

## Range extension and first report of the fish *Lagocephalus inermis* (Tetraodontiformes: Tetraodontidae) from Digha, Northeast Coast of India

Bijay Kali Mahapatra & Alakesh Pradhan

ICAR-Central Institute of Fisheries Education, Salt Lake City, Kolkata-700091, India. Fax: 91(India)-33-2357-3469; bkmahapatra@cife.edu.in

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**ABSTRACT:** The occurrence of *Lagocephalus inermis* (Temminck & Schlegel, 1850) is reported for the first time from Digha extending the range of the species to the east coast of India based on one specimen. This species was already reported from south-eastern coast of India and western coast of India. The 196 mm standard length specimen from Digha Mohana is described in detail.

**Key words:** *Lagocephalus inermis*, Tetraodontidae, North-east coast of India, Digha, Bay of Bengal.

**RESUMEN:** **Distribución y primer reporte del pez *Lagocephalus inermis* (Tetraodontiformes: Tetraodontidae) en Digha, Northeast Coast of India.** Este es el primer informe de la presencia del pez *Lagocephalus inermis* (Temminck y Schlegel, 1850) en Digha, India, extendiendo su distribución a la costa oriental del país. Ya hay registros de esta especie en la costa sur-oriental y la costa occidental de la India. Describimos en detalle el espécimen, con una longitud estándar 196 mm y capturado en Digha.

**Palabras clave:** *Lagocephalus inermis*, Tetraodontidae, Costa noreste de India, Digha, Bahía de Bengala.

Smooth blaasop or Smooth-backed blowfish belongs in the family Tetraodontidae (puffers), a speciose marine fish family that has about 19 genera and 130 valid species, mostly shallow and demersal water inhabitants of tropical/subtropical generally inhabited in marine environments, with several species entering and occurring in brackish and freshwater environments (Nelson, 2006; Froese & Pauly 2007; 2013). It is found at depths ranges of 10-200 m. *Lagocephalus inermis* is widely distributed in Indo-West Pacific from Algoa Bay, South Africa to the coasts of the Yellow Sea, East China Sea, South China Sea, and Taiwan (Su & Li, 2002) and in the western Indian Ocean & eastern Indian Ocean. There are numerous documentation, report and studies carried out so far on Ichthyofaunal diversity of West Bengal (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 Smooth-backed blowfish recently collected from West Bengal coastal waters. During local survey around Digha coast authors collected 1 example of fish identified as *Lagocephalus inermis* (Temminck and

Schlegel 1850). The systematic study on the fish fauna of Digha coast was carried out by Chatterjee et al. (2000), who reported 212 species under 145 genera and 88 families and Manna et al. (1985) reported 168 species under 68 family, included only one species *Lagocephalus lunaris* (Bloch and Schneider 1801) of puffer fish from the genus *Lagocephalus* (Table 1). The present paper reports new distribution record of *Lagocephalus inermis* in the coastal waters of West Bengal.

### MATERIALS AND METHODS

A single specimen (1ex, CIFE/KOL/0073, Col.08.02.15) of *Lagocephalus inermis* was collected (SL:196 mm) by using trawl nets from the fish landing centre at Mohana, Digha (21°37.843'N, 87°32.827'E), West Bengal, India (Fig. 1), Coll: Dr. B.K. Mahapatra & Mr. Alakesh Pradhan. Photographs were taken on the field in fresh condition (Fig. 2) and specimens were preserved in 10% formaldehyde and deposited in the museum of the Central Institute of Fisheries Education, Kolkata Centre, West Bengal, India where they were identified following Talwar

TABLE 1  
Distribution records of the genus *Lagocephalus* in India

SN	Species	Distribution	Occurance locations	References
	<i>Lagocephalus guentheri</i> Miranda Ribeiro, 1915	Andaman and Nicobar Islands	2	Rajan et al., 2011
	<i>Lagocephalus inermis</i> (Temminck & Schlegel, 1850)	Andaman and Nicobar Islands, Goa, Neendakara and Sakthikulangara (Kerala), Mangalore (Karnataka), Parangipettai (Tamil Nadu), Andhra Pradesh	8	Dineshbabu et al. 2012; Doiphode, 1985; Kapoor, et al. 2002; Rajan et al., 2011; Talwar, & Jhingran, 1991; Veeruraj et al. 2011; Venkataraman et al. 2012
	<i>Lagocephalus lagocephalus</i> (Linnaeus, 1758)	Andaman and Nicobar Islands,	2	Kapoor, et al. 2002; Rajan et al., 2011
	<i>Lagocephalus lunaris</i> (Bloch & Schneider, 1801)	Andaman and Nicobar Islands, Andhra Pradesh Chilka Lake, Mahanadi estuary (Orissa), Gopalpur-on-sea (West Bengal), Gujarat, Maharashtra, Tamil Nadu	9	Choudhury et al., 1982; Manna & Goswami, 1985; Rajan et al., 2011; Rao, 1995; Talwar, & Jhingran, 1991.
	<i>Lagocephalus sceleratus</i> (Gmelin, 1789)	Andaman and Nicobar Islands, Munambam, Vizhinjam (Kerala)	4	Rajan et al., 2011; Bineesh et al., 2014
	<i>Lagocephalus spadiceus</i> (Richardson, 1845)	Andaman and Nicobar Islands,	2	Rajan et al., 2011; Talwar, & Jhingran, 1991.



Fig. 1. Collection site.

and Jhingran (1991). The specimens were subsequently counted and a total of ten morphometric and meristic characters were taken with a Mitutoyo digital caliper to the nearest 0.01 mm (Table 2).

## RESULT

**Diagnostic:** Morphometric and meristic details of *L. inermis* (Fig. 2) are presented in Table 2. The total length of specimen was 196 mm with body depth 51.84 mm.

The fin formula comprised: D 14, A 12, P 16, C 9. All dorsal, anal and caudal fin rays branched; body depth 30,32% of SL, eye diameter 6,02% of SL. Head length measured 4,90 times in eye diameter. Standard length was 3,30 times in body depth and 3,39 times in head length.

**Description:** Body elongate with broad head and body. Dorsal part of body without prickles; belly covered with prickles. Greenish or dark grey above and silvery white below. This species is distinguished from other



**Fig. 2.** Specimen of *Lagocephalus inermis* (standard length 196 mm).

TABLE 2  
Morphometric and meristic details of *Lagocephalus inermis*  
(n=1), collected from Digha Mohona

Morphometric variables	Measurement (mm)
Total length (TL)	196
Standard length (SL)	171
Head length (HL)	50.51
Body depth (BD)	51.84
Eye diameter (ED)	10.30
Snout length (SnL)	25.48
Caudal fin length	22.41
Dorsal fin base length	17.44
Anal fin base length	12.48
Pectoral fin length	28.30
Relative characters:	
TL/HL	3.88
SL/HL	3.39
TL/BD	3.78
SL/BD	3.30
HL/ED	4.90
HL/SnL	1.98

*Lagocephalus* species by its black gill opening. Body and head dark grayish green above dorsal region. A silvery yellowish-white band running longitudinally along mid-lateral body from mouth to caudal fin base and ventral surface is milky white in colour. The gill opening black internally; peritoneum pale gray; caudal fin dark distally with white margin.

**Habitat:** *Lagocephalus inermis* (Temminck & Schlegel, 1850) is Epibenthic, Demersal, Brackish water, Marine and Oceanodromous. Found on the shelf edge.

**Remarks:** *Lagocephalus inermis* has close resemblance with the lunartail puffer species, *Lagocephalus lunaris* (Bloch & Schneider, 1801), reported from Indian waters having similar fin ray counts and Atlantic species *Lagocephalus laevigatus* (Linnaeus, 1766) which reaches southern Angola. Max length 85.0 cm SL male/ unsexed generally caught with trawls. However, it differs from *L. lunaris* by the absence of spinules on dorsal surface and presence of the black colouration of the gill opening. Not edible as flesh of fishes is believed to be poisonous but commonly used as aquarium fishes. This is the first record of the species outside its known geographical area suggesting its range extension to Bay of Bengal.

## DISCUSSION

Inadequate knowledge about abundance and distribution of species confines not only our understanding of the ecological and evaluative processes but also affect our capacity to use this information in conservation management plans (Maitland, 1995). *L. inermis* Temminck & Schlegel, described in 1850 in West Bengal coast has never been reported subsequently (Table 1), though many of the fish diversity studies carried out by several authors in West Bengal coast (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; Yennawar et al., 2013; Venkataraman et al., 2012). The distribution of *L. inermis* is scattered in the tropical Indian ocean to the South China Sea from South Africa to southern Japan and Algoa Bay and Western Pacific ocean. From Indian waters the species was reported earlier from Goa, Kerala (Neendakara & Sakthikulangara), Karnataka (Mangalore) states of the west coast; Andhra Pradesh, Tamil Nadu states of east coast and Andaman and Nicobar Islands. From Tamil Nadu coast the existence of the *L. inermis* was confirmed from coastal areas of Parangipettai by Veeruraj et al. (2011). Venkataraman et al. (2012) were reported the distribution of *L. inermis* from Andhra Pradesh of the east coast. Moreover there is no record of occurrence of this species on the north east coast of India. The present report suggests that the distribution of *L. inermis* is along the stretch of East Coast of India from West Bengal to Tamil Nadu.

In view of the above that we reported this species in West Bengal coast after a very long period therefore; our recent record of this species suggests the population of *L. inermis* to be in a precarious state which emphasized the fish distribution record of this species in West Bengal coast. From a taxonomic point of view, the genus *Lagocephalus* is also important while, only six species were documented in India. It is interesting to know that as the species has never reported at this coast, thus the current record revealed the possibilities due to climate change or habitat destruction. Additionally, our present findings unwrapped the possibility for new distribution records of *L. inermis* and other species of the genus.

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