

First record of the Taper-tail ribbonfish *Zu elongatus* Heemstra & Kannemeyer, 1984 from Indian EEZ

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Abstract

Taper-tail ribbon fish, *Zu elongatus* is recorded for first time from the Andaman and Nicobar waters of Indian Exclusive Economic Zone (EEZ). A single specimen of Standard length of 1280 mm and weighing about 2.2 Kg caught by the tuna longliner MFV BLUE MARLIN in November 2015. The specimen was collected at 10°48'6"N and 92°44'08"E at a depth of 408 m. Morphometric and meristic characters of the present specimen are compared in detail with published accounts.

Keywords: *Zu*, Trachipteridae, New record, Andaman Sea, Indian EEZ.

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Introduction

The fishes of the family Trachipteridae are characterized by long, laterally compressed ribbon or tape shaped body, short head, narrow mouth and reduced anal fin (absent in adults). The pectoral fin is small, pelvic fin long and fan like in juveniles composed of several rays, becoming reduced and lost in adults. These fishes are also characterised by the dorsal fin which runs the entire length of its back, with origin over the eye to operculum (Heemstra and Kannemeyer 1984). The family Trachipteridae consist of three genera (*Desmodema*, *Trachipterus* and *Zu*) altogether with 16 nominal species (Nelson 2006). The genus *Zu* is the most generalised, and *Desmodema* is the most specialized of the three Trachipteridae genera (Walters 1963). The genus *Zu* is also diagnosed from all the others by the strongly scalloped ventral margin, also distinguished from *Desmodema* with presence of a single neural pterygophore before the first and second neural spine, whereas the latter has seven pterygophores between first and second neural spine (Walters and Fitch 1960).

The members of the genus *Zu* have been described as having a more robust and less compressed body than the genus *Trachipterus*. Caudal fin comprises 6-12 rays in upper portion and 1-5 lower. The pelvic fin is very long in pre juveniles, becoming shorter and present as tiny rudiments in the adult. The members of the genus *Zu* have been known from individuals found thrown ashore in aftermath of storms (Heemstra and Kannemeyer 1986) but have become more commonly taken as by-catch of commercial trawling and long-lining.

Zu elongatus has been reported from off the Western Cape coast (Heemstra and Kannemeyer 1986); South Africa (Fitch and Schultz 1978) and South West Pacific, New Zealand (Paulin et al. 1989; Roberts 1991; Stewart 2015). According to Heemstra and Kannemeyer (1984), *Z. elongatus* is epipelagic and attains an average length of 1200 mm. The present study reports *Z. elongatus* from the Andaman and Nicobar waters (Andaman Sea) of Indian EEZ for the first time, extending the range into Indian waters.

Material and Methods

A single specimen of *Z. elongatus*, Heemstra & Kannemeyer, 1984 was caught during tuna longline operation conducted by the survey vessel MFV BLUE MARLIN attached to the Zonal base of Fishery Survey of India,

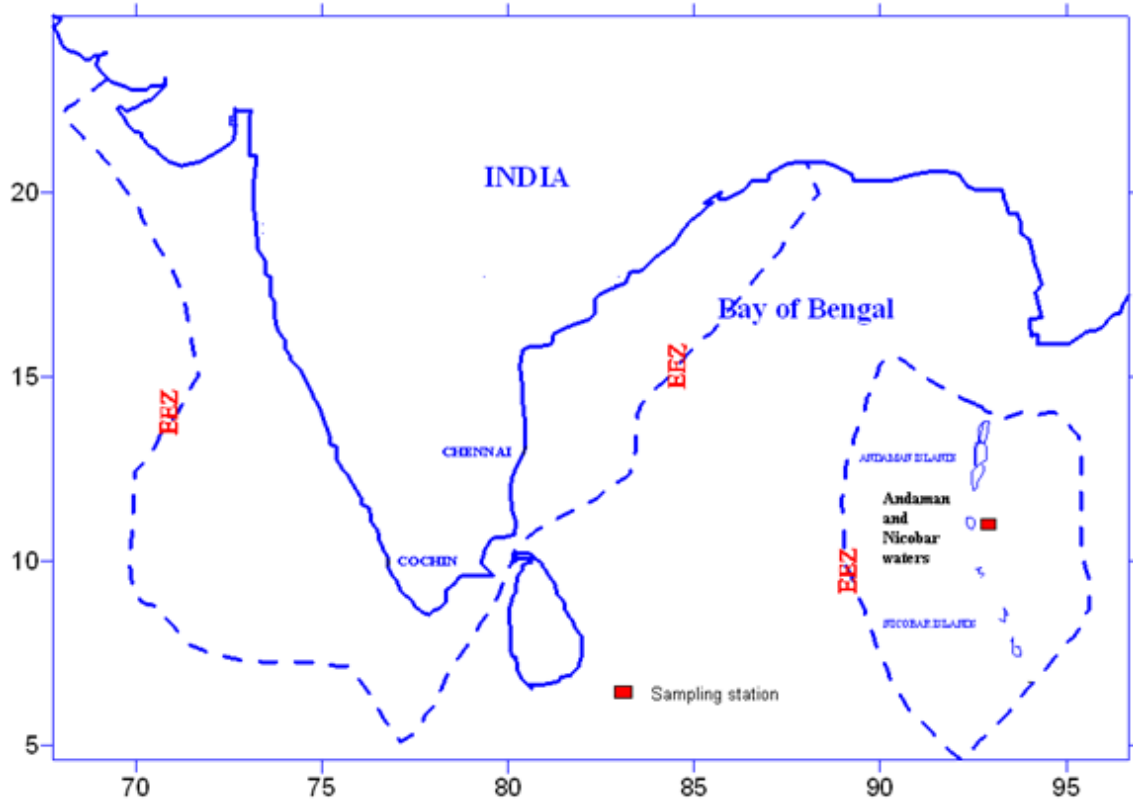


Figure 1. Distribution of *Zu elongatus* in Indian EEZ.

Port Blair in Andaman and Nicobar waters of Indian EEZ ($10^{\circ}48'6''\text{N}$, $92^{\circ}44'08''\text{E}$) (Fig. 1). The vessel was operating off Hut Bay Island at a depth of 408 m. The morphometric and meristic measurements of the specimen were taken on board following Heemstra and Kannemeyer (1984) (Table 1), and the specimen was preserved in 10% formalin. The specimen was identified based on Bauchot (1984), Heemstra and Kannemeyer (1984) and Fish Base (Froese and Pauly 2010 accessed on 10.2016) and deposited in the museum of Zonal base of Fishery Survey of India, Port Blair (Ref No.Mus.FSI.PB/T/10/2015). The numbers of vertebrae were determined by hemisection.

Abbreviations: D, Dorsal Fin Rays; P, Pelvic Fin Rays; GR, Gill Rakers; LL, Lateral line; SL, Slandered Length; FL, Fork Length; HL, Head Length..

Results

Systematics

Class: Actinopterygii

Order: Lampriformes Regan, 1907

Family: Trachiperidae Swainson, 1839

Genus: *Zu* Walters & Fitch, 1960

Zu elongatus Heemstra & Kannemeyer, 1984

(Fig. 2)

Description: Body laterally compressed with a standard length of 1280 mm. Dorsal fin consists of 147 soft rays, pectoral fin 11, and ventral fin 7. The anal portion of the body posterior to the anus is strongly tapered terminating in a well-developed caudal fin (damaged). The lateral line originates from behind the uppermost portion of the operculum and gradually slopes down across the flank and continues along ventral edge of caudal

Table 1. Comparison of morphometric and meristic data of the present specimen with holotype of *Zu elongatus* Heemstra & Kannemeyer 1984, and *Zu cristatus* (Bonelli, 1820).

Characters	Measurements		
	Present specimen	<i>Z. elongatus</i> Heemstra & Kannemeyer, 1984 Holotype SAM 2470A	<i>Z. cristatus</i> (Bonelli, 1820) Holotype MZUT 1190
Morphometric counts			
Standard Length (mm)	1280	1200	590
Body Depth	200 (15.6 %SL)	14.5-20.4 %SL	19.7-21 %SL
Body depth in anal length	2.9		
Head length	180 (14%SL)		
Pre-dorsal length	150 (11.71 %SL)		
Snout length	140 (10.93 %SL)		
Eye diameter	55 (30.5 %HL)		
Length of lower jaw	100		
Length of Maxilla	110		
Body depth at anus	110		
Dorsal fin height	55		
Snout to anal	590		
Eye diameter in lower length of jaw	18	12 – 20	15 – 20
Pre orbital length	70 (38.8 %HL)		
Pre dorsal fin length	170 (13.28 %SL)		
Meristic counts			
Pectoral fin rays	11	11-13	10-12
dorsal fin rays	147	138-147	120-150
Lateral line scale	127	125-143	96-106
Gill Rakers (total)	9 (1+8)	9-12 (2-3+7-9)	10-12 (2-3+8-9)
Bronchiostegal rays	6		
Total vertebrae	86	84-88	63-69
Pre anal vertebrae	39	37-40	32-33

region, terminating at the caudal fin base. A total of 127 scales were present on the lateral line. Eye diameter is 55 mm: which is about 30.5 %HL, 4.29 %SL and 1.8 times lower jaw length. The snout-anus distance is 590 mm, 46.1 %SL. The gill rakers (first arch) consist of 8 and 1 on lower limb and upper limb, respectively. D-147; P-11; V-7; GR-1+8; LL-127; and a total 86 vertebrae consist 39 in pre anal. The snout to anus distance is 59 cm which is less than 50% of the standard length. Skin comprised with the thin elongated skutes. The present specimen is confirmed as *Z. elongatus* based on the pertinent reports by Heemstra and Kannemeyer (1984).

Discussion

The morphometric and meristic characters of our specimen was compared with holotype of *Z. elongatus* (SAM 2470A), 1160 mm Standard length (SL) described by Heemstra and Kannemeyer (1984). A closely related specimen of *Z. cristatus* was also used for comparison. *Z. elongatus* has been reported from Southeast Atlantic, Namibia and off the Western Cape coast of South Africa (Bianchi et al. 1999); Southwest Pacific: New Zealand (Paulin et al. 1989; Roberts 1991; Stewart 2015). The specimen available in the museums, Queen Victoria Museum, Tasmania and Australian National Collection at CSIRO confirms the presence of *Z. elongatus* in Australian waters (Martin 2015). A specimen collected from the western Indian Ocean, off the Madagascar Ridge (CSIRO H5915-01, 1325 mm SL) extended the range of the species to the southern Indian Ocean (Martin, 2015). With this report geographic distribution has been extended to Indian EEZ. In contrast, *Z. cristatus* enjoys cosmopolitan distribution ranging from tropical to temperate waters (Froese and Pauly 2010). It has reported from Western North Atlantic (Olney and Naplin 1980), Adriatic Sea (Dulčić 2002), Tyrrhenian Sea, Italy (Bianco et al. 2006), and Tunisian water, central Meridian (Bradai et al. 2012).

The characteristics and morphometric measurements of the present specimen closely matches with the



Figure 2. *Zu elongatus* Heemstra & Kannemeyer, 1984 FSI.PB/T/10/2015 1280 mm.

description given by Heemstra and Kannemeyer (1984) for the holotype of *Z. elongatus* (SAM 2470 A, 1160 mm SL, Cape Columbine, Western Cape Province). *Zu elongatus* has 84-87 total vertebrae, 29-31 pre caudal and 38-40 pre anal. Our specimen has 86 total vertebrae, 30 pre caudal vertebrae and 39 pre anal vertebrae, respectively. Whereas in *Z. cristatus* total vertebrae is 63-69, 22-24 pre caudal and 32 pre anal (Bonelli 1820). The gill rakers on the first arch for *Z. elongatus* 2-3 + 7-9 = 9-12 in *Z. cristatus* 2-3 + 8-9 = 10-12; examined specimen observed total 9 (1+8) gill arch. The body depth of *Z. elongatus* is 14.5-20.4 %SL, *Z. cristatus* 19.7-21%SL in examined specimen it is 15.6 %SL. The lateral line plates of *Z. elongatus* 125-143, *Z. cristatus* 96-106 whereas the examined specimen having 127. These confirm the identification of examined specimen is *Z. elongatus*.

The present record is significant because the *Z. cristatus* is cosmopolitan species and found elsewhere in the world ranging from tropical to temperate waters whereas *Z. elongatus* is more limited. Heemstra and Kannemeyer (1984) reported an adult specimens *Z. elongatus* in the bathypelagic zones of Indian Ocean and from New Zealand. The present study reports the occurrence *Z. elongatus* from the Indian EEZ for the first time, extending the range of the species into southeast Bay of Bengal (Andaman Sea).

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