



Rare occurrence of Red bandfish *Cepola macrophthalma* (Linnaeus, 1758) (Perciformes; Cepolidae) from the Indian seas

Rekha J. Nair* and P. M. Geetha

ICAR - Central Marine Fisheries Research Institute, Ernakulam North P.O, Cochin – 682 018, Kerala, India.

*Correspondence e-mail: rekhacmfri@gmail.com

Received: 21 Aug 2018 Accepted: 10 Jan 2019 Published: 15 Jan 2019

Short communication

Abstract

Family Cepolidae or bandfishes comprise of benthic or suprabenthic fishes of which only three species have so far been reported from India. Bandfish are an important part of the diet of many oceanic predators. During a routine fish collection, a cepolid fish of total length 348 mm was obtained in the discards of a deep sea shrimp trawler unit at Kalamukku. The fish was later identified as *Cepola macrophthalma*. Since the fish is from a new locality, details are given herewith.

Keywords: *Cepolids, rare occurrence, new reports*

Introduction

Family Cepolidae (Class Actinopterygii, Order Perciformes) or bandfishes as they are popularly called comprise of five genera and 23 species of small (to perhaps 700 mm total length), benthic or suprabenthic fishes that usually occur in moderately deep water (up to 400 m) (Nelson *et al.*, 2016). They are commonly found buried in sand and mud bottoms. Though they live in vertical burrows

they may also be found swimming in midwater or washed ashore after storms in the sea. They occur singly or in groups and feeds on small crustaceans and chaetognaths. Bandfish are an important part of the diets of many oceanic predators, especially john dories, but also other fish, common dolphins (Stergiou and Fourtouni, 1991). The red bandfish *Cepola macrophthalma* (Linnaeus, 1766) is distributed throughout the Mediterranean as well as Eastern Atlantic, north to the British Isles and south to northern Senegal (Tortonese, 1986) and in the Indo –West Pacific including New Zealand. In India, only three species of cepolids have so far been reported *Acanthocepola limbata*, (Manoj Kumar and Pavithran, 2011), *Owstonia simoterus* and *Owstonia weberi* (Venu, 2016). The juveniles and adults were earlier caught in a wide range of depths from less than 25 to 200 m, and the highest abundance was found at depths of about 100 m.

Material and methods

On August 20, 2005, a cepolid fish of total length 348 mm was obtained in the discards of a deep sea shrimp trawler unit at Kalamukku (Fig. 1). The fish was later identified and confirmed as *C. macrophthalma*. With the present specimen, the species diversity of Cepolids has gone upto four in Indian waters. Since the fish is from a new locality, details are given herewith. The fish has



Fig. 1. Map showing the collection locality been deposited in Marine Biodiversity Referral Museum of CMFRI (GB.31.31.2.3). A second specimen has not been obtained thence.

Results

Systematics

Order: Perciformes

Family: Cepolidae

Genus: *Cepola* Linnaeus, 1764

Cepola macrophthalmus (Linnaeus, 1758) (Fig. 2)

Synonym

Cepola macrophthalmus (Linnaeus, 1758)

Ophidion macrophthalmum Linnaeus, 1758: p. 259.

Description

Body elongated, ribbon like, tapering, with a continuous dorsal fin with no spine and 70 soft rays. First two rays of the dorsal



Fig. 2. *Cepola macrophthalmus* (Linnaeus, 1758)

Table 1. Meristic and morphometric characters of the present specimen in comparison with earlier work

Characters	Present specimen	Bauchot, 1987
Fin count		
Dorsal	70	67-70
Anal	60	59-61
Morphometric details (mm)		
Total length	348	*
Std length	321	*
Head length	51	*
Head width	35.21	*
Pre opercle	33.23	*
Upper jaw	18.85	*
Snout–Eye	8.59	*
Eye diameter	13.65	*
Body width	36.91	*
Post orbital	24.05	*
Dorsal fin length	17.57	*
Anal fin length	16.28	*
Caudal fin length	18.03	*
Pelvic fin length	18.14	*
Pectoral fin length	26.45	*
Dorsal finbase	289	*
Anal finbase	268	*
Caudal finbase	2.31	*
Pelvic finbase	4.6	*
Pectoral finbase	9.53	*
Pre dorsal	34.62	*
Prepelvic	45.58	*
Prepectoral	48.03	*
Pre anal	62.59	*

fin are unsegmented. Anal fin is also continuous with 60 soft rays, and no spines. Caudal fin with median rays longer and free at their tip. Dorsal inserted behind pelvic. Pectoral inserted lower in the body; pelvic fin inserted in front of pectoral. Head with a convex forehead; spinal armature seen on head and operculum; vomer and palatine toothless. Six branchiostegal rays present. Mouth turned upward, terminal. Teeth prominent, projecting outward from lower jaw. Eyes big. A spine seen on the upper outer corner of the operculum. Morphometric and meristic measurements are given in Table 1.

Colour: Body reddish with yellow colour also on fins. Eyes red in colour. Body colour lost when preserved in formalin.

Specimen: The present specimen is rarely encountered in the trawler landings, although samples of *A. limbata* and *O. weberi* have been encountered in the cod end discards of the deep sea shrimp trawlers. The description and meristic characters of the present specimen closely match the details given in the FAO sheets of the Red Sea and Mediterranean as well as the Western Pacific. The species differs from *A. limbata* and *O. weberi* in the dorsal fin ray and anal fin ray counts as well as by having a free caudal fin. The sample obtained was very fresh when collected. This points to the fact that it was collected near the shore and not from its locality. It could possibly be that the fish was introduced into the Indian waters through the ballast water of some merchant ships or liners as they entered the port at Cochin or it could be a pointer for such species lying unnoticed in the Indian seas. Most of these silent travellers do not survive the journey or in the new area, but occasionally some do and, if aggressive and fast reproducing, may become invasive – out-competing local flora or fauna. In new surroundings, an

introduced species may not have the same natural brakes, such as pathogens, grazers, predators or parasites, on its population number as in its native environment (Gland, 2009). The introduction of new species can therefore often expand unhindered and have large and detrimental consequences on the new host ecosystem, affecting the productivity of fisheries and aquaculture, as well as the economy and livelihoods of community dependent upon the invaded area's biodiversity.

Acknowledgements

The authors are grateful to the Director, ICAR-CMFRI for the facilities provided and to the Head, Marine Biodiversity and Demersal Fisheries Division for the facilities provided.

References

- Bauchot, M. L. 1987. Poissons osseux. In W. Fischer, M. L. Bauchot and M. Schneider (Eds.) *Fiches FAO d'identification pour les besoins de la pêche*. (Rev. 1). *Méditerranée et mer Noire. Zone de pêche* 37. Vol. II. Commission des Communautés Européennes and FAO, Rome. 891-1421p.
- Gland, 2009. *Silent Invasion – The spread of marine invasive species via ships ballast water*. Jessica Battle (Eds) WWF International, Gland, Switzerland.
- Linnaeus, C. 1766. *Systema naturae per regna tria naturae secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis*. Tomus I. Pars. I. Editio duodecima, reformata (12th edition). Stockholm: Laurentii Salvii. 532 pp.
- Manojkumar, P. P. and P. P. Pavithran. 2011. First record of bandfish, *Acanthocephala limbata* (Valenciennes, 1835) from Malabar region. *Mar. Fish. Infor. Serv. T & E Ser.*, No. 208.
- Nelson, Joseph S., Terry C. Grande and Mark V. H. Wilson. 2016. *Fishes of the World*. John Wiley & Sons, New Jersey, 707 pp.
- Stergiou, K. I. and H. Fourtouni. 1991. Food habits, ontogenetic diet shift and selectivity in *Zeus faber* Linnaeus, 1758. *J. Fish Biol.*, 39(4): 589-603.
- Tortonese, E. 1986. *Cepolidae*. In P. J. P. Whitehead, M. L. Bauchot, J. C. Hureau, J. Nielsen and E. Tortonese (Ed.). *Fishes of the North eastern Atlantic and the Mediterranean*. Paris: UNESCO. 810-811p.
- Venu, S. 2016. The systematics distribution and bionomics of deep sea fishes beyond depth 200 m along the south west coast of India. Ph. D Thesis, Cochin University of Science and Technology, 520 pp.