



### Short Communication

## Occurrence record and range extension of *Ebosia falcata* Eschmeyer & Rama-Rao, 1978 (Scorpaenidae: Pteroinae) from West Bengal and Odisha, India

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Present study reports the occurrence of scorpionfish *Ebosia falcata* Eschmeyer & Rama-Rao, 1978, for the first time from the northern part of the east coast of India (West Bengal and Odisha) based on four specimens (Standard Length: 55 – 73 mm). Description and figures of the species are provided herewith along with the morphometric measurements and meristic counts.

[**Keywords:** Cocks Comb Firefish, First report, Odisha, West Bengal]

### Introduction

The Scorpaeniformes are a diverse order of ray-finned fish with 1679 valid species under 34 families and 24 subfamilies worldwide<sup>1</sup>. Fishes of order Scorpaeniformes are one of the most challenging groups of fishes in respect to their taxonomic identification and procedure of collection. They are generally found in hard bottom, and reef-associated areas worldwide, distributed in the temperate and tropical seas where they camouflage normally with the natural background<sup>2,3</sup>. From Indian waters, order Scorpaeniformes is represented by 106 species belonging to 11 families<sup>4</sup>. Fishes of this order are carnivorous, mostly feeding on crustaceans and smaller fishes. Most species live on the sea bottom in relatively shallow waters of reef areas.

The genus *Ebosia* Jordan and Starks 1904 comes under the subfamily Pteroinae (Lionfish) which contains other genera *Brachypterois*, *Dendrochirus*, *Parapterois* and *Pterois*. The genus is represented by only four valid species, viz. *Ebosia bleekeri* (Döderlein, 1884) (western Pacific Ocean), *Ebosia falcata* Eschmeyer & Rama-Rao, 1978 (northern and eastern Indian Ocean), *Ebosia saya* Matsunuma and

Motomura, 2014 (western Indian Ocean) and *Ebosia vespertina* Matsunuma and Motomura, 2015 (western Indian Ocean). Species of this genus residing in the Indo-Pacific region only are characterized by having the coronal, parietal, and nuchal spine bases continuous above the posterior portion of eyes, and the parietal spine elevated into a thin bony crest in males<sup>5,6</sup>. From Indian waters, *Ebosia falcata* was only reported from Kerala along the west coast<sup>5</sup>, while from the east coast reported from Visakhapatnam, Andhra Pradesh<sup>7</sup> and Gulf of Mannar, Tamil Nadu<sup>8</sup>. During a survey on the ornamental fauna of the east coast of India this species was collected from Petuaghat fishing harbour, West Bengal and Paradeep fishing harbour, Odisha. This paper thus deals with the description and first reports of *Ebosia falcata* Eschmeyer & Rama-Rao, 1978 from West Bengal and Odisha and extends its range to further north of Bay of Bengal along the east coast of India.

### Materials and Methods

During the ichthyofaunal collection along the northern part of the east coast of India, authors collected three specimens (SL 69 – 73 mm) of an interesting scorpionfish of genus *Ebosia* from Petuaghat fishing harbour, West Bengal (21°47'4.05" N; 87°52'5.99" E) on 12<sup>th</sup> March 2019 which were later identified as *Ebosia falcata* Eschmeyer and Rama-Rao, 1978. Later another specimen of the same species (SL 55 mm) was collected from Paradeep fishing harbour, Jagatsinghpur, Odisha (20°17'5.26" N; 86°42'3.90" E) on 13<sup>th</sup> October 2019 (Fig. 1). The specimens were caught as bycatch using trawl net at a distance of nearly 40 km offshore. All the specimens are deposited in the Estuarine Biology Regional Centre, Zoological Survey of India, Gopalpur-on-Sea, Odisha with the reg. nos. EBRC/ZSI/F 11240 (West Bengal specimens) and EBRC/ZSI/F 12120 (Odisha specimen) after proper identification using relevant literatures<sup>6,7,9</sup>. Measurements were done by standard protocols<sup>10,11</sup>, with head width, head depth, maxillary depth, and body depth at the anal-fin origin following Matsunuma & Motomura<sup>9</sup>. The abbreviations SL and HL represent Standard Length and Head Length, respectively. The fresh specimens were preserved in 70 % ethyl alcohol after collection and measurements.

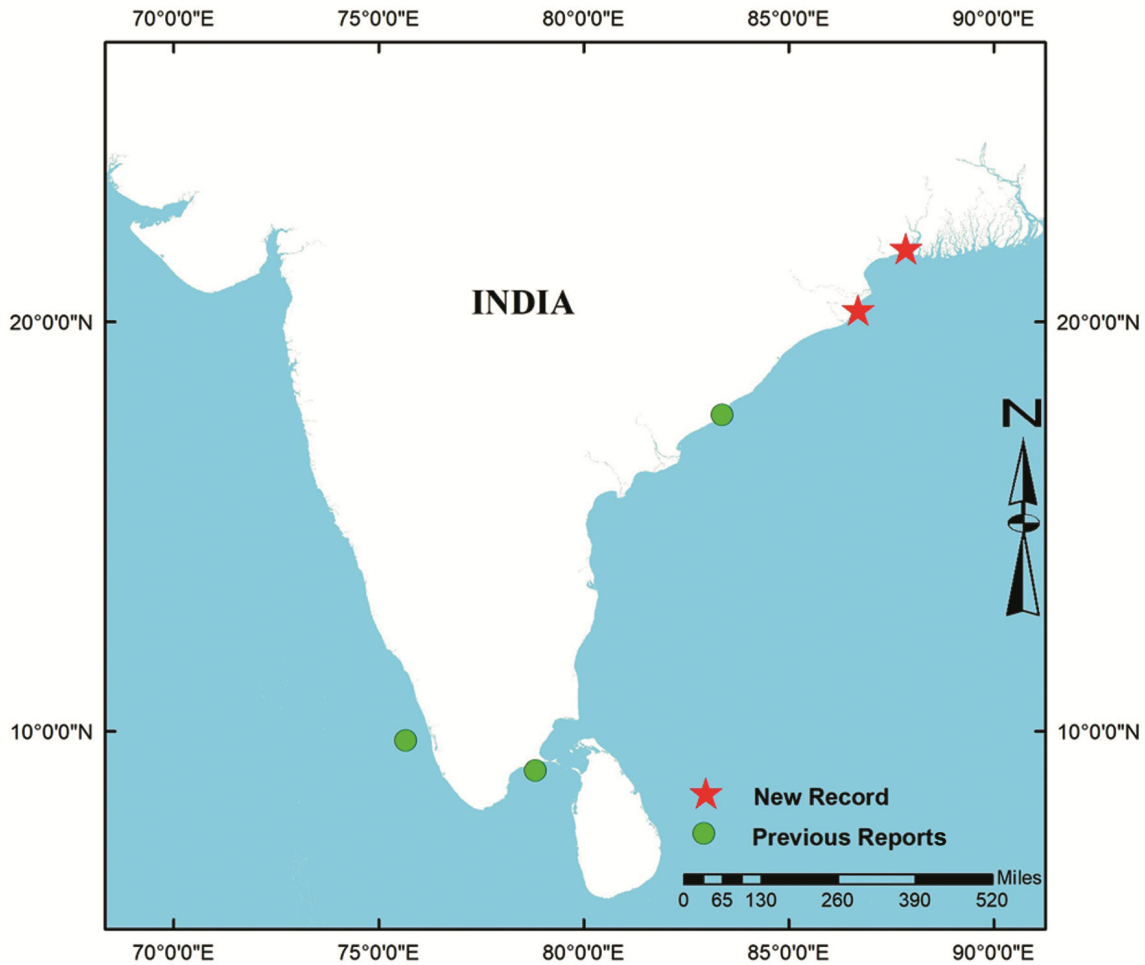


Fig. 1 — Known distribution of the species *E. falcata* along with collection sites of new record

The details of morphometric measurements were taken in mm by dial caliper up to 0.1 mm accuracy. The fresh photography of the species was done using a Nikon D5600 camera. Vertebrae were counted by digital X-ray.

## Results

Diagnostic specific characters along with morphological characters of the specimens are expressed hereunder.

## Systematic account

Class: Actinopterygii Klein, 1885  
 Order: Scorpaeniformes Greenwood *et al.*, 1966  
 Family: Scorpaenidae Risso, 1827  
 Subfamily: Pteroinae Kaup, 1873  
 Genus: *Ebosia* Jordan & Starks, 1904  
*Ebosia falcata* Eschmeyer & Rama-Rao, 1978 (Fig. 2)  
 Common name: Cocks Comb Firefish

*Ebosia falcata* Eschmeyer & Rama Rao, 1978 (Figs. 2 a,b,c)

*Ebosia falcata* Eschmeyer & Rama Rao, 1978, *Matsya*, 3: 66 (Type locality: Somalia).

*Material examined*: 3 unsexed specimens, 69 – 73 mm SL, Petuaghat, West Bengal, Reg no. EBRC/ZSI/F 11240; 1 female specimen, 55 mm SL, Paradeep, Odisha, Reg. no. EBRC/ZSI/F 12120.

*Diagnosis*: D XIII, 9 – 10; A III, 8; C 12 – 13; V I, 5; P 16 – 17; GR 6+1+8 – 11 = 15 – 18; Vertebrae 24 (Fig. 2).

Elongated body laterally compressed at the posterior end. Dorsal profile prominently arched above operculum; depth of body is maximum at dorsal fin origin. Snout concave before eyes. Deeply concave and wide interorbital region with coronal ridges. Large eyes. Oblique mouth; tip of lower jaw with less developed symphyseal knob, which fits in notch on upper jaw. Villiform teeth on both jaws and

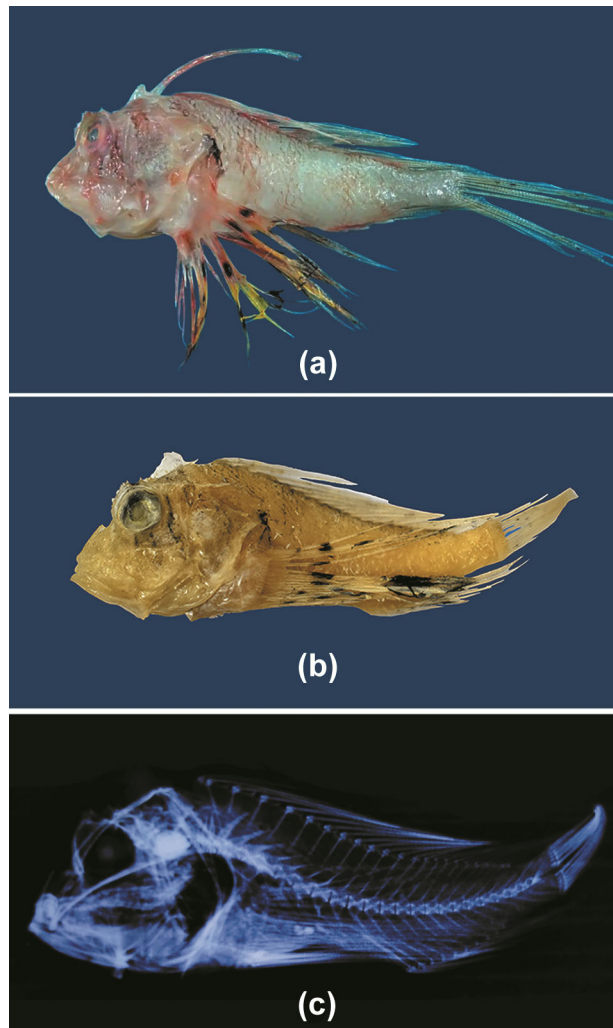


Fig. 2 — Photograph of *Ebosia falcata* Eschmeyer & Rama-Rao, 1978: a) Fresh specimen with long parietal crest above eye, b) Preserved specimen; and c) X-ray of *E. falcata* showing vertebrae

vomers. Spines on head well developed. Preopercular spines 4. Lacrimal spines 2, suborbital ridge spiny with ten irregular-shaped spines. Cleithral spine broad; a single feeble broad opercular spine present; supracleithral spine ridge-like with blunt tip. Nuchal spine small; parietal ridge in males produced to thin elevated bony crests; small in case of female specimen. Body covered with large ctenoid scales which shed down soon after the collection; cheeks and postorbital area scaled; interorbital and snout scaleless. Dorsal fin continuous; spines elongated with deeply incised membrane between spines. Fifth spine longest. Dorsal soft rays distally branched. Pectoral fin rays extend posteriorly up to the anal fin origin. Caudal fin very long with middle rays longest and branched; ventral fin shorter than pectoral fin.

Gill opening wide with gill membranes free from isthmus. Gill rakers short. Scale rows above the lateral line 4 in number.

Head length 40.54 – 43.31 % of SL; Body depth 32.58 – 34.19 % at dorsal fin origin and 19 – 22.61 % at anal fin origin of SL. Predorsal length 36 – 37.46 %; preanal length 54.72 – 57.53 % of SL. Pectoral fin length 52.38 – 55.24 % while pelvic fin length 28.87 – 31.17 % of SL. Snout length 31.17 – 31.54 %; eye diameter 23 – 28.85 %; inter-orbital length 19.04 – 25 %; maxilla length 35.73 – 37.99 %; mandible length 34.18 – 36.68 % of HL. Crest height 11.47 – 12.77 % of HL.

**Colour:** Body reddish with nine bands including three on the head (first two below eye, third posterior to preopercle) and six on body all bordered black, a faint bar on snout. A large black blotch near pectoral fin base, situated under opercular flap. Ventral surface of body pale white. Dorsal fin spines reddish like body with white tips, dorsal rays yellow with an orange tint, pectoral fins reddish basally with lower rays yellow, membrane of pectoral fins with scattered black spots, caudal and anal fins yellow which fade soon after collection.

**Distribution:** From the Indian waters, this species is reported from Kerala<sup>5</sup> and Andhra Pradesh<sup>7</sup>, Tamil Nadu<sup>8</sup>. From other places, it's distributed along the Indian Ocean with Off Somalia, Pakistan, and off the Andaman Sea coast of Thailand.

### Discussion

The genus *Ebosia* was previously represented by only two species namely *Ebosia bleekeri* (Döderlein, 1884) and *Ebosia falcata* Eschmeyer & Rama-Rao 1978 worldwide. *E. falcata* is distinguishable from *E. bleekeri* in possessing higher number of dorsal spines (XIII vs. VIII), and a longer parietal crest in male specimens. A recent description of two new species, viz. *Ebosia saya* Matsunuma & Motomura, 2014 and *Ebosia vespertina* Matsunuma & Motomura, 2015 makes the identification of *E. falcata* difficult as it shares similar appearance with these two species. However, *E. falcata* can be distinguished from *E. saya* and *E. vespertina* by having usually fewer scale rows above the lateral line [4 vs. 5 in *E. saya* and *E. vespertina*], 3 – 5 (modally 4) scale rows between the sixth dorsal-fin spine base and the lateral line [vs. 4 – 6 (5)], 3 – 5 (modally 4) scale rows between last dorsal spine base and lateral line (vs. 5) moreover a less number of scales on the preopercular region [10 vs. 15]. *E. falcata* has a larger black blotch than that of *E. saya* above pectoral fin

base and blotches on the pectoral fins are also much larger than that of latter. *E. falcata* differs from *E. vespertina* in having less number of pectoral fin rays [16 – 17 vs. 17 – 18]. The number of longitudinal scale rows series of *E. falcata* is less than that of *E. vespertina* [43 vs. 49] and total number of gill rakers are more in case of *E. falcata* [5+11 vs. 4+10]. Thus, the studied specimens are distinguishable from other *Ebosia* species. The present paper thus confirms the presence of *E. falcata* in the coastal waters of West Bengal and Odisha.

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### Conflict of Interest

Authors don't have any conflict of interest.

### Ethical Statement

Dead specimens were collected from fishing harbours following scientific collection ethics.

### Author Contributions

SR, DR & SRM: Collection, preservation, identification and manuscript preparation; and AM: Identification, manuscript preparation and critical analysis.

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