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# Discovery of a Majid Host for the Commensal Amphipod *Stenothoe symbiotica* Shoemaker, 1956

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## NOTES

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### DISCOVERY OF A MAJID HOST FOR THE COMMENSAL AMPHIPOD *STENOTHOE SYMBIOTICA* SHOEMAKER, 1956

*James Darwin Thomas and Kalani D. Cairns*

A specific spider crab host, *Stenocionops spinimana* (Rathbun, 1892), Crustacea: Majidae, is reported for the first time for the commensal amphipod *Stenothoe symbiotica* Shoemaker, 1956 (Stenothoidae). This represents the first report of this amphipod since its original description from the Tortugas, Florida. Shoemaker's original description of *S. symbiotica* referred to the host only as "a large spider crab," collected from a depth of 91 m, south of Loggerhead Key, Tortugas, Florida, 7 August 1931. A "considerable" number of amphipods were found clinging to the exterior of this crab. Shoemaker (1956) also reported *S. symbiotica* from "an otter trawl at Tortugas," and at ALBATROSS station 20037, in 62-110 fm off South Carolina. No further mention of *S. symbiotica* or its host(s) has been made to date. The depth of capture and distribution of *S. spinimana* and the original majid host mentioned by Shoemaker are consistent, as are the ALBATROSS and Tortugas reports of *S. symbiotica*.

In 1978, the first author found 43 specimens of *S. symbiotica* on a large specimen of *S. spinimana* that had been captured in a lobster trap at a depth of 83 m off the lower Florida Keys. Immediate icing of the specimen is probably responsible for causing most of the amphipods to remain on the host. The majority of the amphipods were on and around the mouthparts of the crab. It has not been determined if aggregation around the mouthparts is normal or the result of amphipod movement to the area after capture. Also present on the crab were numerous octolasmid barnacles. The abundant fine hairs on the carapace, chelae and legs of *S. spinimana* appears to offer a favorable substratum for *S. symbiotica*.

In December 1982 we examined specimens of *S. spinimana* from the Indian River Coastal Zone Museum (IRCZM), Harbor Branch Foundation, Inc., Ft. Pierce, Florida for the presence of *S. symbiotica*. Five specimens of *S. symbiotica* were found among the bottom residue in museum jars containing *S. spinimana*, indicating they had been dislodged from the host. Examination of a single specimen of another deep-water majid from the same region, *Rochinia crassa* (Milne Edwards, 1879), that also had large numbers of attached octolasmid barnacles, revealed no specimens of *S. symbiotica* or any other amphipods.

It is probable that a large number of decapod species house various small ectocommensals such as *S. symbiotica*. However, these may be dislodged and lost during the initial collecting and preservation process and any subsequent handling and preservative changes that take place. This makes museum specimens poor sources for such small, mobile ectocommensals because they could be discarded during preservative changes. Special precautions are recommended for collecting and handling the host to ensure that most small ectocommensals are retained. If ectocommensals are the objective of any collecting endeavor, live specimens should be immediately placed in heavy (4-mil thickness) plastic bags, sealed securely and refrigerated. After the specimen becomes moribund it can be processed for ectocommensals and then preserved in the normal manner. Another

method would be to preserve the specimen in isolation upon collection and immediately examine or filter the fixative solution for commensals.

*Material Examined.*—*Stenocionops spinimana*: one specimen, lower Florida Keys south of American Shoals Lighthouse, 24°29.5'N, 81°30.0'W, 84 m, J. D. Thomas, 21 July 1978; three specimens, 28°12.0'N, 79°58.4'W to 28°10.2'N, 79°58.1'W, 97 m, otter trawl, collected by L. E. Scotto and L. J. Becker, Smithsonian Institution, Ft. Pierce Marine Station, 18 September 1974, IRCZM#89: 1755. *Rochinia crassa*: one specimen, 27°24.6'N, 79°58.1'W, 187 m recolonization tray, collected by Benthic Ecology Department, Harbor Branch Foundation, Inc., 18 June 1978, IRCZM#89: 3479.

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## GROWTH CURVES FOR CAPTIVE LOGGERHEAD TURTLES, *CARETTA CARETTA*, IN NORTH CAROLINA, USA

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There are no techniques presently available for aging individuals of any sea turtle species in the wild (Bustard, 1979; Márquez, 1972). Estimates of the age at maturity of loggerhead sea turtles, *Caretta caretta*, often are based on the growth rates of captive individuals and sizes of wild nesting females. However, no attempt has been made to specify growth equations in the majority of studies on captive loggerheads (Albert I, Prince of Monaco, 1898; Parker, 1926; 1929; Hildebrand and Hatsell, 1927; Caldwell et al., 1955; Caldwell, 1962; Hughes et al., 1967; Kaufmann, 1967; 1975; Stickney et al., 1973; Rebel, 1974; Witham and Futch, 1977; Schwartz, 1981). Uchida (1967) used graphical methods to fit 4.5 years of growth for two captive loggerheads to logistic equations and predicted that the turtles would reach mature sizes in 6 or 7 years. In this paper, we present growth equations for two loggerheads raised in captivity for 14 years. The conditions under which the turtles were kept and the results obtained differ substantially from those in Uchida's (1967) earlier study.

Turtles were hatched from eggs collected at Emerald Isle, North Carolina, in 1968 and incubated in styrofoam coolers. Two (designated as A and B) were retained to determine growth trajectories. From mid-March to late November, they were kept outdoors in concrete tanks 15 m long, 7.5 m wide and 0.75 m deep at Morehead City, North Carolina. Unfiltered water from Bogue Sound was