.1529) (R. Cleva, pers. comm.). A second unidentifiable specimen (cephalothorax and some thoracic appendages only, ?Hippolytidae) is present in the vial with the holotype (R. Cleva, pers. comm.). Given the presence of 4 dorsal teeth on the remainder of the rostrum, this specimen clearly does not belong to *T. cornutum*, and the origin of this specimen remains unclear.

Since then, the species has only been collected a total of six times. Ewald (1969) mentions a single specimen from deep water, east of the Florida Keys; Chace (1972) mentions an ovigerous female from Great Lameshur Bay, Saint John, U.S. Virgin Islands; Saloman (1979) mentions a single specimen off Panama City Beach, Florida and an additional specimen from off Mexico Beach, Florida. Lastly,

Spotte et al. (1995) recorded 4 juveniles, as *Tozeuma* cf. *cornutum*, from Guana Island, British Virgin Islands. Although the latter specimens have not been re-examined, Spotte et al. (1995) mention the unarmed ambulatory dactyli, a species specific character distinguishing *T. cornutum* from all other western Atlantic *Tozeuma*. R. Heard (pers. comm.) also collected this species in 1993 from off Sombrero Light in the Florida Keys. Only Spotte et al. (1995) record what appears to be the true habitat of the species, as it was collected from *Pseudopterogorgia americana* (Gmelin, 1791) (Gorgonacea) in Guana Island, with the other records not mentioning any habitat details, though Saloman (1979) records it from a shallow subtidal sandbar, collected by core sampler. Although this record may appear dubious, a voucher specimen is lodged in the USNM and its identity was confirmed by R. Manning.

Based on Spotte et al. (1995), R. Heard (pers. comm.), and the present collection from the Cayos Cochinos in Honduras, it now becomes clear that *T. cornutum* is a commensal species on *P. americana*, as are several other caridean shrimps. In accordance with its rarity, no supplementary morphological features have been offered since the type description, nor has the species been illustrated in some detail, both of which are rectified here.

Abbreviations used: OUMNH Zoo. Coll. = Oxford University Museum of Natural History, Zoological Collections; MNHN = Muséum national d'Histoire naturelle, Paris; RMNH = Nationaal Natuurhistorisch Museum, Leiden; USNM = Smithsonian Institution, Washington, D.C.

***Tozeuma cornutum* A. Milne-Edwards, 1881**

(fig. 1)

Tozeuma cornutum A. Milne-Edwards, 1881: 16.

Tozeuma cornutum — A. Milne-Edwards, 1883, pl. 29; Ewald, 1969: 511; Chace, 1972: 141;

Saloman, 1979: 151; Chace, 1997: 93; Forest & Holthuis, 1997: 28, 54, 59, 95 (pl. 29).

Tozeuma cf. *cornutum* — Spotte et al., 1995: 291, 292 (table), 299.

Material examined. — Four ovigerous females (post orbital carapace lengths 6.7, 6.8, 7.3, 7.8 mm), 2 females (pocl 4.8, 4.9), 1 male (pocl 4.8), 5 juveniles (pocl 2.9, 3.2, 3.2, 3.3, 4.6); Pelican Point, Cayos Grande, Cayos Cochinos, Caribbean coast of Honduras, from *Pseudopterogorgia americana*, depth range 4.6–16.7 m, leg. M. Dowell & D. Livingston, July 2003, OUMNH Zoo Coll. 2004-17-0001. One ovigerous female (pocl 7.2 mm), 1 female (pocl 5.1), 2 males (pocl 5.0, 5.7), 1 juvenile (4.1); Pelican Point, Cayos Grande, Cayos Cochinos, Honduras, from *Pseudopterogorgia americana*, depth range 4.6–16.7 m, leg. M. Dowell & D. Livingston, July 2003, RMNH D 50891.

Differential diagnosis. — Body elongate, compressed. Carapace smooth, supra-ocular tooth well developed (fig. 1A), inferior orbital angle produced into lobe, anterolateral angle with small spine. Rostrum long, about 1.1–1.3 times as long as carapace (fig. 1A), straight; dorsal margin unarmed, ventral margin with 7–11 teeth.

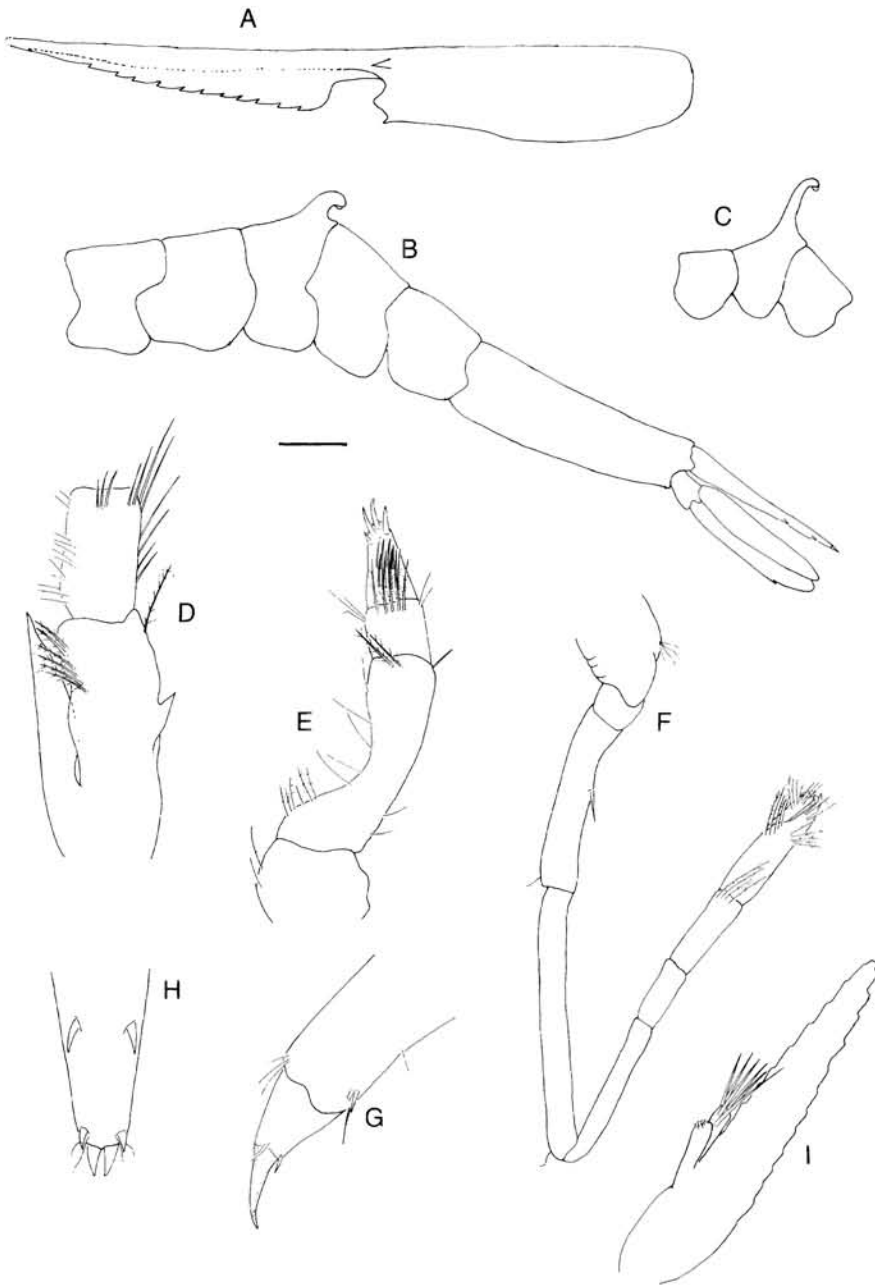


Fig. 1. *Tozeuma cornutum* A. Milne-Edwards, 1881; Cayos Cochinos, Honduras. A-B, ovigerous female (pocl 7.20 mm); C, juvenile (pocl 3.20 mm); D-H, ov. female (pocl 7.80 mm); I, male (pocl 5.70 mm). A, carapace; B, abdomen; C, second to fourth somite; D, antennular peduncle; E, third maxilliped; F, second pereiopod; G, dactylus of fifth pereiopod; H, tip of telson; I, appendix interna and appendix masculina of second pleopod. Scale bar indicates 1.5 mm (A, B), 1 mm (C), 0.5 mm (D), 0.4 mm (F), 0.3 mm (E, G, I), or 0.15 mm (H).

Abdomen smooth, weakly bent between third and fourth somite (fig. 1B); third somite with dorsal projection, projection recurved and bifid at tip; projection more pronounced in juveniles (fig. 1C); sixth somite elongate, nearly three times as long as fifth segment; all somites with posterior margins unarmed. Antennular peduncle slender, first segment longest, stylocerite reaching just past distal margin of first segment; first segment with mesial tooth, situated approximately half way along margin (fig. 1D). Third maxilliped short, recurved in dorso-ventral plane (fig. 1E), subterminal and terminal articles short, 0.25 and 0.37 times as long as proximal article, respectively. Second pereopods elongate, ischium furnished with single spine on inferior margin (fig. 1F); carpus three-segmented, proximal subsegment subequal in length to subterminal and terminal subsegments combined. Third to fifth pereopods robust, short; propodus distally with pair of small spines (fig. 1G); carpus lacking accessory spines. Telson elongate, narrowing distally, pairs of dorsal spines at 0.65 and 0.80 of length; tip quadrate with a pair of subapical and apical spines (fig. 1H). Appendix masculina slightly longer than appendix interna, furnished subterminally with two setae, terminally with four (fig. 1I).

Colouration. — Specimens were an overall red/maroon colour, fading out to pinkish on appendages.

Habitat. — All specimens were collected from the Slimy Sea Plume, *Pseudopterogorgia americana*, together with the caridean shrimps, *Neopontonides chacei* Heard, 1986; *Hippolyte nicholsoni* Chace, 1972; *Periclimenes patae* Heard & Spotte, 1991; and *Pseudocoutierea antillensis* Chace, 1972. Only eight gorgonian colonies, out of a total of 60 sampled, harboured *T. cornutum*, with usually only a single specimen encountered per colony. Only two colonies harboured higher numbers, five and seven shrimps, respectively.

Remarks. — *Tozeuma cornutum* can easily be differentiated from the two other western Atlantic species of the genus (*T. carolinense* Kingsley, 1878; *T. serratum* A. Milne-Edwards, 1881) by virtue of the dorsal projection on the third somite, as well as on the basis of the non-elongate terminal segments of the third maxilliped and the lack of accessory spines on the dactyls of the ambulatory pereopods. The dorsal projection on the third somite is clearly a neotenic character, as such a projection is present in the larvae of several species of *Tozeuma* (cf. Gurney, 1937; Ewald, 1969), substantiated by the fact that it is more elongate in juvenile specimens (fig. 1C). Care needs to be exercised when using the worldwide key to the genus in Chace (1997), as a distinct supra-ocular spine is present in the Honduran specimens, as it is indeed in the holotype (R. Cleva, pers. comm.).

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