

Short Communication

Occurrence of *Pempheris schwenkii* and *P. mangula* (Teleostei: Pempheridae) from marine waters of Gopalpur-on Sea, Odisha coast, India

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Abstract: The present study reports the first record of two marine fish species namely the black-stripe sweeper *Pempheris schwenkii* Bleeker, 1855 and the black-edge sweeper *Pempheris mangula* Cuvier, 1829, of the family Pempheridae from Gopalpur-on Sea, Odisha coast, India. Although, we find a number of fish samples of both the species, still there is no evidence that both the species have established a breeding population in marine waters of Gopalpur coast. Therefore, at present both the species must be regarded as casual rather than native species.

Keywords: Pempheridae, First record, Black-edged sweeper, Black-stripe sweeper.

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Introduction

The members of the family Pempheridae commonly called as sweepers or Vanicora sweeper in India, are small to medium size (usually <200mm standard length) perciform fishes, found in the Western Atlantic Ocean and Indo-Pacific region. The family Pempheridae comprises 48 nominal species, out of which 30 are valid species, divide in two genera: *Pemphris* Cuvier, 1829 with 44 nominal species of which 26 are valid, and *Parapriacanthus* Steindachner, 1870 with 4 species. However, considerable confusions are still exist regarding the classification of *Pempheris* species. Recently members of this family have been transferred to the order Acropomatiformes (Fricke et al. 2020). In Indian waters, the family Pempheridae is represented by five species viz. *Pempheris flavicycla*, *P. malabarica*, *P. mangula*, *P. sarayu*, and *P. schwenkii* (Randall & Bineesh 2014). The present report of *P. schwenkii* and *P. mangula* are the first record from Gopalpur-on Sea, Odisha coast, India.

Materials and Methods

One specimen of each species was collected on August 2016 during observations of fish landings at Gopalpur fish landing center, Odisha, on the east coast of India. The fishes were captured by trawl boats that operate in shallow waters of Gopalpur-on Sea, Odisha coast in the north-eastern Bay of Bengal. The species were identified following the various taxonomic keys (Randall & Beineesh 2014) and subsequently reconfirmed by the species nomenclature outlined in Catalog of Fishes (<http://research.calacademy.org/ichthyology>).

Further, the specimens were formalin fixed, vouchered and preserved for long term storage. Measurements of formalin-preserved specimens were taken following Randall & Ida (2014).

Results

Systematics:

Order Acropomatiformes
Family Pempheridae



Fig.1. (A) *Pempheris schwenkii*, voucher Q168-10082016, 151mm TL and (B) *P. mangula*, voucher Q11-13072016, 174mm.

Genus *Pempheris* Cuvier, 1829

Species *Pempheris schwenkii* Bleeker, 1855

Pempheris mangula Cuvier, 1829

Description of both the specimens: In *P. schwenkii* (Fig. 1a) the body color is always variable often silvery with copper brown color scales. The outer third of the dorsal fin covered with a black spot. The presence of a board blackish band at the base of the anal fin is the characteristic feature of this species. The pectoral fins generally blue in color. The species have a moderately and compressed deep body. The snouts are generally short and eyes are comparatively larger than other species. Mouth strongly oblique with slightly protruding lower jaw. In comparison to this, *P. mangula* (Fig. 1b) has a silvery body color with a yellowish-brown spot on scales. The outer third of the dorsal fin has a black spot with the sub-

marginal dark reddish zone. The caudal fin mainly reddish in color and the pectoral fin having a large black spot towards the axes. The body moderately deep and compressed; dorsal part of the head smoothly convex; short snout; eye comparatively smaller than the other species of this genus. Mouth strongly oblique and the lower jaw slightly protruding when fully closed. The main morphometric and meristic characters of both the species are presented in Table 1. These data are in agreement with the data as earlier reported by several authors describing these species.

Discussion

The members of the genus *Pempheris* have a wide Indo-Pacific and Atlantic distribution from the Red Sea and the western Indian Ocean. These fishes

Table 1. Comparative morphometric and meristic parameters of *Pempheris schwenkii* and *P. mangula* (*Pored lateral line scale counts were compared with Koeda et al. (2014)).

Characters	<i>P. schwenkii</i>	Randall and Bineesh, 2014	<i>P. mangula</i>	Randall and Bineesh, 2014
Total length (TL) (mm)	151	-	174	-
Standard length (SL) (mm)	122	101	138	147
Morphometric measurements: % SL				
Fork length	116	-	116	-
Pre-anal length	56	-	38	34
Pre-dorsal length	41	-	41	27
Pre-pelvic length	38	2.6	38	25
Pre-pectoral length	30	-	28	-
Dorsal fin height	28	-	27	-
Pelvic fin length	13	2.05 of HL	16	12
Pectoral fin length	28	-	28	19
Anal fin height	13	-	20	-
Peduncle depth	9	-	10	6
Peduncle length	8	-	7	6.6
Caudal fin length	25	4.5	27	18
Body depth	42	2.45	45	31
Head length (HL)	31	3.3	31	21
Caudal height	16	-	27	-
Dorsal fin base	16	-	16	13
Anal fin base	48	-	51	36
Snout length, % of HL	11	5.1	10	21
Eye diameter	42	7.7	41	40
Pre-nasal length	19	-	21	-
Inter orbital width	29	-	29	26
Pre orbital length	26	-	24	-
Meristic counts				
Dorsal fin Rays	VI, 9	VI, 9	VI, 9	VI, 9
Pectoral fin Rays	17	17	17	17
Anal fin Rays	III, 41	III, 40	III, 40	III, 39
Caudal fin Rays	15	-	17	-
Pelvic fin Rays	I, 5	-	I, 5	-
Gill Rakers	26	26-28	28	27-30
Lateral line Scales	51	49-58	56	54-59
*Pored lateral line Scales	49 +49 (L+R)	44-53 (L) 45-53 (R)	55+54 (L+R)	49-59 (L) 49-60 (R)

mainly school in caves or cervices during the day and swim out to open water at night, where they primarily prey on zooplankton (Annese & Kingsford 2005; Sazima et al. 2005). *Pempheris schwenkii* was first reported from India, based on one specimen from the southeast coast of Tuticorin (Randall & Bineesh 2014). However, till date no further documentation about the species were recorded from India. While, *P. schwenkii* reported from different parts of the globe shows genotypic and phenotypic variations with that of species reported from India and species reported in this study (Randall & Bineesh 2014). On

the other hand, *P. mangula* was first reported from India, based on one specimen from Visakhapatnam coast (Randall & Bineesh 2014) after that no further documentation was recorded so far from Bay of Bengal. The documentation as a valid species of *P. mangula* is yet to be elucidated. Because, phenotypically, *P. mangula* could be considered as a valid species but genotypically, it forms a species complex with *P. rhomboidea* and *P. sarayu* showing a negligible genetic divergence (Randall & Bineesh 2014). However, a detailed study of Pempheridae fishes in the region could reveal more diversity and

clarify the status of the species of *Pempheris* reported from the region.

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یافته علمی کوتاه

حضور *Pempheris schwenkii* و *P. mangula* (ماهیان استخوانی عالی: رفتگر ماهیان دریایی) در آب‌های دریای گوپالپور، ساحل اودیشا، هند

تاپان کومار باریک، سوریانارایان سواين، بیجایالاکسمی ساهو، بیبارانی تریپاتی، اوشارانی آچاریا*

بخش تحصیلات تکمیلی جانورشناسی، دانشگاه برهامپور، برهامپور، اودیشا، هند.

چکیده: مطالعه حاضر گزارش نخستین صید دو گونه ماهی دریایی رفتگر ماهی لبه‌سیاه *Pempheris schwenkii* و رفتگر ماهی نوار سیاه *P. mangula* از خانواده رفتگر ماهیان دریایی از دریای گوپالپور، ساحل اودیشای هند است. علیرغم مشاهده تعدادی نمونه از هر دو گونه، هنوز هیچ مدرکی مبنی بر حضور جمعیت‌های زیادی هر دو گونه در آب‌های دریایی سواحل گوپالپور وجود ندارد. بنابراین، در حال حاضر هر دو گونه باید به جای گونه‌های بومی، به عنوان گونه‌های تصادفی در نظر گرفته شوند. **کلمات کلیدی:** سوف ماهی‌سانان، نخستین گزارش، رفتگر ماهی لبه‌سیاه، رفتگر ماهی نوار سیاه.