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First record of the Two-Spot Razorfish, *Iniistius bimaculatus* (Perciformes: Labridae) from Digha, North-East Coast of India

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ABSTRACT: In India, the two spotted razor fish is not among the main commercially important fisheries but has food and ornamental value. We report the occurrence of *Iniistius bimaculatus* (Rüppell, 1829) in Digha based on a 199mm long specimen. This species was previously reported in India only from the south-eastern and western coasts. Morphometric and meristic measurements were taken and the specimen was deposited in ICAR-Central Institute of Fisheries Education, Kolkata Centre Museum.

Key words: *Iniistius bimaculatus*, New record, North-east coast of India, Digha, Bay of Bengal.

RESUMEN: Primer reporte del Pez Navaja, *Iniistius bimaculatus* (Perciformes: Labridae) en Digha, noreste de la costa de India.

En India, el pez navaja no se encuentra entre los principales productos de pesquería comercial pero tiene valor alimenticio y ornamental. Reportamos la presencia de *Iniistius bimaculatus* (Rüppell, 1829) en Digha basada en un espécimen de 199mm de largo. Esta especie fue previamente reportada en India pero solamente en la costa sureste y este. Tomamos medidas morfométricas y merísticas y el espécimen fue depositado en ICAR-Instituto Central de Educación Pesquera, Museo Central de Kolkata.

Palabras clave: *Iniistius bimaculatus*, nuevo reporte, costa noreste de India, Digha, Bahía de Bengal.

The fishes of the family Labridae, commonly known as wrasses, hogfishes, razorfishes and tuskfishes, comprise 71 genera and 521 valid species, of which four are belonging to the subfamily Xyrichtyinae (very compressed body, firm sharp ridge steep forehead and snout) (Gomon & Randall, 1984; Nelson, 1994). Members of this family are associated with a variety of marine habitats such as sandy bottoms, and reefs at depths ranging usually from near shore 10 to 60 m; some are found even as deep as 100 m and widely distributed to Atlantic, Indian and Pacific waters. The members of the family Labridae are of great interest for ichthyologists due to their body shape and diverse colouration patterns. Most of these species are demersal species and sand burrowers; occur only sporadically or are known from a single specimen. This is because of their changes of colour and sex with growth (change sexes from an initial phase of both males and females to brilliantly coloured terminal male phase). *Iniistius bimaculatus* is known to occur in the Indo-Western Pacific region (Gomon & Randall, 1984) and eastern Papua New Guinea (Randall, 1995). There

are numerous documentation, report and studies carried out so far on Ichthyofaunal diversity of West Bengal (Mahapatra & Pradhan, in press; Manna & Goswami 1985; Goswami, 1992; Talwar et al., 1992; Chatterjee et al., 2000; Venkataraman & Wafar, 2005; Das et al., 2007; Yennawar et al., 2011; Sanyal et al., 2012; Venkataraman et al., 2012; Yennawar et al., 2013) which did not report the occurrence of Two spotted razor fish. During institutional survey around Digha coast authors collected 1 example of fish identified as *Iniistius bimaculatus* (Rüppell, 1829). The present paper reports new distribution record of the Two Spot Razorfish in the coastal waters of West Bengal.

A single specimen two-spot razorfish, *Iniistius bimaculatus*, were collected (Fig. 1) of 199 mm in total length (TL) from Digha landing centre (21°36' N and 87°32' E), West Bengal, India caught by a commercial trawl at about 21 meters of depth. The original colouration of live specimens was recorded on photographs. Taxonomic identification of the specimens was based on Froese & Pauly, 2013; Gomon & Randall, 1984; Randall, 1995; Sommer et al., 1996; Paolo & Randall, 2000; Randall & Earle, 2002.



Fig. 1. Two-spot razorfish, *Iniistius bimaculatus* from Digha, India (CIFE/KOL/MW/F-0222; TL = 199 mm).

Measurements and counts of the examined specimens follow Holden & Raitt (1974) and Hubbs & Lagler (1964). All the measurements are done by Mitutoyo digital caliper to the nearest 0.01 mm (Table 1) and photograph are taken Sony DSC-W800 camera. The presently illustrated specimen were preserved in 10% formaldehyde and deposited in the Museum of ICAR-Central Institute of Fisheries Education, Kolkata Centre (CIFE/KOL/MW/F-0222, Collected by: Mr. Alakesh Pradhan and Dr. B. K. Mahapatra, Col.09.04.16). Morphometric ratios and meristic counts of the specimen are given in the description section.

Diagnostic: Top of head and snout compressed into a knife like edge; dorsal fin continuous, but with a gap between second and third spines, the membrane there deeply notched, but not to base of fin; 2 large canines present anteriorly in both jaw (upper and lower). Black spot on lower side of third row of scales below lateral line; scattered orange-red dots on body, especially along lateral line and caudal fin.

Description: Body moderately deep, and compressed, covered with cycloid scales; depth at gill opening 3.11 in TL (Table 1). Head compressed to a sharp knife-like edge, extremely convex before eye; Head 4.06 in TL; Eye small and 4.9 in HL and 19.9 in TL; snout very steep and compressed, jaws prominent with 2 large canines situated anteriorly in each jaw. Dorsal fin continuous, but with a gap between second and third spines, the membrane there deeply notched but not to base of fin, origin behind or nearly to a vertical rear edge of eye, with 9 spines

and 14 soft rays; predorsal length 6.86 in TL, dorsal fin base 1.64 in TL; anal fin with 1 spines and 11 soft rays; preanal length 2.24 in TL; pectoral fin well developed with 12 rays; pelvic fins with 1 spine and 5 rays; caudal fin asymmetrically rounded with 14 rays. Lateral lines interrupted below posterior portion of dorsal fin, with 24 pored scales. Cheeks with 8 rows of rudimentary scales; few moderate size scales present anterodorsally on opercle. Two large strong canines Teeth present anteriorly in both upper and lower jaw.

Colouration: In fresh specimens, body pale grey to bright pink in colour, with a black spot on side beneath distal end of pectoral fin; light yellow colouration is seen before the black spot; scattered orange-red dots on body in life, especially along lateral line; leading edge of head pale blue; snout region has tinge of yellowish in colour; dorsal fin tip darker pink in colour; caudal fin with pale blue or light orange-yellow coloured vertical lines and presence of numerous orange or pink dots; anal fin with a pale blue line near base, the rest of fin pale yellowish.

Habitat: *Iniistius bimaculatus* is found in shallow waters in a variety of habitats, including bare sand and rock, grass and algae covered bottoms and coral reefs but rare in muddy areas and in the deep lagoons.

Remarks: The genus *Iniistius* is known to have about 75 species worldwide (Froese, *et al.* 2013). The specimens described above bear a continuous dorsal fin, but with a gap between second and third spines, the membrane

TABLE 1
Morphometric (in mm) and meristic counts of
Iniistius bimaculatus (n=1), collected from
Digba fish landing centre

Morphometric variables	Measurement (mm)
Total length (TL)	199
Standard length (SL)	171
Head length (HL)	49
Body depth (BD)	64
Eye diameter (ED)	10
Pre orbital length (PoL)	22
Pre dorsal length (PDL)	29
Pre pectoral length (PPL)	45
Pre pelvic length (PVL)	48
Pre anal length (PAL)	89
Dorsal fin base length (DFB)	121
Pectoral fin base length	11
Pelvic fin base length	4
Anal fin length	64
Pectoral fin length	39
Pelvic fin length	29
Caudal fin length	29
Caudal peduncle length	28
Caudal peduncle height	23
Relative characters:	
TL/BD	3.11
TL/HL	4.06
TL/ED	19.9
HL/ED	4.9
TL/PDL	6.86
TL/PAL	2.24
TL/PDL	
Meristic counts	
Dorsal fin count	IX + 14
Anal fin count	I + 11
Pelvic fin count	I + 5
Pectoral fin count	12
Caudal fin count	14
Lateral line scale	24

there deeply notched, but not to base of fin in *I. bimaculatus* but in *Iniistius pavo* first 2 spines connected to each other by a membrane, but separated by a large gap from rest of fin. *Iniistius bimaculatus* distinctly different from *Iniistius pavo* by the absence of blue-edged black spot above lateral line. *Iniistius pentadactylus* has a dusky spot on upper side between distal part of pectoral fin

and lateral line, confined to first row of scales below lateral line where a blackish spot is present on lower side of third row of scales below lateral line in *I. bimaculatus* with scattered orange-red dots on body in life, especially along lateral line, with 5 red spots larger than pupil behind eye (the last 4 anteriorly on lateral line). Other species of the genus known from this region do not possess any such colour pattern.

From Indian waters the species was reported earlier from Tuticorin (Froese & Pauly, 2012), Chennai (CMFRI, 2009), Vizhinjam and Mangalore (Saravanan et al., 2011). Moreover there is no record of occurrence of this species on the north east coast of India. The presently reported findings constitute suggests the distribution of *I. bimaculatus* along the stretch of East Coast of India from West Bengal to Tamil Nadu (Western Bay of Bengal). In view of the above the occurrence of this species in West Bengal coast is reported after a very long time therefore; our recent record of this species suggests the population of *I. bimaculatus* to be in a precarious state which emphasized the fish distribution record of this species in West Bengal coast. It is interesting to know that as the species has never reported at this coast, thus the current record revelled the possibilities due to climate change or habitat destruction. Additionally, our present findings unwrapped the possibility for new distribution records of *I. bimaculatus* and other species of the genus. The presently reported study also features a geographical range extension of *Iniistius bimaculatus* from the south western and south eastern coast to the north eastern coast of India and an addition to the ichthyofaunal diversity of Bay of Bengal coastal waters.

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