

31466

WICKSTEN 1989

18 October 1989
PROC. BIOL. SOC. WASH.
102(3), 1989, pp. 644-645

HIPPOLYTE ZOSTERICOLA
(CRUSTACEA: DECAPODA) IN THE
EASTERN PACIFIC

Mary K. Wicksten

Abstract.—Specimens of *Hippolyte zostericola* have been taken in western Colombia. These animals fall well within the range of variation found in specimens from the Atlantic and Caribbean regions, and can be distinguished readily from *H. williamsi*, the other common hippolytid shrimp of the tropical eastern Pacific.

During a survey of caridean shrimp of western Colombia, Gabriel Ramos of the Universidad del Valle sent me 18 specimens of an unidentified hippolytid shrimp, taken at San Antonio, Municipio de Robles, Tumaco (about 2°N, 79°W), on a mud bottom, 3 Aug 1984, by Henry von Prohl. All but one were ovigerous females, no functional males were collected. The shrimp fall within the range of variation for *Hippolyte zostericola* (Smith), previously reported from Massachusetts, U.S.A. to Yucatan, the Bermudas, and south to Trinidad, Curaçao, and Ceara, Brazil (Chace 1972, Williams 1984). The specimens from Colombia have been placed in the collections of the National Museum of Natural History, Smithsonian Institution, and the Allan Hancock Foundation, University of Southern California and Los Angeles County Museum of Natural History. Another five specimens, examined by Gabriel Ramos, have been added to the collections of the Universidad del Valle in Cali, Colombia (catalog number CRBMUV 84013).

Hippolyte zostericola is variable: the rostrum usually overreaches the antennular peduncle in adult females, and bears from one to three dorsal and from one to four ventral teeth. The basal article of the antennular peduncle is long and broad, without terminal spines. The rostrum is slightly shorter than the blade of the antennal scale. The

third pereopod has a stout dactyl armed with three large, terminal spines grading into a series of smaller spines on the flexor margin. There is only one spine on the carpus and merus of the third pereopod.

Chace (1972) and Williams (1984) remarked on the similarity between *H. zostericola* and *H. pleuracanthus* (Stimpson), reported from Connecticut to North Carolina. The latter species has a shorter rostrum, not overreaching the antennular peduncle, with from one to three dorsal and from one to three ventral teeth. Chace (Fig. 48) shows *H. pleuracanthus* as having a rostrum terminating in a sharp point, with two ventral subterminal teeth close to the tip, while *H. zostericola* is shown as having a rostrum with a nearly bifurcate tip and two ventral teeth well removed from the tip. *H. pleuracanthus* is shown having four spines on the merus of the third pereopod. Specimens of *H. zostericola* from the Gulf of Mexico tend to have the longest rostrum within the species, while some from Massachusetts have a rostrum not exceeding the antennular peduncle.

The specimens from western Colombia vary considerably. All but two have a rostrum barely exceeding the antennular peduncle, with two or three dorsal and two ventral teeth and a bifurcate tip. In two, the rostrum is shorter than the antennular peduncle, barely exceeding the cornea of the

eye. One has one dorsal and one ventral tooth, while the other has two dorsal teeth and a single apical point, not a bifurcate tip. As in *H. zostericola*, the basal segment of the antennular peduncle lacks spines, and the merus of the third pereopod bears one spine. The dactyls are similar in both species.

I compared the specimens from Colombia with individuals of *H. zostericola* from Redfish Bay, Texas. In the latter specimens, the rostrum exceeded the antennular peduncle, and had two dorsal and three ventral teeth with a bifurcate tip. Except that the rostrum was proportionally longer, the specimens were similar.

One cannot rule out the possibility that the specimens from Colombia, isolated from populations in the western Atlantic and Caribbean, belong to a distinct species. Geminate pairs of species living on opposite sides of the Panamic land mass are known among other decapods, such as the spider crabs *Pellicia pacifica* (Pacific) and *P. mutica* (Atlantic and Caribbean) and many others (Garth 1958). Although the specimens from the eastern Pacific are indistinguishable from *H. zostericola* on the basis of morphology, there may be genetic, behavioral or ecological differences that warrant their future designation as a separate species.

One other species of *Hippolyte*, *H. williamsi* Schmitt, can be common in the trop-

ical eastern Pacific. It is readily distinguishable from *H. zostericola* by the presence of three spines on the basal segment of the antennular peduncle. Mature females are about 25 mm in total length, while the largest adult *H. zostericola* from Colombia is 10.7 mm long. Williams (1984) gives a total length of 15.5 mm for females of *H. zostericola*. In *H. williamsi*, the rostrum of the female greatly exceeds the antennular peduncle. The two species may differ in habitat; *H. zostericola* lives among sea grasses and in sheltered bays, while *H. williamsi* can be common in tidepools and rocky areas with algae.

Literature Cited

- Chace, F. A., Jr. 1972. The shrimps of the Smithsonian-Bredin Caribbean expeditions with a summary of the West Indian shallow-water species (Crustacea: Decapoda: Natantia).—*Smithsonian Contributions to Zoology* 98:1–179.
- Garth, J. S. 1958. Brachyura of the Pacific coast of America: Oxyrhyncha.—*Allan Hancock Pacific Expeditions* 21(1):1–499.
- Williams, A. B. 1984. Shrimps, lobsters, and crabs of the Atlantic coast of the eastern United States, Maine to Florida. Washington D.C., Smithsonian Institution Press, 550 pp.

Department of Biology, Texas A&M University, College Station, Texas 77843.