

NEW RECORD OF NARROWBAR REEFGOBY, *PRIOLEPIS PROFUNDA* (ACTINOPTERYGII: PERCIFORMES: GOBIIDAE), FROM INDIAN WATERS

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Abstract. The present paper reports the first record of the narrowbar reefgoby, *Priolepis profunda* (Weber, 1909) from the Indian coast. Two specimens (33.5 and 38.5 mm of TL), were caught during a demersal trawling survey conducted in the area between 9°40.7'N, 76°05.8'E and 9°45.1'N, 76°03.9'E at 33 m in June 2017. The specimens were collected from a coral rock which entered in the trawl net during the demersal resources survey. The morphological descriptions of the specimens collected are compared with those of existing records.

Keywords: *Priolepis profunda*, coral rock, new record, bottom trawl, India

INTRODUCTION

Reefgobies, representing the genus *Priolepis*, are a group of very small marine gobiids distributed in the reef habitat of Indo-Pacific and central Atlantic oceans (Winterbottom and Burrige 1992, Goren and Baranes 1995, Nogawa and Endo 2007, Hoese and Larson 2010). The Gobiidae includes 1640 species from six subfamilies (Pezold 1993, Hoese and Larson 1994, Nelson 2006). There are about 150 species of gobiids that have been reported from India (Jones and Kumaran 1980, Murty 2002, Kannan et al. 2013). *Priolepis profunda* (Weber, 1909) belongs to the genus *Priolepis* Valenciennes, 1837 which has been reviewed and revised by Winterbottom and Burrige (1989, 1992, 1993a, 1993b, 1993c). Thirty-four species in *Priolepis* have been described (Hoese and Larson 2010). *Priolepis profunda* has been reported from the Philippines (Villoso et al. 1983), Australia (Koumans 1953, Kuitert and Tonzuka 2001, Hoese et al. 2006, Hoese and Larson 2010, Allen and Erdmann 2012), and Indonesia (Allen and Adrim 2003). *Priolepis profunda* has been recorded from the depth of 45–114 m (Hoese and Larson 2010), however, *Priolepis goldshmidtae* Goren et Baranes, 1995 has been reported from depths of 434–496 m (Goren and Baranes 1995). *Priolepis profunda* has not yet been found in Indian waters, so the presently reported record constitutes the first evidence of this.

MATERIALS AND METHODS

Two specimens of *P. profunda* (Figs. 1A, 1B) were caught during the bottom trawl survey from the south-west coast of India by the vessel MFV *Matsya Varshini* of the Fishery Survey of India during June 2017. The fish were collected during trawling operations made in between 9°40.7'N, 76°05.8'E and 9°45.1'N, 76°03.9'E at 33 m depth, where the bottom was sandy. The specimens were collected from coral rocks of about 60 cm height which entered the trawl net during fishing operation. These rocks had many cavities that provided shelter for three crab species of about 25 mm carapace width, one shrimp species of the genus *Alpheus* and several species of polychaetes, among the other organisms (Ramachandran et al. 2019). *Priolepis profunda* was identified following the standard literature (Winterbottom and Burrige 1992, Hoese and Larson 2010). Morphological characters of our specimens were compared with those of the specimens recorded elsewhere (Winterbottom and Burrige 1992, Hoese and Larson 2010). Measurements were recorded with a digital caliper (Mitutoyo ABS lute Digimatte, Japan) and all are point-to-point measurements and meristic counting was made using Trinocular dissection microscope DSZ 88-ALMICRO. Standard length (SL) was measured from the tip of the snout to the end of the hypural plate. Head width (= maximum width) was measured at cheeks, while the head depth was the depth of head at the vertical

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and posterior margin of pre-operculum). The longitudinal scale count was taken from the upper pectoral base along the midline to the end of the hypural plate. The transverse scale count was taken from the anal-fin origin upward and backward to base of the first dorsal fin. Morphometric characters of *P. profunda* were studied following Hoese and Larson, (2010) and the voucher specimens were deposited in the Marine Museum of the Cochin Base of the Fishery Survey of India (FSIKM Pp 2, 38.5), Kochi, Kerala, India.

RESULTS

Family GOBIIDAE

Genus *Priolepis* Valenciennes, 1837

Priolepis profunda (Weber, 1909)

(Fig. 1, Tables 1 and 2)

Description. Body compressed, tapering posteriorly, body scales ctenoid. Predorsal scaled up to above middle of interorbital space (Fig. 1C), scales irregularly arranged. Head slightly compressed, interorbital comparatively broader than in other species. Cheek slightly bulbous

even in formalin preserved samples, head depth slightly greater than width. Short snout, rounded, and shorter than eye length. Dorsal fin with VI spines (first) and 1 spine and 10 rays (second), soft rays branched. Pectoral fin with 19 rays, fin long, length about 25.4%–26.5% of SL, reaching above 2nd segmented anal rays. Anal fin with I spine and 8 rays, soft rays branched, gill rakers on outer face of first arch amounting to 3 + 1 + 11. Head length 28.6%–30.2% in SL; head width 18.9%–20.6% in SL. Head depth 20.8%–23.8% in SL. Outer face gill rakers of first arch slender and shorter than gill filaments; distal tip of rakers on inner face of first arch denticulate. Dorsal, anal, and pelvic fins having soft rays branched. First dorsal fin originating well behind pelvic fin insertion. Pelvic fins fused and highly branched without interspinal membrane, pelvic fin length about 22.2%–22.6 in SL, reaching posteriorly to base of 2nd anal ray; fifth pelvic fin sub-equal in length of fourth ray. Caudal fin having rounded margin and about 1.1 ± 0.01 times in head length. Conical teeth, slightly curved; 12 canines in outer row of upper jaw enlarged and widest; four inner

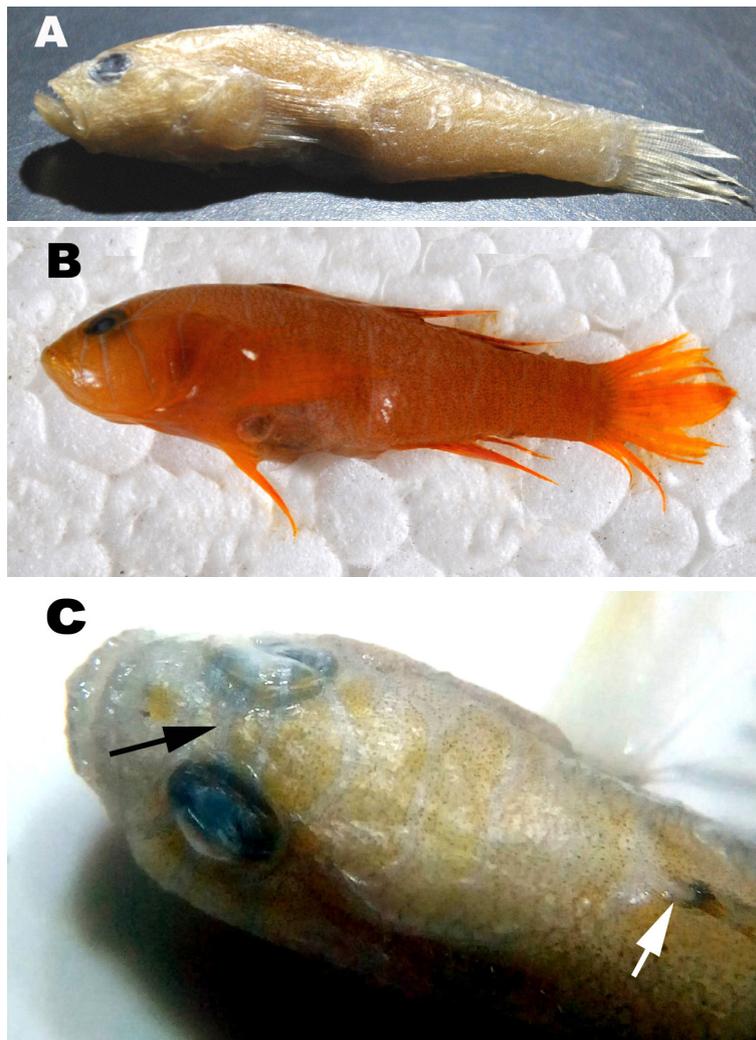


Fig. 1. A specimen of *Priolepis profunda* from Indian waters (38.5 mm TL); formalin-preserved sample (A), fresh specimen collected onboard the survey vessel (B), black arrow indicates predorsal scale up to middle of interorbital space and white arrow indicates origin of dorsal fin (C)

Table 1

A comparison of morphometric measurements of the presently reported specimens of *Priolepis profunda* from Indian waters with the values for congeners from Northwest Australia and Thailand reported by Hoese and Larson 2010

Morphometric character	This study		Hoese and Larson 2010		
	<i>P. profunda</i>	<i>P. profunda</i>	<i>P. akihito</i>	<i>P. cyanocephala</i>	<i>P. psygmophilia</i>
Total length [mm]	3.85–3.35	—	—	—	—
Standard length (SL) [mm]	3.15–2.65	—	—	—	—
Head length (HL) [%SL]	28.6–30.2	29.8–33.8	28.8–35.2	31.3	28–34
Head breadth [%SL]	18.9–20.6	21.0–23.7	22.6–24.8	24.4	18.24
Head depth [%SL]	20.8–23.8	22–23.8	20.7–22.7	19.4	15–19
Pectoral fin length [%SL]	26.4–30.2	30.5–31.9	—	—	—
Caudal fin length [%SL]	25.4–26.4	—	—	—	—
Pelvic fin length [%SL]	22.2–22.6	25.4–27.6	21.6–26	25.9	24–31
Eye diameter [%SL]	6.3–7.5	—	—	—	—
Interorbital width [%SL]	3.4–3.2	—	—	—	—
Body depth [%SL]	18.9–22.2	—	—	—	—
Anal length [%SL]	58.7–64.2	—	—	—	—
Caudal fin length [%HL]	1.12–1.14	1.0–1.2	1.4–1.7	1.1	1.1–1.2
Caudal peduncle height [%SL]	11.3–12.7	—	—	—	—
Caudal peduncle length [%SL]	15.1–15.9	—	—	—	—
Lower jaw length [%SL]	11.3–15.6	—	—	—	—
Upper jaw length [%SL]	13.2–15.9	—	—	—	—
1st dorsal fin height [%SL]	14.3–15.1	—	—	—	—
2nd dorsal fin height [%SL]	19.0–20.8	—	—	—	—
Dorsal fin base length [%SL]	38.1–41.5	—	—	—	—

Table 2

A comparison of meristic characters of the presently reported specimens of *Priolepis profunda* from Indian waters with the values for congeners from Northwest Australia and Thailand reported by Hoese and Larson 2010

Meristic characters	This study		Hoese and Larson 2010		
	<i>P. profunda</i>	<i>P. profunda</i>	<i>P. akihito</i>	<i>P. cyanocephala</i>	<i>P. psygmophilia</i>
1st dorsal fin rays	6	6	6	6	6
2nd dorsal fin rays	11	10–11.0	10–11	10–11	11–13
Pectoral fin rays	19	18–21 (66% is 19)	19–21	19–21	18–21
Pelvic fin rays	5	5	5	5	5
Anal fin rays	9 (1 + 8)	9 (1 + 8)	8–9	10	9–10
Caudal fin rays	17	17	17	17	17
Gill rakers	3 + 1 + 11	(2–3) + 1 + (10–13)	4 + 1 + (12–13)	3 + 1 + 13	(2–4) + 1 + (11–13)
Curved teeth (lower jaw outer row)	10	—	—	12	10–16
Curved teeth (upper jaw outer row)	12	—	—	20	24–28
Transverse scale row	11	10–14.0	13–16	9	7–10
Longitudinal scales	27	25–29	28–32	25	22–26
Spines (posterior margin, mid-lateral scale)	42 (41–43)	—	—	—	—
Branchiostegal rays	5	5	5	5	5
Predorsal scale	15–16	14–21	17–25	—	—
Interorbital sensory papillae	6 in single row	6–8	1–2 in each row	2	2

rows of small teeth, narrowing laterally into two rows; innermost row of teeth enlarged and inwardly directed, teeth on lateral end of upper jaw straight and closely arranged. 10 enlarged teeth in outer row of lower jaw curved and widely fixed; four inner rows of small teeth in lower jaw where innermost row slightly enlarged. Head and body greenish-brown, body orange. Head having

four thin bands with blue edges; first band extending from anteroventral edge of eye to behind upper jaw; second band extending from mid eye across cheek, third extending from posterior margin of eye across cheek to angle of preoperculum and is dorsally connected to curved band on dorsal side of head. Fourth vertical band positioned on mid operculum, joined on predorsal. 8 thin

white vertical bands on body, first band starting in front of dorsal fin origin; second band starting from base of IVth spine of first dorsal fin, third band starting from base of second dorsal fin origin; fourth and fifth bands starting at base of second dorsal fin; sixth band starting behind end of second dorsal fin; seventh band on middle of caudal peduncle and eighth band placed at posterior margin of caudal peduncle. Pectoral fin and caudal fin yellowish-orange, Interorbital with 3 faint transverse brown bands.

DISCUSSION

Predorsal scales, up to above the middle of the interorbital space are a unique character that separates *P. profunda* from other species of *Priolepis* and there are 6 papillae across the midline of interorbital space as stated in the literature (Winterbottom and Burrige 1992, Hoese and Larson 2010). There is a dark smudge on the anterior base of the first dorsal fin, whereas there is no such character was noticed in Indonesian specimens (Winterbottom and Burrige 1992), however, Hoese and Larson (2010) reported a distinct large black blotch at the anterior base of the first dorsal fin and the presence of dark spots on the dorsal fin, that are all matching with the present record. There were no scales on the operculum and the three bars on interorbital and 8 bands on the body are similar to the records from Indonesia and Western Australia (Kuitert and Tonzuka 2001, Hoese and Larson 2010). Regarding the dentition, widely fixed, enlarged, and curved teeth on out row of both jaw and 4 inner rows of small canines teeth are similar to the existing records (Hoese and Larson 2010). However, there are four straight tightly arranged teeth in each corner of the upper jaw in the present specimen. All the morphometric (Table 1) and meristic (Table 2) characters are within the range of existing published records on *P. profunda* (see Hoese and Larson 2010). The presently reported finding confirms the extension range of distribution of *Priolepis profunda* in Indian waters.

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