

PELAGIC CAPTURE OF YOUNG ROUGH TRIGGERFISH IN THE CARIBBEAN¹

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ABSTRACT: *The pelagic capture and subsequent behavior of two young individuals of the rough triggerfish (Canthidermis maculatus) from the Caribbean Sea is described and discussed.*

THE ROUGH TRIGGERFISH, *Canthidermis maculatus* (Bloch), ranges from New Jersey to Argentina in the western Atlantic, and also occurs in the eastern Pacific and Indo-Pacific (Moore, 1967). Because it is an offshore species, the rough triggerfish is rarely encountered and thus little is known of its life history and general ecology. I report here on the pelagic capture of several young rough triggerfish and on subsequent observations of their behavior in captivity.

During late February of 1974, two young specimens of *C. maculatus* were taken at midday near the surface in a neuston net towed through the open waters of the Caribbean at approximately 78°W, 14°N. The depth in this area exceeds 3,000 m, and the nearest shallow reef areas are over 200 km away. The two individuals were recovered from the net alive and without apparent damage. The larger of the pair was about 30 mm SL, the other slightly smaller. Identification was based on the description in Moore's (1967) review of the family. The fish were placed in a 15 gal aquarium below decks and observed for about 3 wk.

The coloration of the fish at the time of capture (Fig. 1) differed in several respects from Moore's (1967) description. These discrepancies are probably due to the fact that he examined preserved material only, and may be summarized as follows: (1) the ground color was a light blue-to-violet rather than the grey-to-brown described by Moore; (2) the axillae were white; (3) two prominent white saddles were present along the dorsal midline, one just anterior to the trigger and one between the trigger and the second dorsal fin; and (4) the dorsal, anal, and caudal fin membranes were light at the base and black along the outer margins.

The addition of *Sargassum* to the aquarium a few days after the fish were captured appeared to precipitate an adaptive color change in the larger individual. The ground color darkened considerably while the soft dorsal and anal fins took on an amber hue, punctuated by a series of large white spots. Breder (1969) has commented on the possible adaptive function of a general darkening in pelagic species which freely associate with drifting objects. The smaller individual did not respond in this manner, although the black margins of the median fins lightened considerably.

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Fig. 1. Young rough triggerfish, *Canthidermis maculatus*, shown in a pan of water several minutes after removal from neuston net.

The fish were observed at first to spend most of their time swimming slowly about the tank just below the surface. However, the *Sargassum* became the favored habitat immediately upon its addition to the tank. The fish were frequently seen to forage in the algae and to eat the small shrimp found there. They were also regularly fed bits of raw conch (*Strombus gigas*). Both individuals were generally aggressive, and quickly attacked (and, in one case, killed) small filefish (*Monacanthus sp.*) which were occasionally trapped with *Sargassum* placed in the aquarium. The pair showed no signs of aggressiveness towards each other, however.

These observations suggest that rough triggerfish may lead a planktonic existence during the early part of their lives, inhabiting the upper few cm of the water column. Balistids are not adapted for sustained high-speed swimming, and individuals in this size range must be nearly entirely at the mercy of winds and currents. They may opportunistically associate for a time with *Sargassum* or other floating objects encountered, and possibly become somewhat territorial at such times. These suggestions are supported by the work of Dooley (1972), who concluded that although *C. maculatus* was occasionally found associated with *Sargassum*, it was not a regular member of the *Sargassum* community. Drifting objects could serve as an important source of food organisms as well as providing a measure of protection from larger predators (Magnuson and Gooding, 1971). Several other balistids are known to commonly form such association at certain stages of the life cycle (Clarke, 1950; Breder, 1969, Dooley, 1972). Grant Gilmore (personal communication) has reported that a number of larger specimens (60-80 mm) of *C. maculatus* were recovered from a celery crate found drifting in the Gulf Stream about 12-15 miles off southeastern Florida.

Although 30 min neuston tows were made thrice daily (at 0700, 1200, 1900 hours) as we traversed the Caribbean between Puerto Rico, Venezuela, Curacao, Honduras, Cozumel, and Miami, no other specimens of *C. maculatus* were captured. It is possible that the two individuals were taken independently during the single 30 min tow. However, in view of the single capture and the subsequent behavior of the fish, it seems more likely that they were closely associated prior to capture and taken simultaneously. No *Sargassum* or other floating objects were collected in the net with the fish, indicating that they were not associated with such material at the time of capture.

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