# NOTES

## Two Juvenile Pointed-tailed Ocean Sunfish, *Masturus lanceolatus*, from Hawaiian Waters

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The pointed-tailed ocean sunfish, *Masturus lanceolatus* (Liénard), is one of the "rare" marine fishes although it has been recorded from the tropical and subtropical areas of all oceans. In Gudger's review (1937*b*) of the natural history and distribution of the species, he reported only 59 authenticated records of the fish in the hundred years after its discovery in 1836. Strangely enough, of these 59 individuals there were 28 young and 31 adults, with no examples between the largest small specimen (60 mm. or 2.4 inches, standard length) and the smallest large specimen (30.5 inches, total length). Brimley (1939) has supplied records of five adult fish, ranging in size from 28 to 83 inches, that were not included in Gudger's report; four of these fish were from North Carolina waters, the fifth from Florida.

This wide gap between larval fish and adults was partially filled when three 6-inch juvenile fish were obtained from the stomach of a dolphin, *Coryphaena hippurus* L., taken in Florida waters (Gudger, 1938). Kuronuma (1940) described a juvenile *M. lanceolatus*, taken in a gill net in Japanese waters, which was 145 mm. in length from snout to caudal base and 259 mm. from snout to end of caudal fin. This interesting specimen differed from any previously described in that the caudal lobes was extended as a thin filament equal to approximately half the total body length.

Recently, Fitch (1950) reported that *M. lanceolatus* is found quite commonly in the stomachs of yellowfin tuna taken in Hawaiian waters, nearly a hundred specimens varying in size from ¼ inch to 2 inches having been obtained from this source. The only previous record of the species for Hawaiian waters is that of an adult fish, 37.3 inches in length, obtained from the Honolulu fish market in 1919 (Fowler, 1928).

The author has been unable to find in the literature any reports, except that of Kuronuma (1940), which describe or figure the caudal fin of *M. lanceolatus* as having more than a short lobe-like extension which may be pointed in the very young but in the adults is usually frayed or mutilated. From this characteristic shape of the caudal fin the fish has derived its scientific name, *Masturus lanceolatus* [Gr., *mastos*, breast or nipple; Gr., *oura*, tail; L., *lanceolatus*, a little lance = the nipple-tailed, lance-tailed fish (Gudger, 1937*a*)].

On April 11, 1950, during long-line fishing for tuna by the Fish and Wildlife Service research vessel *Hugh M. Smith*, a dolphin (1,100 mm. fork length) was taken just west of the island of Hawaii at 19° 30′ N. Lat.–156° 05′ W. Long. In the dolphin's stomach were two 5-inch *M. lanceolatus*, one in good condition, the other with a gash on each side. Both specimens (in alcohol) are generally similar in coloration to the 6-inch fish described by Gudger (1938). They are dark gray dorsally, shading into milky-white on the lower two-thirds of the body. They have the typical gray spotting below the eyes and pectoral fins and posteriorly above the anal fin.

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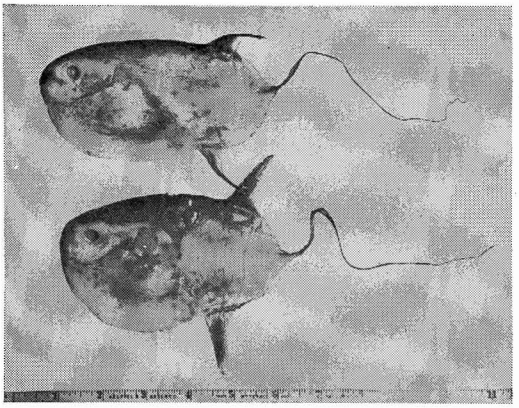

FIG. 1. Two juvenile *Masturus lanceolatus* taken from the stomach of a dolphin captured in Hawaiian waters. April 11, 1950.

These fish differ in one important respect, however, from any previously collected. Each has the caudal lobe continued as a whip-like structure longer than the body of the fish (Fig. 1). Except for the proximal 2 or 3 centimeters, this caudal extension is very fragile, almost paper-thin, and is frayed toward the tip. These may be the first observed specimens—at least among the post-larvae, juveniles, and adults—to show the true "normal" or unmutilated nature of the caudal fin. In view of the delicate structure of this appendage it is easily seen why the appendage is usually greatly reduced or missing in juvenile and adult specimens.

Measurements of the two fish, fin ray counts, etc., are given in the accompanying table:

## REFERENCES


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TABLE 1

MEASUREMENTS AND FIN-RAY COUNTS OF TWO JUVENILE POINTED-TAILED OCEAN SUNFISH (LENGTH AND DEPTH IN MILLIMETERS)

| SPECIMEN | LENGTH TO | | | DEPTH | | | FIN-RAY COUNT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Base C | Edge C | Tip C | Behind eye | Before D & A | Over D & A | P | D | C | A | D+C+A |
| Good condition | 111.9 | 135.0 | 300 | 59.8 | 63.6 | 121 | 10 | 20 (19?) | 5+6+8 | 19 (18?) | 58 |
| Gashes in both sides | 107.2 | 129.0 | 317 | 68.2 | 68.6 | 135 | 10 | 19 (18?) | 5+6+7 | 18 | 55 |