

## FIELD OBSERVATIONS OF *GASTERACANTHA CANCRIFORMIS* (ARANEAE, ARANEIDAE) IN A FLORIDA MANGROVE STAND

*Gasteracantha cancriformis* (L.), sometimes known as the spiny-bellied orbweaver, is a tropical-subtropical spider in the Americas (Levi and Levi 1968). The biology of this spider is discussed in limited detail by Comstock (1940), Gertsch (1979), and Kaston (1978). Muma (1971) presents detailed observations on the seasonal history, web construction, mating, egg case construction, and spiderling activity. However, most of Muma's (1971) behavioral observations were made in the laboratory, and he does not quantify web components. This note quantifies the spider's web components and describes some of its field behavior and ecology.

Observations were conducted in 1975 from June to Sept. at the west end of the Howard Franklin Bridge and Fla. Hwy 688, Pinellas Co., Florida, in a stand of mixed mangroves, *Avicennia germinans* (L.) L., and *Rhizophora mangle* L. Approximately 58 h were spent in observing 41 subadults and adult females. Web component nomenclature is based on Savory (1977).

The  $\bar{x} \pm SD$  ( $n$ ) of various web characteristics were as follows: web diameter, 29 cm  $\pm$  6 cm (19); web angle, 71.3°  $\pm$  11.5° (20); spirals, 37.4  $\pm$  7.5 (18); radii, 27.4  $\pm$  6.5 (20); frame threads, 2.8  $\pm$  0.9 (13); mooring threads, 3.8  $\pm$  1.0 (19); bridge length, 1.1 m  $\pm$  0.5 m (23); radii with flocculent silk tufts, 2.9  $\pm$  1.8 (26); split radii with flocculent silk tufts, 1.0  $\pm$  0.0 (3); frame thread with reinforced silk layers, 2.2  $\pm$  0.6 (11); and mooring thread with reinforced silk layers, 2.0  $\pm$  0.0 (2). Muma (1971) reported 20 to 30 radii which agrees with my findings. He reported also 10 to 30 spirals which is slightly less than what I observed. Levi and Levi (1968) showed flocculent silk tufts on the spiral and radii. Neither Comstock (1940), Muma (1971), nor I found these tufts on spirals. These tufts, or silken adornments, are probably protective devices that warn birds or large insects of a web's presence (Ewer 1972; Eisner and Nowicki 1983).

Muma (1971) reported that webs are constructed at an angle perpendicular to the ground, which I noted also. Females occupied the acute side of the incline and were positioned at the hub so that their black ventral surface faced up and their colored dorsal surface faced down. This may have been a counter-shading device or a thermoregulatory response.

On three separate occasions all spiders dismantled their webs just before or during rain, usually leaving from half of the web to only the bridge. This response to rain is similar to that of *Nephila maculata* (Fab.) (Robinson and Robinson 1973). When dismantling the web, *C. cancriformis* collected the silk and pressed it to her mouth, where she rolled it into a lump. The silk color changed from white to brown. Afterwards, the brownish lump was placed onto a part of the old web, on vegetation, or dropped. This color change suggests that rather than simply removing moisture from the silk, the spider may have extracted nutrients before discarding the silk.

Prey items included three mosquitoes (Culicidae), a horsefly (Tabanidae), a moth (Lepidoptera), two love bugs (Bibionidae), a small unidentified spider, an antlion (Myrmeleontidae), three honey bees (Apidae), and a fly (Muscidae). One female was observed drinking water after a rain storm by stroking her ventral abdomen with her left fourth leg and pressing the leg to her mouth; she did this

twice. One spider ate the pollen from the corbiculla of a bee's leg. Juvenile orb-weaving spiders eat pollen (Smith and Mommsen 1984), but this is the first account of an adult spider eating pollen.

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