

First record of the batfish, *Halieutaea indica* (Actinopterygii: Lophiiformes: Ogcocephalidae), from the Red Sea

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Abstract

The Indian handfish or batfish, *Halieutaea indica* Annandale et Jenkins, 1910, is recorded for the first time from the Red Sea. This report constitutes also the first record of the family Ogcocephalidae from this region.

Keywords

batfish, *Halieutaea indica*, handfish, Red Sea

Introduction

The batfishes (Ogcocephalidae) are benthic marine fish species found in tropical and sub-tropical regions. They are found on soft bottoms of the continental slope, most species between 200 and 1000 m depth, while a few species live in shallower waters among rocks or reefs (Bradbury 2003). Their diet includes small snails, small clams and scallops, a variety of worms and small crustaceans, and occasionally small fishes. As far as we know, eggs, larvae, and postlarvae are all pelagic, the postlarvae transparent, globular in shape, sometimes reaching 25 to 30 mm, metamorphosing upon settling to the bottom (Bradbury 2003). Nelson et al. (2016) estimated 78 species in ten genera, but later Prokofiev (2019 and 2020) added another two species. Fricke et al. (2021a) counted 90 valid species in ten genera. The genus *Halieutaea* Valenciennes, 1837, round batfish or handfishes include eleven valid species with a wide Indo–west Pacific distribution from South Africa east to the Hawaiian Islands, north to southern Japan, south to northern Australia (Prokofiev 2020; Fricke et al. 2021b). It was characterized by Bradbury (1967) as hav-

ing, among other characters, the disk very flat and rounded, isolated lateral-line organs on ventral surface of tail present, teeth absent from palate, frontal bones forming a groove, but absence of small scales on ventral surface of tail, pupillary opercula, or bucklers.

While sorting old material from the Hebrew University Fish Collection, we were surprised to find a specimen of Batfish belonging to the family of Ogcocephalidae that was collected in February 1958 in the southern Red Sea. Consequently, it was identified as the Indian handfish, *Halieutaea indica* Annandale et Jenkins, 1910. This report constitutes the first record of this species and family in the Red Sea. The specimen was deposited in the Fish Collection of the Hebrew University (HUJ) and received the catalogue number HUI 10625.

Materials and methods

Measurements and counts follow Hubbs and Lagler (1947). The vertebrae were counted using an X-ray. The classification follows Fricke et al. (2021b); family

authorship follows Van der Laan et al. (2014). Abbreviations used: HJ = The Hebrew University of Jerusalem, Israel; MNHN = Muséum national d'histoire naturelle, Paris, France; SMNS = Staatliches Museum für Naturkunde in Stuttgart. SL = standard length.

Comparative material. *Halieutaea fumosa*: SMNS 24740 (1, 68 mm SL), Taiwan, Kueishan Island. *Halieutaea indica*: MNHN 1986-0004 (1, 82 mm SL), 27 Feb. 1973, depth 445–455 m, Madagascar, 23°36'0"S, 043°31'1.2"E; MNHN 1986-0005 (1, 85 mm SL), 2 Feb. 1973, depth 445–455 m, Madagascar, 23°36'0"S, 043°31'1.2"E; MNHN 1986-0104 (1, 82 mm SL), 4 Mar. 1973, depth 70–74 m, Madagascar, 25°4'1.2"S, 047°6'3.6"E. *Halieutaea stellata*: SMNS 23752 (1), Loyalty Islands, Lifou; SMNS 24623 (1, 135 mm SL), Taiwan, Kueishan Island; SMNS 25863 (2), China; SMNS 25886 (1), China.

Results

Family Ogcocephalidae Gill, 1893

- Halieutaea indica* Annandale et Jenkins, 1910 (their figs. 1, 2, and 3)
Halieutaea indica Annandale et Jenkins, 1910: 19, pl. 2 (fig. 4) (Bay of Bengal, off Orissa coast, India).
Lophie faujas Lacepède, 1798: 318, pl. 11 (figs. 2–3) (no locality; appeared as vernacular name only; not available, nomen nudum).
Lophius muricatus Shaw, 1804: 382, pl. 162 (no locality; based on the “*Lophie faujas*” of Lacepède 1798; not treated as valid after 1900).
Astrocanthus stellatus Swainson, 1839: 331, fig. 108 (no locality stated; based on the “*Lophie faujas*” of Lacepède, 1798; preoccupied by *Lophius stellatus* Vahl, 1797 when both are in *Halieutaea*).
Halieutaea sinica Tchang et Chang, 1964: 156, pl. 1 (figs. 1–3) (Swamei, Guangdong Province, China).
Halieutea spicata Smith, 1965: 39, pl. 11 (fig. A) (Isipingo, KwaZulu-Natal, South Africa, southwestern Indian Ocean).

Material. HJ 10625, 1 specimen, 77.2 mm SL, Eritrea, Southern Red Sea, Coll. O. Oren, Feb. 1958,

Description of HJ 10625. Head and body round and depressed, width subequal to length. Upper surface and tail densely covered with broad-base tubercle spines, most of them bicuspid or tricuspid. Ventral surface sparsely covered with minute spinules. Tail round in cross section, its length four times in SL. Mouth with small fine teeth, its width 4.7 in SL. Eyes in dorsal position, their diameter 10.9 times in SL. Interorbital slightly depressed, 6.3 times in SL. Small dorsal fin in posterior position with four rays. Pectoral fins with shape of “elbow” with ten rays well distanced from each other, their length 3.1 times in SL. Prepectoral length 1.5 times in SL. Ventral fins with a single spine and four rays, its length 4.2 times in SL. Preventral distance 2.6 times in SL. 22 vertebrae.

Color. Dorsal surface grayish-brown, spines lighter in color, ventral surface light grayish-beige, pectoral and ventral fins brown.

Table 1. Measurements and counts of *Halieutaea indica* (HJ 10625) from Eritrea, southern Red Sea.

Character	Measurement [mm]	Count
Total length	90.1	
Standard length	77.2	
Body width	55.3	
Mouth width	16.3	
Interorbital	12.1	
Distance between gill openings	15.9	
Predorsal length	57.2	
Prepectoral length	50.8	
Prepelvic length	29.8	
Snout to gill opening	46.6	
Pectoral-fin length	25.6	
Pelvic-fin length	18.2	
Caudal-fin length	20.0	
Distance between pectoral-fin bases	18.8	
Distance between pelvic-fin bases	9.0	
Dorsal fin		4
Anal fin		4
Pectoral fin		12
Pelvic fin		5
Caudal fin		7

Discussion

The characters of the Red Sea ogcocephalid specimen well agree with those of *Halieutaea indica* (see Table. 1).

Halieutaea indica was originally described by Annandale and Jenkins (1910: 19, pl. 2 (fig. 4), based on 9 syntypes from the Bay of Bengal, off Orissa coast, India, northeastern Indian Ocean. The species is distinguished from its congeners by having the following combination of characters: broad-based, thorn-like spines on dorsal surface of disc long, closely-spaced, nearly uniform in size; those on tail as long as on disc; underside of disc sparsely covered by small bucklers (broad-based thorns); tooth patches on ceratobranchials-5 with long and pointed inner posterior extension; dorsal surface of disc with irregular patches of pigment or without pattern; pectoral fin unpigmented (Prokofiev 2020).

This taxon was first described and illustrated as “*La Lophie Faujas*” by Lacepède (1798: 318, pl. 11, figs. 2–3), without a stated locality. The holotype is still extant (MNHN A.4542), but the name is not available, as it was based on a vernacular name only. The first Latinization was the description of *Lophius muricatus* by Shaw (1804: 382, pl. 162); this name is treated as a nomen oblitum, as it was not treated as valid after 1900, and its priority is reversed in favor of *Halieutaea indica* Annandale et Jenkins, 1910 (which is here declared a nomen protectum). The subsequent description of *Astrocanthus stellatus* by Swainson (1839: 331, fig. 108) is a secondary homonym and preoccupied by *Lophius stellatus* Vahl, 1797 when both are in *Halieutaea*.

The batfishes (Ogcocephalidae) are marine fish species found in tropical and sub-tropical regions. Nelson et al. (2016) enumerated 78 species in ten genera, but later Prokofiev (2019 and 2020) added another two species. The family Ogcocephalidae was not known

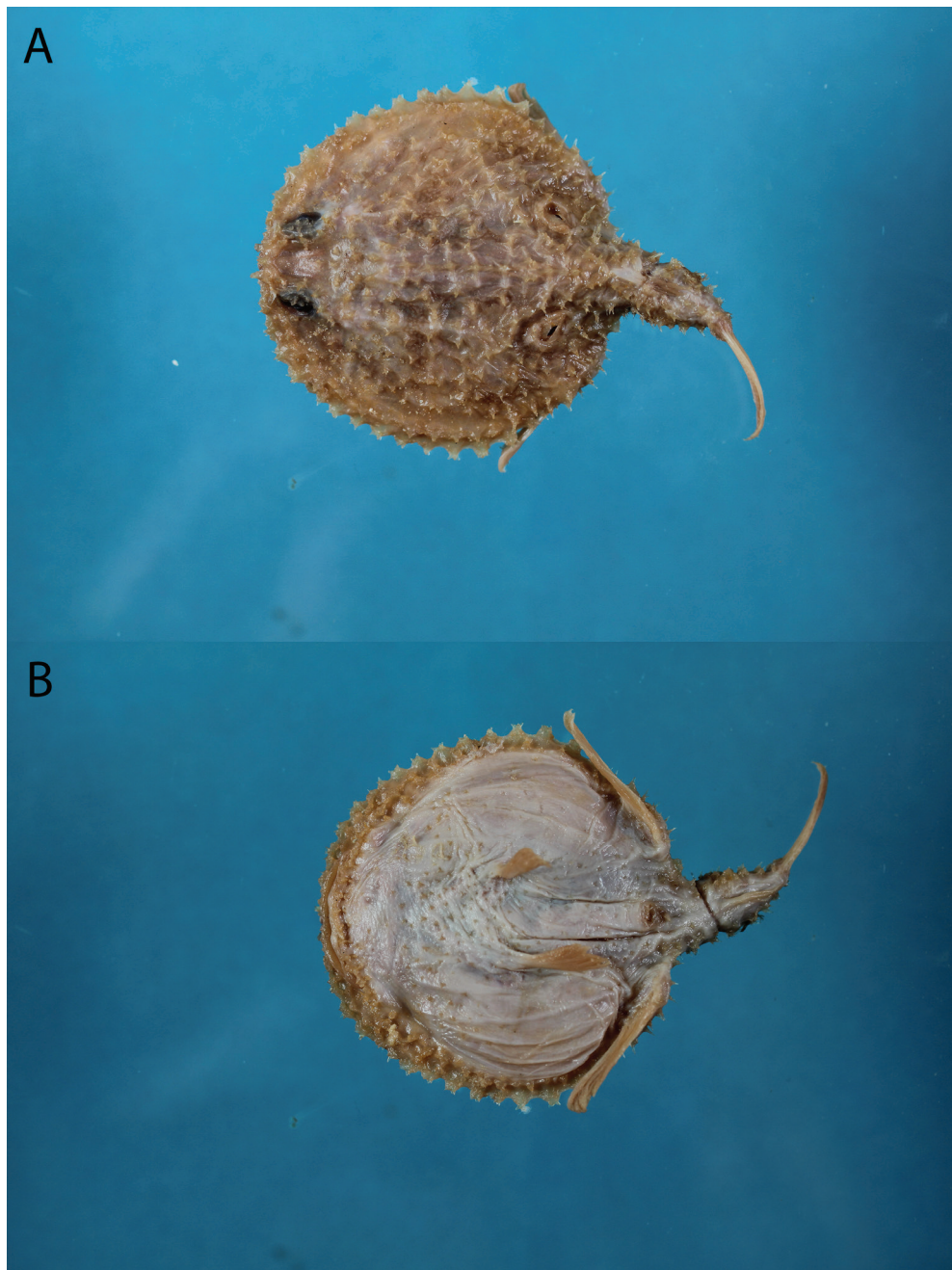


Figure 1. *Halieutaea indica* HUI 10625, 77.2 mm SL, Eritrea, southern Red Sea. (A) dorsal view, (B) ventral view (photograph: D. Golani).

hitherto from the Red Sea. The genus *Halieutaea* Valenciennes, 1837, round batfish or handfishes include eleven valid species with wide Indo–Pacific distribution from south Africa to Japan, Hawaii, and Australia (Prokofiev 2020).

Halieutaea indica has a wide Indo–west Pacific distribution from the western Indian Ocean, South Africa, Seychelles (Smith 1965), and recently recorded from the Gulf of Oman (Owfi et al. 2021) to northern Australia, China (Tchang and Chang 1964) and Japan (Kailola 1987; Kuitert and Tonzuka 2001) (Fig. 3). *Halieutaea indica* is a demersal species mostly found on muddy

substrate to depths of 500 m. It “walks” on the sea floor using its “elbow-shape” pectoral fins. The IUCN Red List designated this species to be in the category of “Least Concern”.

The family Ogcocephalidae was not known hitherto from the Red Sea. *Halieutaea indica* is apparently very rare in the Red Sea, since in the past six decades no other specimen has been collected. Alternatively, this can also be explained by its occupying a niche that has been rarely sampled. This is an interesting addition to the Red Sea ichthyofauna; this finding illustrates that the fish diversity of the southern Red Sea is still poorly known.

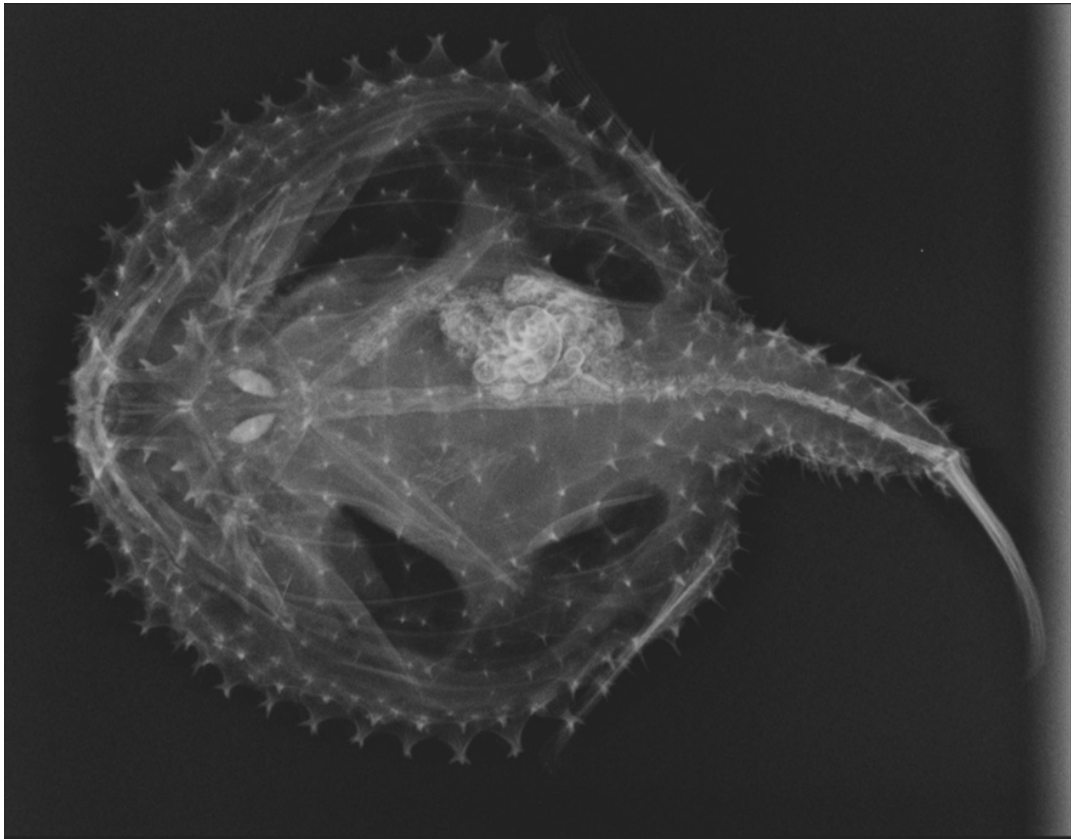


Figure 2. X-ray radiograph of *Halieutaea indica*, HUI 10625, 77.2 mm, Eritrea, southern Red Sea. Dorsal view (photograph: I. Aizenberg).

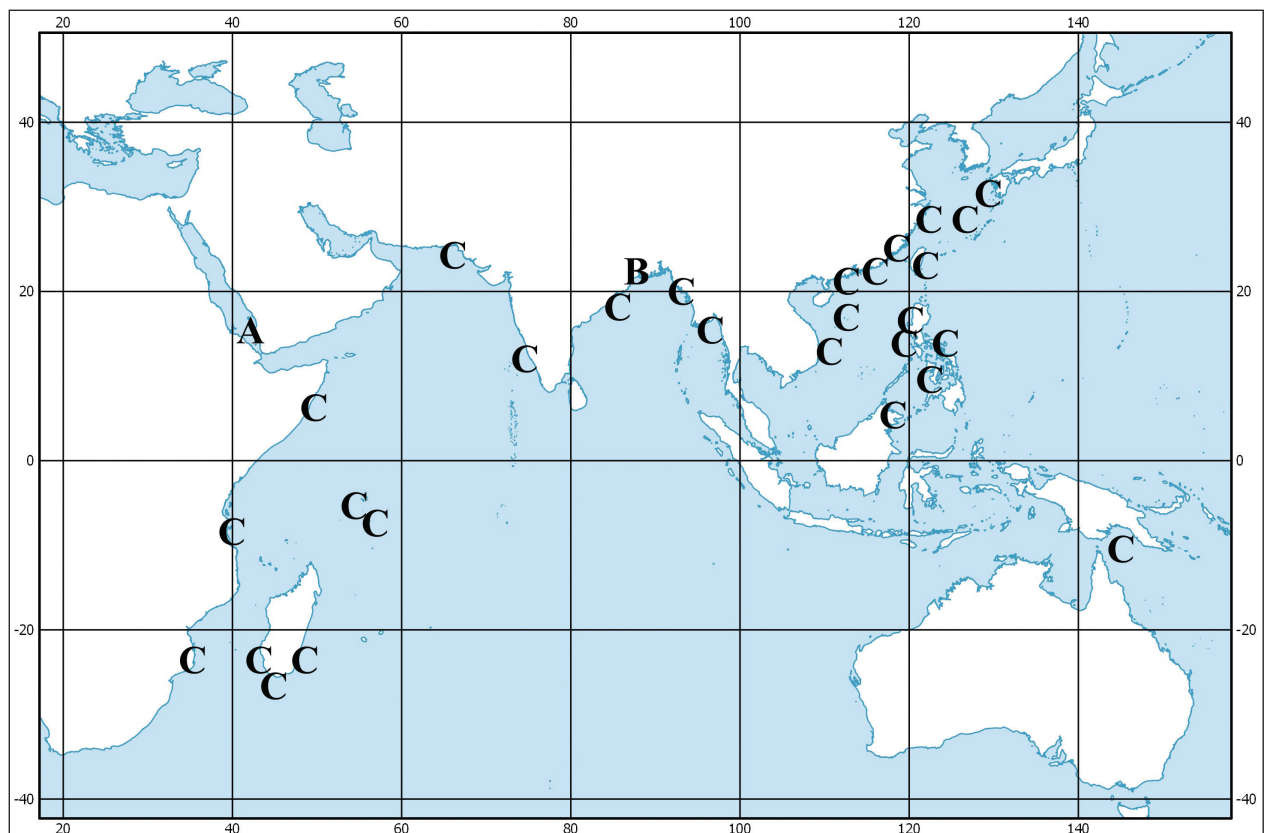


Figure 3. Geographical distribution of *Halieutaea indica*. (A) New record from southern Red Sea. (B) Type locality. (C) Other records based on literature and material in collections.

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