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S.G. Tolley  
*University of South Florida*

E.B. Peebles  
*University of South Florida*

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## OCCURRENCE OF *Gunterichthys longipenis* (OSTEICHTHYS: BYTHITIDAE) IN A SOUTHWEST FLORIDA ESTUARY

*Gunterichthys longipenis* is a poorly known member of the Bythitidae whose collection in association with disturbed weather has been well documented (Dawson, 1966, 1971). This species has been previously reported to range from 7½ Fathom Reef, near Padre Island, Texas, through the northern Gulf of Mexico, east to Panacea, Florida (Dawson, 1966, 1971; Wagner, 1972; Moore, 1975). Although not considered a rare species, its conspicuous absence in most northern Gulf of Mexico collections is presumably due to its burrowing or burrow-inhabiting nature (Dawson, 1966, 1971).

Two juvenile gold brotulas (*Gunterichthys longipenis*) were collected in Rookery Bay, near Naples, Florida during the summer of 1985. The specimens measured 9.6 and 13.0 mm standard length and represent two of the smallest individuals of *Gunterichthys* taken to date. Additionally, their collection in southwest Florida waters greatly extends the range of this species in the eastern Gulf of Mexico.

### METHODS

The specimens were collected during a larval fish survey of the Rookery Bay area, conducted from May through September 1985. Sampling gear consisted of 0.5 m diameter, 505 µm mesh, conical plankton nets, towed both at the surface and just above the bottom. Tows were made in triplicate at each depth and sampling was conducted at night in an attempt to reduce the incidence of net avoidance. Specimens were fixed in 4% buffered formalin and subsequently

preserved in alcohol. Meristic values and measurements were obtained utilizing a dissecting stereomicroscope equipped with an ocular micrometer.

### RESULTS

A young *Gunterichthys longipenis* was collected at the surface on 25 July 1985. Salinities at the collection site ranged from 0.8 ppt at the surface to 1.5 ppt at the bottom (2 m). This was in sharp contrast to salinities measured during the previous three weeks' sampling which averaged 31.0 and 31.9 ppt at the surface and bottom, respectively. This drastic reduction in salinity was a direct result of the passage of tropical storm Bob through the area on 23 July 1985, during which time Rookery Bay received 16 inches of rain in a 24 h period (K. Gyorkos, pers. comm.). A second, larger specimen was collected at the same station on 20 September 1985.

These fish measured 9.6 - 13.0 mm standard length and 11.6 - 16.2 mm total length, and resembled the adult in having minute eyes covered with skin, ventral fins consisting of a single ray each, and a free caudal fin. Meristic values for the small and large specimens, respectively, follow: dorsal fin rays 65 and 64; anal fin rays 53 and 47; principal caudal rays 15 and 14; and right pectoral fin rays 18 and 18.

Pigmentation in the preserved specimens was characterized by chromatophores scattered laterally along the length of the body but absent dorsally and ventrally (Fig. 1). In the smaller specimen pigmentation occurred both above and below the mid-lateral line, while in the larger specimen it was restricted to the area above the mid-lateral line. The head was pigmented dorsally with a median group of chromatophores, and laterally with a

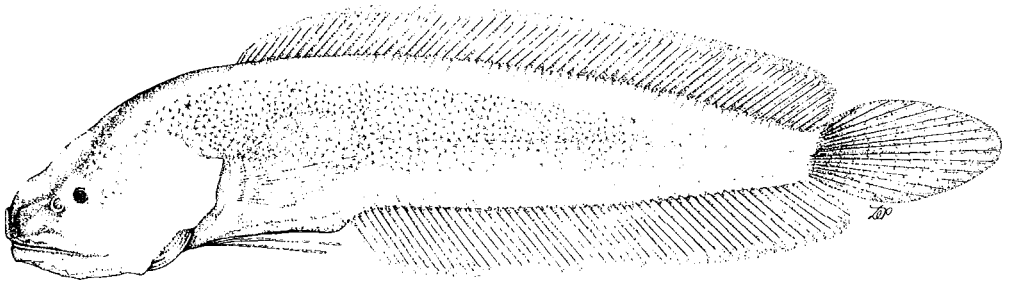


Fig. 1. Juvenile *Gunterichthys longipenis* measuring 9.6 mm SL.

patch of chromatophores posterior to each eye. No pigmentation was noted on the fins.

### DISCUSSION

The collection of *Gunterichthys* in connection with disturbed weather led Rudloe (1977) to refer to the species as the "hurricane fish." Dawson (1966) proposed that an inability to tolerate rapid reductions in salinity might be one force responsible for driving *Gunterichthys longipenis* out of its preferred habitat during periods of inclement weather. In addition, he suggested that low temperatures, and high winds and tides might also be responsible (Dawson, 1971). The individual collected near the surface in the present study was found in association with all of the above factors, with the exception of decreased temperature. While it is unclear which of these factors, or combination of factors, was of primary importance, salinity changes of the magnitude noted here would place a heavy metabolic load on nearly any estuarine organism. Within 36 h of the passing of tropical storm Bob, salinities just above the sediments, in which *Gunterichthys* presumably lives, had decreased 30 ppt from the mean

value for the previous three weeks' sampling. Although it is possible that the second specimen taken was collected within the water column, the presence of sediments in the sample indicates that the individual was more likely captured as the net contacted and disturbed the substrate.

*Gunterichthys* is a viviparous species and the smallest specimens examined previously, measuring 14.7 - 15.2 mm SL, were obtained from a female which gave birth after being placed in an aquarium (Dawson, 1971). The smallest specimen collected from Rookery Bay is approximately 5 mm smaller than these new born individuals.

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- S.G. Tolley and E.B. Peebles, *Department of Marine Science, University of South Florida, 140 7th Ave. South, St. Petersburg, Florida 33701.*