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A Further Description of *Promysis atlantica* Tattersall (Crustacea, Mysidaceae)

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Since Tattersall's original record and description of *Promysis atlantica*, there have been no subsequent reports in the literature of this species. Tattersall's description was based on a single, immature female specimen, 4 mm. in length, taken off Rio de Janeiro, Brazil. Of interest is the occurrence of *P. atlantica* in plankton off the coasts of Louisiana, South Carolina, and North Carolina, areas geographically some 4500 miles to the north and west of Rio de Janeiro. Material from Louisiana was collected by Mr. Martin D. Burkenroad off Bartaria Light. Five specimens of *P. atlantica*, along with specimens of *Mysidopsis bigelovi* Tattersall, were taken on two consecutive nights in vertical hauls some 10 miles off shore. Other material more extensive and more recently collected from off the Carolinas was kindly sent to the present author by Dr. Thomas Bowman. Numerous adult male specimens contained in these collections were of particular interest, as the male of this species was heretofore unknown. Although characters of the adult male and female bear further description, those utilized by Tattersall for distinguishing this species from *P. orientalis* are on the whole valid.

Promysis atlantica is somewhat more attenuate in appearance than *P. orientalis*. The body of this species is not nearly so compact or robust as that of *P. orientalis*. To begin with a description of the antennules and other structures, the male of *P. atlantica* bears a brush-like tuft of closely set setae on the inferior surface of the distal article of the antennular peduncle. The distal or third article of the antennular peduncle is longer and more slender in the female than in the male (figs. 5, 6). The antennae are essentially the same in both sexes. They differ from those

of *P. orientalis* chiefly in the size of the antennal scale. In *P. atlantica* the antennal scale is shorter than the antennular peduncle in the case of the female and as long as the antennular peduncle in the male, whereas in *P. orientalis* this structure projects beyond the antennular peduncle. The eyes of *P. atlantica* are long and cylindrical. The corneal part is equal to one-third of the basal or non-corneal portion of the eye in adult specimens. This elongate eye structure contrasts considerably with that of *P. orientalis* in which the cornea is only slightly shorter than the basal portion of the eye. The carapace in the adult is produced anteriorly into a broad-based, bluntly pointed rostrum which overhangs the bases of the eyes. The rostrum is more rounded in smaller individuals in agreement with Tattersall's description. The length of the carapace is about two-thirds to three-fourths of that of the abdomen. The marsupium of the female is globose in shape and projects well behind the posterior edge of the carapace. It extends at least as far as the middle of the first abdominal segment (fig. 1). The first five abdominal segments are of equal size; the last segment, however, is twice as long as the segment preceding it (fig. 3). The pleopods in the female are much reduced, but in the male they are large and functional (figs. 1, 3). There is no apparent differentiation of the pleopods of the male, and all preserve their primitive biramous structure. The uropods are roughly twice as long as the telson (fig. 2). The inner ramus is slightly shorter than the outer in the adult. In Tattersall's description, based on a juvenile, he stated that the inner ramus was as long as or slightly longer than the outer. This slight discrepancy is understandable in view of the developmental changes in proportions that accompany growth. In the smaller specimens of *P. atlantica* the inner ramus is equal to the outer in length. The statocyst of the inner ramus is large and inflated. The distal blade of the inner ramus extending down from the statocyst is extremely narrow in comparison with the outer ramus. The spines arming the inner edge of the blade are much the same as those figured by Tattersall, demonstrating that there is little or no change between the juvenile and adult condition in this character. The telson is notched and bears spines along the greater portion of its lateral margins, in contrast to the juvenile condition where only the distal three-fifths of the margins are armed. There are no setae in the notch as there are in *P. orientalis*. The terminal two spines arming the apices of the telson are somewhat larger than those that follow along the lateral margins of the telson. The spines of the distal end of the spine row are crowded and closely set, but towards the proximal end they become more widely spaced (fig. 4). An adult female specimen was found to have 23 spines along the lateral margin of the telson. This number, as

should be expected for an adult, is somewhat greater than Tattersall's. Adult specimens measure 7 mm. to 8 mm. in length.

An additional point concerning the uropods bears comment. Tattersall in his description of *P. atlantica* mentions a prominent spiniform protuberance on the external margin of the inner uropod near the juncture of the distal blade with the statocyst. A similar spine-like protuberance was figured by Hansen for his species *Uromysis armata* which Tattersall in his Great Barrier Reef report (1936) synonymized with *P. orientalis*. Tattersall was of the opinion that Hansen had described some immature specimens of *P. orientalis*. However, Tattersall's figure of the uropod of an adult *P. orientalis* does not indicate such a protuberance. Evidently this structure disappears by the time the adult condition is reached, or perhaps Tattersall overlooked it. In an unlike manner the adult of *P. atlantica* preserves this spiniform protuberance.

The author wishes to thank Dr. T. Bowman for sending data concerning localities of *Promysis atlantica* off the southeastern coast of the United States. Specimens of this species were taken by a Fish and Wildlife Service research vessel off Charleston, South Carolina (32° 12' N. by 79° 32' W.), and south of Cape Hatteras, North Carolina (35° 01' N. by 75° 45' W.). *Promysis atlantica* apparently ranges from southern Brazil north throughout the Caribbean Sea and Gulf of Mexico, and up the Atlantic coast of North America as far as North Carolina. It seems quite likely that it may even occur in Virginian coastal waters. Ecologically, *P. atlantica* appears to be a neritic species comparable in habits to *Gastrosaccus johnsoni*, *Anchialina typica*, and *Mysidopsis bigelowi*.

GENERAL DISCUSSION

Tattersall (1923) originally described *P. atlantica* from a single specimen collected during the British "Terra Nova" expedition to Antarctica. In this paper he synonymized Hansen's genus *Uromysis* with Dana's genus *Promysis* and stated that he thought Hansen's species *Uromysis armata* was synonymous with Dana's *Promysis orientalis*. Zimmer in 1915 and Colosi in 1918 and 1920 referred specimens from the East Indies to *Uromysis armata*. In 1936, Tattersall in his report on the Mysidacea and Euphausiacea of the Great Barrier Reef expedition synonymized *Uromysis armata* Hansen with *Promysis orientalis* Dana. After examining material from the Great Barrier Reef Lagoon, he was convinced that the discrepancies encountered in the descriptions of Hansen and Dana for their respective species could be explained as age differences. Hansen's largest specimen was 4 mm. in length, whereas Tattersall's specimens were 6 mm. to 7 mm. in length, agreeing with

Dana's in size. The differences in spiny armature of the telson and number of setae on the second maxilla in the two species, as pointed out by Tattersall, are quite in harmony with growth changes encountered in other mysid species. The only unexplainable difference is the absence of the plumose setae from the notch of the telson in Hansen's specimens. Hansen had 15 specimens, and it seems unlikely that he would overlook such a structure. Perhaps, as Tattersall has suggested, these setae were broken off in the specimens that Hansen examined closely.

The genus *Promysis*, therefore, contains two species at present, *P. orientalis* Dana and *P. atlantica* Tattersall.

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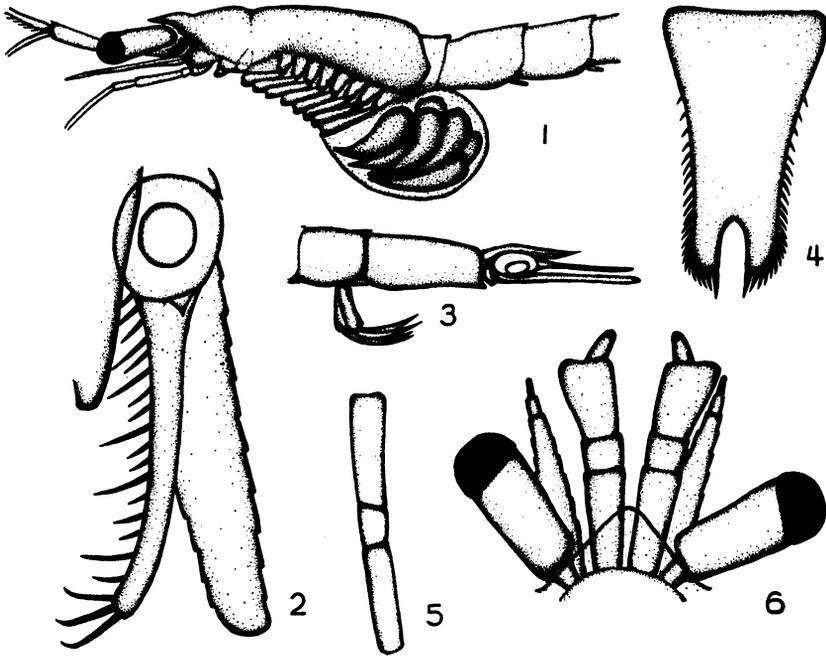


FIG. 1. Lateral view of an adult female *Promysis atlantica*, with the thoracic appendages partially removed.

FIG. 2. Dorsal view of the right uropod, with outline of telson indicated in part.

FIG. 3. Lateral view of terminal portion of abdomen of male.

FIG. 4. Dorsal view of telson.

FIG. 5. Dorsal view of right antennular peduncle of female.

FIG. 6. Dorsal view of anterior portion of male.

