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On the occurrence of band fish, *Acanthocepola indica* (Day, 1988) (Perciformes: Cepolidae) in coastal waters of South West coast of Maharashtra, India

M. B. Shetkar, S. A. Mohite*, V. H. Nirmale and H. G. Shetye

Department of Fisheries Biology, College of Fisheries, (Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli), Ratnagiri – 415712, Maharashtra, India; E mail: sa_mohite@yahoo.co.in

Abstract

Band fishes also known as deep-sea snake fishes have not been reported from the waters of the Southwest coast of Konkan, Maharashtra, India. A specimen of this fish was collected from a multiday purse seiner, operated off the Southwest coast of India, and landed at Mirkarwada Fisheries harbour, Ratnagiri, Maharashtra in January 2024, for the first time. The fish was taxonomically identified as *Acanthocepola indica* (Day, 1888), belonging to Family Cepolidae based on its morphometric and meristic characteristics. The bright red fish had 97 dorsal; 85 anal; 20 Pectoral and 6 pelvic fin rays. The gill rakers in the anterior-most gill were 14+33; gill filaments were 96. The Total Length (TL) was 189 mm.

Keywords: *Acanthocepola indica,* Band Fish, Cepolidae, Deep-Sea Snake Fish

Introduction

The band fishes belonging to the family Cepolidae, comprise five genera with 66 species that are found widely in the tropical and subtropical seas throughout the world (Day, 1889; Smith, 1949; Shen, 1993; Heemstra, 1995; Froese & Pauly, 2017; Pradhan & Mahapatra, 2017). Their distribution is reported from the Indian Ocean, Arabian Sea, Mozambique, and South Africa to the Bay of Bengal (Anon, 2022). Of these, 45 are currently considered valid species (Eschmeyer & Fong, 2017). Members of this family are benthopelagic usually found in shallow waters in a variety of marine habitats, including muddy and fine-sandy areas; rarely found in coral reef areas (Pradhan & Mahapatra, 2017) depths ranging between 40 and 300m (Nakabo, 2002). There is numerous documentation, reports and studies carried out so far on the ichthyofaunal diversity of Maharashtra earlier, but none of them reports the occurrence of *Acanthocepola indica* in the Maharashtra waters. The occurrence of single specimens of these bandfish in the trawl catches along the Ratnagiri coast of Maharashtra was an unusual phenomenon as fish catch data is being collected every month from Mirkarwad fishing harbour of Ratnagiri and Bandfishes were not reported from this area during the data collection earlier.

Materials and Methods

A single specimen of bandfish (Figure 1) was collected in January 2024 from the Mirkarwada landing centre (16°59'48"N 73°16'48"E) at Ratnagiri coast of Maharashtra. The identification was done as per Smith-Vaniz (1986), Day (1889), Fischer and Bianchi (1984) and Froese & Pauly (2017). The fish was photographed using a Nikon Coolpix 4500 camera. All the morphological measurements of the fish have been taken by using Comet Vernier Calipers 125mm. Standard measurements (Table 1) were taken and recorded.

Since this fish was reported for the first time along the Ratnagiri coast, it was thought worthwhile to give a description and the morphometric measurements of the specimen. The specimen was brought to the laboratory for recording morphometric measurements and related aspects. The fish was preserved for further studies in the museum of the Department of Fisheries Biology, College of Fisheries, Ratnagiri, Maharashtra, India.

* *Author for correspondence*

Results

The fish was identified as *Acanthocepola indica* (Day, 1888) based on the morphometric characteristics. The body shape resembled a ribbon, being laterally compressed and gradually tapering towards the caudal fin, which seamlessly merged with the dorsal and anal fins. The head was short with a blunt snout and featured 6 branchiostegal rays. The eyes were large and positioned high on the head, while the mouth was large and oblique with a wide gape, with the maxilla extending to the posterior margin of the eye. Each jaw had a single row of slender, slightly curved canine teeth. Minute cycloid scales were present on the head and operculum. The origin of the dorsal fin was slightly behind the orbit and the middle of the pectoral fin. The body displayed a uniform pink colouration, with a black blotch on the anterior part of the dorsal fin (Figures 2, 3). Additionally, the measurements were compared with those reported by other authors (Table 2).

Discussion

A. indica is known to have a distribution spanning the Indo-West Pacific region, including India (Mahesh *et al.*, 2019; Pradhan & Mahapatra, 2018), Korea (Park *et al.*, 2008), Japan (Masuda *et al.*, 1984; Nakabo, 2002), China (Randall & Lim, 2000), Taiwan (Shen *et al.*, 1993), and Natal in South Africa (Smith-Vaniz, 1986; Heemstra, 1995). Joshi *et al.* (2014) reported the occurrence of deep-sea snakefish or bandfish, *A. limbata*, caught in trawl nets during regular fishing operations off the Ratnagiri coast. These researchers observed that these bright red fishes featured a dark blackish-red oblong blotch on the dorsal fin, situated between the 9th and 14th rays, covering just over half the length of the rays. The counts for the dorsal fin rays were 81 to 83; anal fin rays, 91-93; pectoral fin rays, 19; pelvic fin rays, 6; and caudal fin rays, 10. Additionally,

Table 1. Morphometric measurements of *A. indica* collected from Mirkarwada Fisheries harbour, Ratnagiri

Morphometric measurements recorded	Measurements (mm)
Standard length	175
Head length	26.04
Snout	5.36
Eye diameter (Same along both axes)	7.97
Eye (middle dark portion)	3.03
Maxillary length	12.80
Mandibular length	11
Depth of body at dorsal insertion	22.98
Length of dorsal	16.8
Depth of body at pectoral insertion	18.60
Length of pectoral	14.31
Snout to insertion pelvic	21.37
Length of pelvic	17.39
Depth of body at pelvic insertion	22.98
Length of anal	15.6
Snout to vent	28.71
Snout to the origin of the lateral line	46.31
Inter-orbital distance	5.86
Snout to origin of dorsal fin	23.24
Depth of body at anal insertion	23.65

Table 2. Comparison of meristic characters of *A. indica*

Particulars	Present study (2024)	Day (1888)	Smith-Vaniz (1986)	Nakabo (2002)	Park *et al.* (2008)	Mahesh *et al.* (2019)
Place of report	Ratnagiri India	Madras India	South Africa	Japan	Korea	Southwest coast India
Dorsal fin rays	85	90	82-89	85	88	83
Anal fin rays	97	90	91-102	100	101	93
Pectoral fin rays	20	-	-	-	17	19
Pelvic fin rays	6	-	-	-	1+5	1+5
Gill rakers	14+33	-	-	-	16+33	13+32
Gill filaments	96	-	-	-	-	100
Branchiostegal rays	6	6	-	-	6	6
Pre opercular spine	6	1+5	-	-		1+5

Figure 1. Specimen of *A. indica* collected from Mirkarwada landing centre, Ratnagiri, Maharashtra, India.

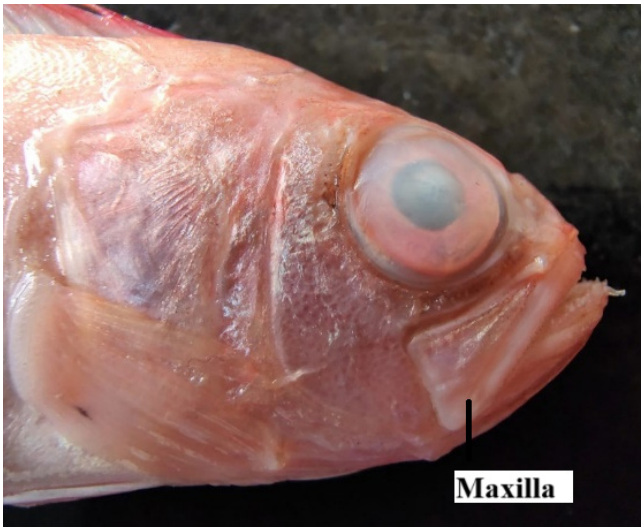

Figure 2. Shape of snout and maxillary bone in *A. indica.*

they noted that the gill rakers in the anteriormost gill were numbered between 52-55, while the gill filaments numbered 100.

The specimen of *A. indica* exhibited 97 dorsal fin rays, 85 anal fin rays, 20 pectoral fin rays, and 6 pelvic fin rays. *A. indica* shares similarities with *A. limbata*, as some of their morphological characteristics align, and their pigmentation in the adult stage is also comparable. However, the presence of a distinct black blotch on the anterior part of the dorsal fin, positioned between the 7th and 11th dorsal fin rays in *A. indica*, distinguishes it from *A. limbata*, which displays a dark red oblong blotch on the dorsal fin between the 9th and 14th dorsal fin rays.

Figure 3. Branchiostegal rays (Bch.R.) in *A. indica.*

The detailed morphometric measurements and meristic values validate the presence of *A. indica* on the southwest coast of India, adding to the ichthyofaunal diversity of coastal waters. These morphometric and meristic features of the specimen closely match the descriptions provided by Day (1888) and Smith-Vaniz (1986).

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References

Anon. 2022. Coastal fishes of the Western Indian Ocean Vol. 4. In: P.C. Heemstra, E. Heemstra,D.A. Ebert, W. Holleman and J.E. Randall (Eds.), *South African Institute for AquaticBiodiversity*, a National Research Facility of the National Research Foundation (NRF-SAIAB), 650 p.

Day, F. 1888. The fishes of India; Being a natural history of the fishes known to inhabit the seas and fresh waters of India, Burma, and Ceylon. *Fishes of India*, *Suppl.*, 779-816.

Day, F. 1989. *Fauna of British India fishes*, Taylor and Francis Ltd., London. 1889, **1**: 1-548

Eschmeyer, W. N. and Fong, J. D. 2017. Species by family/subfamily. http://researcharchive.calacademy.org/research/ichthyology/catalog/SpeciesByFamily.asp

Fischer, W. and Bianchi, G. 1984. FAO species identification sheets for fishery purposes: Western Indian Ocean (fishing area 51). Vol. 1. *Food and Agriculture Organization*, FAO Fisheries Department, Rome.

Froese, R. and Pauly, D. 2017. *FishBase*. World Wide Web electronic publication. http://www.fishbase.org

Heemstra, P.C. 1995. Additions and corrections for the 1995 impression. p. v-xv. In: M.M. Smithand P.C. Heemstra (Eds.) *Revised Edition of Smiths' Sea Fishes*. Springer, Berlin, Germany.

Joshi, V.P., Mohite, S.A. and Satam, S.B. 2014. On the occurrence of the deepsea snake fish, *Acanthocepola limbata* (Cuvier) (Pisces: Cepolidae) along Ratnagiri coast, Maharashtra, India. *Species,* **7**(17): 17-19

Mahesh, V., Asokan, P.K., Jeena, N.S., Vinod, K., Koya, K.P.S. and Zacharia, P.U. 2019. New distributional record of deep sea snake fish *Acanthocepola indica* (Day, 1888)from the Southwest Coast of India. *Thalassas: An International Journal of MarineSciences*, **35**: 561-565. https://doi.org/10.1007/s41208-019-00131-9

Masuda, H., Amaoka, K., Araga, C., Uyeno, T. and Yoshino, T. 1984. *The fishes of the Japanese archipelago*, vol 1. Tokai University Press, Tokyo

Nakabo, T. 2002. *Fishes of Japan with pictorial keys to the species*. English edition II. Japan:Tokai University Press, Japan.

Park, J-H., HwaRyu, J., Lee, J.M. and Kim, J.K. 2008. First record of a Bandfish, *Acanthocepola indica* (Cepolidae: Perciformes) from Korea. *Korean Journal of Ophthalmology,* **20**(3): 220-223.

Pradhan, A. and Mahapatra, B.K. 2018. The band fish *Acanthocepola indica* (Perciformes: Cepolidae) in the Northern Bay of Bengal, India. UNED Research Journal (ISSN: 1659- 441X), **10**(1): 127-130.

Randall, J.E., Lim, K.K.P. 2000. A checklist of the fishes of the South China Sea. *Raffles Bulletin of Zoology,* **8**: 569-667.

Shen, S.C., Shao, K.T., Chen, C.T., Chen, C.H., Lee, S.C. and Mok, H.K. 1993. *Fishes ofTaiwan*. Department of Zoology, National Taiwan University, Taipei.

Smith, J.L.B. 1949. *The sea fishes of Southern Africa*, Central News Agency, Ltd., Cape Town, South Africa.

Smith-Vaniz, W.F. 1986. Family cepolidae. In: M.M. Smith P.C. Heemstra (Eds). *Smith's sea fishes*. Springer-Verlag, Grahamstown (pp. 727-728). https://doi.org/10.1007/978-3-642-82858-4