



Short Communication

First occurrence of Oceanic Puffer, *Lagocephalus lagocephalus* (Linnaeus, 1758), from Odisha, North-Eastern coast of India

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Abstract

Present paper reports the occurrence of Oceanic puffer, *Lagocephalus lagocephalus* (Linnaeus, 1758) (Tetraodontiformes: Tetraodontidae), for the first time from north-eastern coast of India. Two specimens were collected from Paradip fish landing centre (Odisha), during sampling of commercial fishes at auction hall. Current report adds a new record to ichthyofaunal list of Odisha coast.

Keywords: Bay of Bengal, New Record, Paradip, Puffer Fish, Tetraodontidae

Introduction

The order Tetraodontiformes consists of 10 families and 439 valid species, out of which the family Tetraodontidae is most speciose with about 192 species worldwide (Fricke *et al.*, 2020a). In Indian waters the family Tetraodontidae is represented by 8 genera and 32 species (Gopi and Mishra, 2015). Hitherto, only 10 species belonging to six genera are reported from Odisha coast (Barman *et al.*, 2007). Nine species of the genus *Lagocephalus* Swainson, 1839 are valid worldwide (Fricke *et al.*, 2020b), of which only seven species are reported from Indian coast: *L. guentheri* Miranda Ribeiro 1915, *L. inermis* (Temminck and Schlegel 1850), *L. lagocephalus* (Linnaeus 1758), *L. lunaris* (Bloch and Schneider 1801), *L. sceleratus* (Gmelin 1789), *L. spadiceus* (Richardson 1845) and *L. suzensis* Clark and Gohar 1953 (Mishra *et al.*, 2018). Along Odisha coast, two species of this genus were reported (Mishra *et al.*, 2018), namely *L. lunaris* and *L. spadiceus*. The present

paper reports *L. lagocephalus* for the first time along northern part of east coast of India.

Materials and Methods

Two specimens were collected on 25.10.2019 and 07.11.2019, from trawl landings at Paradip fish landing centre, Odisha (20°17'25.90"N; 86°42'26.73"E). Specimens were photographed and subsequently preserved in 10% formaldehyde. Measurements were made by using digital calliper to the nearest 0.1 mm, and results were expressed in % of standard length (SL). Counts and measurements follow Dekker (1975) and the fins and nostril were examined under a digital stereo microscope (Leica, S9i). The specimens were identified as *Lagocephalus lagocephalus* (Linnaeus, 1758) following the key provided in Mishra *et al.*, (2018). The identified specimens were deposited in Estuarine Biology Regional Centre, Zoological Survey of India (EBRC/ZSI), Gopalpur-On-Sea.

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Results

Class ACTINOPTERYGII

Order TETRAODONTIFORMES

Family TETRAODONTIDAE

Genus *Lagocephalus* Swainson, 1839

Lagocephalus lagocephalus (Linnaeus 1758)

Oceanic puffer

1758. *Tetrodon lagocephalus* Linnaeus, *Syst. Nat.*, ed. 10: 332 (type-locality: India [Indian Ocean]).

2019. *Lagocephalus lagocephalus*: Burton and Lee, *Zookeys*, 887: 101.

Materials examined: EBRC/ZSI/ F11846., 1 ex, 285.0 mm SL, Paradip fish landing centre, Odisha, 5.ix.2019, S.R. Mohanty; EBRC/ZSI/ F11847, 1 ex, 220.0 mm SL, Paradip fish landing centre, Odisha, 7.x.2019, S.R. Mohanty.

Diagnostic Characters: Body slightly elongated and head blunt 32.2–35.0 % of standard length (SL). Nostril covered by a sac with two openings. Dorsal-fin rays 13; pectoral-fin rays 14 and anal-fin rays 12. Dorsal fin origin closer to caudal fin origin than that of the pectoral fin origin, pre-dorsal length 72.0–72.2 % of SL. Anal fin origin slightly behind the anus, pre-anal length 64.8–65 % of SL; pre-pectoral length, 33.3–35.5 % of SL. Eye moderate in size, 20.7 – 21.4 % of head length (HL); interorbital space 35.7–36.8 % of HL, distinctly less than snout. Snout short, its length 41.4–42.5 % of HL. Pectoral fin, 17.4–18.0 % of SL. Body depth at gill opening, 22.5–24.8 % of TL and body depth at anus, 15.6–18.0 % of TL. Least depth of caudal peduncle 33.2% of its length. Spinules on dorsal surface between eye and dorsal-fin absent, but present

on ventral side. Pelvic fin absent; upper lobe of caudal fin smaller than the lower lobe; dorsal- and anal-fin slightly falcate on posterior edge.

Colour: Distinct black spot on side near pectoral fins; lower third pectoral fins whitish (Figure 1). Dorsal, Pectoral and caudal-fin rays black.

Distribution: Widely distributed along the tropical and subtropical seas: Western Atlantic, Eastern Atlantic; Indian Ocean, Pacific oceans, Mediterranean Sea (Tortonese, 1986) and Adriatic Sea (Dulčić and Pallaoro, 2006). From Indian waters this species was reported from Lakshadweep, Andaman and Nicobar Islands and Andhra Pradesh coast (Jones and Kumaran, 1980; Hardy *et al.*, 2014; Sujatha and Padmavathi, 2015).

Discussion

Lagocephalus lagocephalus is a circumglobal species occurs in all tropical and temperate oceans and the Mediterranean Sea (Shipp, 2002). It is an oceanic and pelagic species, but enters estuaries and feeds on benthic invertebrates (Smith and Heemstra, 1986). It is a highly toxic species; even ~ 300 g of flesh at edible part is enough to kill a man (Alshawy *et al.*, 2019), thus causing a serious threat to human health. Puffer fishes destroy the habitat of native fishes, fishing net and lines, which is correlated with lesser fish catch (Eastmed, 2010). Due to migration and shipping operations such as ballast water exchange, *Lagocephalus* species have been occurring outside their native ranges (Mishra *et al.*, 2018). *Lagocephalus* spp. is cryptic, its taxonomy often difficult, this is further attributed to their migration and transportation through ballast



Figure 1. The oceanic puffer, *Lagocephalus lagocephalus* (Linnaeus, 1758) (EBRC/ZSI/ F11847) along Odisha coast.

waters (Mishra *et al.*, 2018). *Lagocephalus lagocephalus* was originally described from India, the type locality of which was mentioned as 'Habitat in India', without precise location (Linnaeus, 1758). However, in Linnean description it may probably refer to 'Indian Ocean'. This species was later reported from Laccadive Archipelago based on a single specimen caught at Agathi Island (Jones and Kumaran, 1964) and two specimens from Minicoy (Jones and Kumaran, 1980). It has also been reported from Vishakhapatnam, Andhra Pradesh (Sujatha and Padmavathi 2015). Hardy *et al.* (2014)

indicated its occurrence in Andaman Islands and Nicobar Islands. The present report forms its first distributional record from Odisha coast.

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