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OCCURRENCE OF *MYSIDOPSIS ALMYRA* BOWMAN, *M. BAHIA* MOLENOCK AND *BOWMANIELLA BRASILIENSIS* BACESCU (CRUSTACEA, MYSIDACEA) FROM THE EASTERN COAST OF MEXICO

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ABSTRACT Three species of mysids, *Mysidopsis almyra*, *M. bahia* and *Bowmaniella brasiliensis* are recorded for the first time from four locations along the eastern coast of Mexico. Data on geographical distribution, population structure, length, brood size, and morphological variation are given.

INTRODUCTION

Only two mysid species have been reported from the shallow waters along the eastern coast of Mexico between the Rio Grande and the Yucatan peninsula. Bacescu (1968) reported *Bowmaniella dissimilis* (Coifmann) from Veracruz, Veracruz, and Price (1975) reported *Metamysidopsis swifti* Bacescu from Tuxpan and Punta de Anton Lizardo in Veracruz. This paper reports the collection of three additional mysid species from four locations along the eastern coast of Mexico in May 1973.

MATERIAL AND METHODS

Collections were made with a 1.5 m hand-drawn beam trawl (Renfro 1963) and preserved in 5% formalin. Temperature was measured with a hand-held mercury bulb thermometer and salinity was measured with a refractometer.

RESULTS AND DISCUSSION

Collection sites are shown in Figure 1. The northernmost collection was made 1 km west of La Pesca, Tamaulipas (23°50'N; 97°46'W) in 1 m of water over an oyster-shell bottom. Thirty-two *Mysidopsis almyra* Bowman were found here. Collections were made at two locations on the western shore of Laguna de Tamiahua, Veracruz, a lagoon situated between Tampico and Tuxpan. Ninety-two *M. Almyra* and 16 *M. bahia* Molenock were taken 3 km north of San Geronimo (21°33'30"N; 97°36'30"W) in a natural oil seep area. The water depth was 1.5 m and the bottom consisted of shell mixed with nodules of tar-shell conglomerate. Six km north of this site, 155 *M. bahia* were collected in thick *Ruppia maritima* beds at the confluence of Estero Cucharas River and the lagoon in Cucharas. The water depth was 1.0 to 1.5 m and the bottom was muddy. Four specimens of *Bowmaniella brasiliensis* Bacescu were collected 3 km north of the jetty at Tuxpan, Veracruz (21°00'N; 97°21'W) at the seaside beach in 1 m of water over a sand-shell bottom. Table 1 shows the water temperature and salinity at each location.

The previously known geographic ranges of *M. almyra* and *M. bahia* extended from the southwestern Everglades, Florida (Bowman 1964; Brattegard 1969, 1970; Odum and Heald 1972) to Baffin Bay, an embayment connecting with

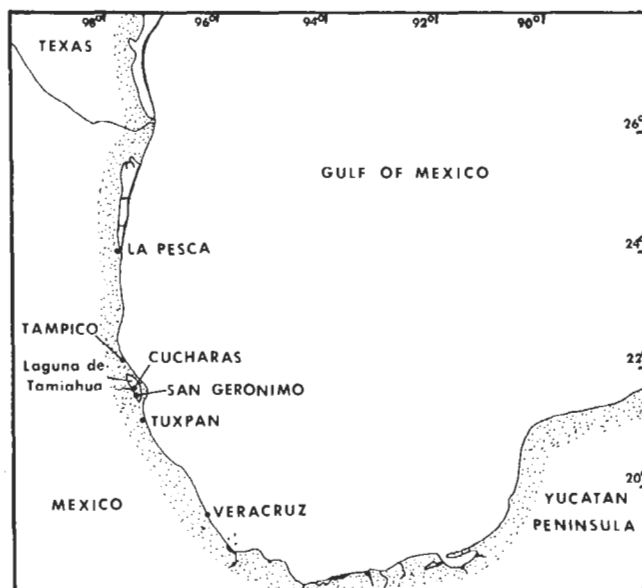


Figure 1. Location of collecting sites on eastern coast of Mexico.

the Laguna Madre on the southern Texas coast (Mackin 1971). This report extends the southern range of these two species approximately 650 km. *Bowmaniella brasiliensis* was previously reported from Brazil, Georgia, the Caribbean coast of Panama (Brattegard 1974), the Galveston Bay area, Texas (Conte and Parker 1971; Price 1976) and Baffin Bay, Texas (Mackin 1971). The collection locality of *B. brasiliensis* reported by this study lies between the previously known locations of Baffin Bay, Texas and the Caribbean coast of Panama; this is in all likelihood indicative of a continuous distribution of this species along the coastal areas of the western Gulf of Mexico and Caribbean Sea.

The developmental groups for the three mysid species at the four locations are shown in Table 1. For *M. almyra* and *M. bahia*, brooding females comprised the largest portion of the population at each location, and mature individuals greatly outnumbered immatures. Females outnumbered males at each site, attaining ratios of 3.4:1.0 for *M. almyra* at San Geronimo and 2.5:1.0 for *M. bahia* at Cucharas.

Table 1.
Number per developmental group for *M. almyra*, *M. bahia* and *B. brasiliensis* at each location.

Developmental groups	La Pesca (30 ^a , 14 ^b)	San Geronimo (31 ^a , 20 ^b)		Cucharas (34 ^a , 18 ^b)	Tuxpan (25 ^a , 37 ^b)
	<i>M. almyra</i>	<i>M. almyra</i>	<i>M. bahia</i>	<i>M. bahia</i>	<i>B. brasiliensis</i>
Brooding ♀♀	11	44	5	87	
Broodless mature ♀♀	7	18	1	10	
Mature ♂♂	7	15	7	37	4
Immature ♀♀	4	9	3	14	
Immature ♂♂	3	6	0	7	
Total	32	92	16	155	4

^aWater temperature °C

^bSalinity ppt

Length measurements (base of eyestalk to posterior ends of uropods, excluding setae) for collections of *M. almyra* and *M. bahia* from San Geronimo and Cucharas revealed that females were larger than males for both species. Lengths of brooding *M. almyra* averaged 5.6 mm (range 5.0 to 6.7 mm) and mature males averaged 4.9 mm (4.0 to 5.5 mm). The mean length of brooding *M. bahia* was 5.3 mm (4.0 to 6.6 mm) and the mean length of mature males was 4.4 mm (3.8 to 5.4 mm). In Galveston Bay, Texas during May–June 1971/72 and 1973/74, the mean length of brooding *M. almyra* was 4.9 mm (4.3 to 6.8 mm) and the mean length of gravid *M. bahia* was 5.3 mm (4.3 to 6.3 mm) (Price 1976). The average length of the four mature male specimens of *B. brasiliensis* was 6.5 mm (6.3 to 6.7 mm).

Brood size measurements for the San Geronimo and Cucharas collections indicated that brood size increased with increasing length of the female for *M. almyra* and *M. bahia*. Mean brood size was 9.0 young (4.0 to 15.0) for *M. almyra* and 5.5 young (3.0 to 12.0) for *M. bahia*. A similar relationship between brood size and length of female was found for these two species in Galveston Bay, Texas during May–June 1971/72 and 1973/74. However, the mean brood size was 5.4 young (3.0 to 10.0) for *M. almyra* and 7.0 young (3.0 to 14.0) for *M. bahia* (Price 1976).

Several differences exist between the specimens of *M. almyra* described by both Bowman (1964) and Brattegard (1969) and those from the present study. Bowman and Brattegard, respectively, reported 6–7 and 6–8 pairs of long slender spines on the telson apex; my adult specimens had 4–5 pairs of spines. Antennal scales as well as the first and fourth male pleopods of specimens examined during this study agreed with Brattegard rather than Bowman. I found no distal segment on the antennal scale reported by Bowman. In addition adult males had five setae on the

pseudobranchial lobes at the base of the endopods of the first and fourth pleopods rather than six as reported by Bowman; in contrast to Bowman's specimens the narrow lobe distal to the pseudobranchial lobe of the fourth male pleopod was lacking. Other characteristics agreed with previous descriptions.

Specimens of *M. bahia* from Mexico agreed with those described by Molenock (1969) and Brattegard (1970) except for two characteristics. Molenock and Brattegard, respectively, reported 4–5 and 4–6 pairs of long slender spines on the telson apex; my adult specimens had 3–5 (usually 4) pairs of spines. The curvature of the anterior dorsal margin of the carapace of my specimens was in agreement with Molenock's illustration which showed it to be broadly triangular and slightly produced between the eyestalks. The anterior carapace margin of Brattegard's specimens was broadly rounded and not produced between the eyestalks.

Several differences were noted between the specimens of *B. brasiliensis* described by Bacescu (1968) and my specimens. Bacescu reported 6–7 lateral spines on the telson and I found 7–8 spines. The cleft depth/telson length ratio from Bacescu's illustration was 0.08 as opposed to 0.12 in this study. The lateral lobes of the sinus and the posterior dorsal margin of the carapace of my specimens were more triangular than the oval-shaped lobes of Bacescu's specimens. The corneal portion of the eye in my specimens was more oblique than the cornea in Bacescu's specimens. Other characteristics agreed with the original description.

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