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ON THE OCCURRENCE OF *Sphenocarcinus corrosus* MILNE-EDWARDS (BRACHYURA: MAJIDAE) IN THE GULF OF MEXICO

Many workers have concentrated on the brachyuran decapod fauna of the Gulf of Mexico (Wass, 1955; Chace, 1956; Bullis and Thompson, 1965; Abele, 1970; Rouse, 1970; Soto, 1972; Felder, 1973) with one worker (Powers, 1978) reporting 352 species of brachyuran crabs from this region. Within the family, Majidae, 83 species in 29 genera are reported with *Stilbomastax margaritifera* added by Williams *et al.* (1977).

This is the first record of an additional species, *Sphenocarcinus corrosus* Milne-Edwards, 1875 from the northeastern Gulf. Previously collected from North Carolina south to Barbados, this record

extends the known geographic and bathymetric range of this species (Fig. 1). Established depth ranges taken from previous accounts (Rathbun, 1925; Williams, 1965) range from 165 to 270m. Specimens examined during this study, however, were collected from as shallow as 85m, a considerable depth extension, with the deepest examined from only 98m.

Material examined for this study consisted of 14 individuals collected in the northeastern Gulf of Mexico and comparative specimens from North Carolina: 1 male, 9.2 cl, T. S. Hopkins, 18 October 1975, (BLM 22-100-VI-B-a) 29° 32' 45" N, 87° 23' 30" W; 6 male, 3 females, 7.6-24.5 cl. T. S. Hopkins, 9 February 1976, (BLM 30-VI-B-C-1) 29° 32' 45" N, 87° 24' 15" W; 1 female, 19.9 cl, T. S. Hopkins, 27 June 1976, (BLM 40-VI-B-C-1) 29° 35' N, 87° 20' W, 98m; 1 male, T. S. Hopkins, 8

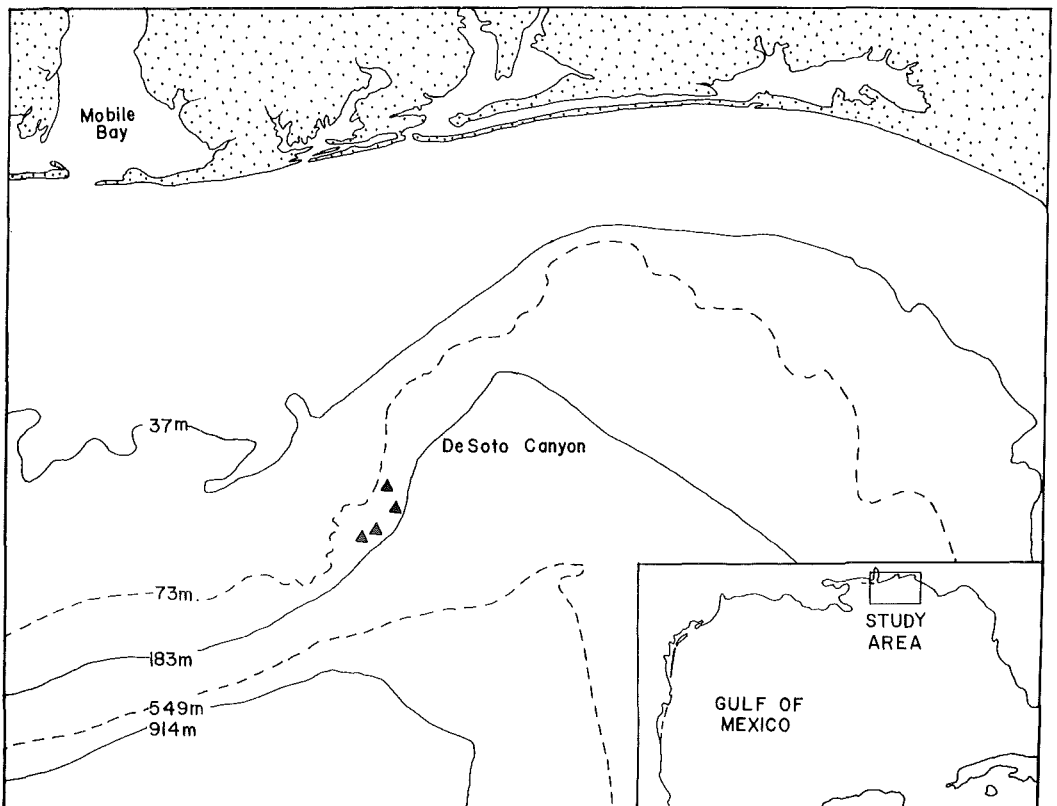


Figure 1. Station locations of material examined from Gulf of Mexico.

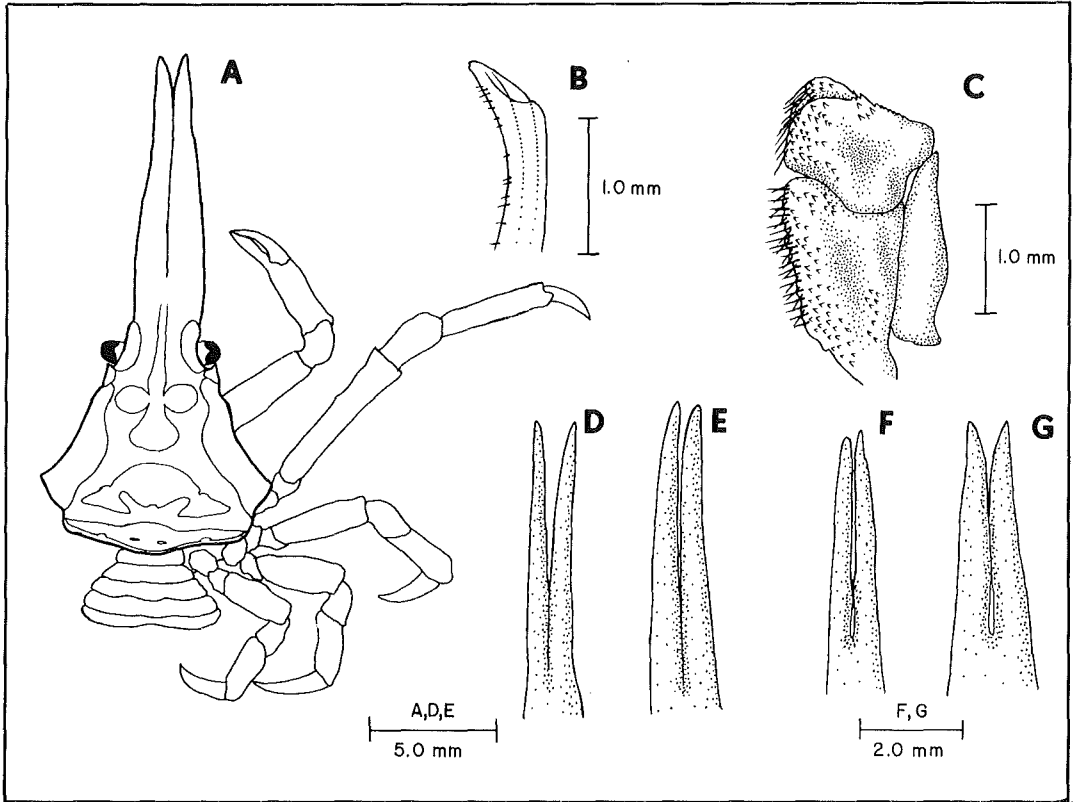


Figure 2. *Sphenocarcinus corrosus* Milne-Edwards. A) ovigerous female from Gulf of Mexico; B) tip of male pleopod one; C) third maxilliped; rostral series of material from Gulf of Mexico (E,F) and North Carolina (D,G).

February 1978, 29° 34' 59" N, 87° 20' 07" W, 95m, 2 females, 14.8 (one broken), J. T. Williams, 27 May 1979, 29° 37' 30" N, 87° 21' W, 85m; 1 female (ovig), USNM 15183, 22.4, ALBATROSS, 2 April 1885, Cape Fear, North Carolina, 33° 20' N, 77° 05' W, 165m; 1 male, USNM 51071, 12.5, FISH HAWK, 28 July 1915, 30 miles South Cape Lookout Lightship, North Carolina, about 183m.

Rathbun (1925: 187) pointed out the extent of individual variation of the development of the rostrum within this species. A comparison of previously published illustrations has also brought attention to variation in the degree of sculpturing on the dorsal surface of the carapace. The figure which accompanied the original description of *Sphenocarcinus corrosus* A. Milne-Edwards, 1875, illustrates the

elevations of the carapace. On the type specimen from Barbados, the elevations of the protogastric, gastric and lateral regions are disconnected. Rathbun (1925: pl. 62) figures a female from North Carolina with the gastric and protogastric lobes connected. The cardiac, gastric and lateral lobes of the specimen are also more developed than the Barbados material. The illustration of Williams (1965: 248) shows the gastric, protogastric and lateral lobes connected and fused anteriorly. The lateral lobes of material figured in Williams (1965, 248) are not as well developed as the illustrations of previous authors. Specimens from the Gulf of Mexico most closely fit the specimen illustrated by Rathbun (1925). There is a high degree of variation in the development of the lobes of the carapace in

material examined in this study and a fair amount of variation also evident in the rostral spines. The rostrum of some specimens is fused throughout its length while in others the spines are divergent and not fused in the distal half of the rostrum (Fig. 2).

Williams (1965: text fig. 233C) has illustrated the first male pleopod of *Sphenocarcinus corrosus* from the Carolinas and Garth (1958, 533) illustrated the gonopod of its Pacific analogue, *S. agassizi* Rathbun, 1893. Specimens from the Gulf generally agree with the previously published figure of the gonopod with the exception of slight differences in the apex development. Gulf specimens appear slightly more developed in the apical lobe. A minor difference in the third maxilliped compared with Rathbun (1925, fig. 73) could be attributed to the angle at which these parts were observed. A comparison with the type specimens was not thought necessary.

Published records of this species (A. Milne-Edwards, 1875; Hay and Shore, 1918; Rathbun, 1925; Williams, 1965) have defined the previous geographic limits from Cape Lookout, North Carolina, to the Barbados but have contained little information of substrate types. Rathbun (1925) reports the species from gray sand off North Carolina and coral and broken shell off Barbados. Garth (1958) reports *S. agassizi* from a wide variety of substrates ranging from coral to rock with sand and mud with shell. Analysis of substrate information for our collections shows *S. corrosus* collected from bottoms of very coarse sand shell rubble.

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SOME FACTORS INFLUENCING THE DISTRIBUTION OF THE SNAIL *Neritina reclivata*

The gastropod Family Neritidae contains over 200 living species, most of which inhabit intertidal zones in tropical and temperate climates. The olive nerite, *Neritina reclivata* Say, is irregularly distributed along coastal regions of the Gulf of Mexico and the Caribbean Sea from 10 to 30 degrees N latitude. Its distribution ends in the north at Jacksonville, Florida on the Atlantic Ocean and in the south at Trinidad (Russell, 1941). Most records of *N. reclivata* are from coastal regions of the Gulf of Mexico, but this may be due to the paucity of faunal surveys elsewhere in its range.

Despite the common occurrence of *N. reclivata*, it remains virtually unstudied. Russell (1941) reported that *N. reclivata* inhabits brackish and freshwater, and is absent from many small islands in the Antilles that do not support permanent freshwater rivers. According to this author, *N. reclivata* is found on solid substrates in the water, but not on mud. *N. reclivata* crawls using monotaxic retrograde waves, a type of locomotion often found in species living on solid substrate (Gainey, 1976). Pilsbry (1931) noted the snail's presence on reeds and other aquatic plants near drainage canals and suggested that algae may comprise the food of the snail.

We have collected *N. reclivata* from hard substrates (e.g., plants, stumps, rocks) at locations between 5 km up the Escambia River and the western tip of the Gulf Breeze peninsula, Santa Rosa County, Florida. These locations correspond to a salinity range of 1 to 19 ppt (U.S. Environmental Protection Agency, 1975). Because our preliminary observations suggested an affinity of *Neritina* for solid substrates, we investigated this