



Research Paper

Documentation of a Porcupinefish (Family: Diodontidae) *Cyclichthys orbicularis* (Bloch, 1785) from Tamil Nadu Coast.

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Abstract: The bird beak burrfish *Cyclichthys orbicularis* (Bloch, 1785) was collected from the fish landing centre during a survey tour as a part of the lesser known fauna of Cauvery River basin, Tamil Nadu, India during 2016 by SRC/ ZSI Survey team. The current species is identified by its unique colouration brown to grey with blotches and clusters of black colored spots on backside. Fish of the genus *Cyclichthys* contains three-rooted rigid spines (actually modified scales) are distributed over their bodies, and beak-like jaws, which are used to crush their hard-shelled prey such as molluscans and crustaceans). *Cyclichthys orbicularis* (Bloch, 1785) commonly known as bird beak burrfish is known from the Indo-West Pacific region from Red Sea to the Philippines, north to southern Japan, south to Australia and New Caledonia.

Keywords: Cauvery River basin, bird beak burrfish, Tamil Nadu.

Introduction:

The members of the family Diodontidae are commonly known as Porcupinefishes are medium-to-large in size. They are also known as blowfishes and, sometimes, balloon fishes and globefishes and collectively known as pufferfishes. The family includes about 18 species.

Classification:

Kingdom: Animalia Linnaeus, 1758

Phylum: Chordata Haeckel, 1874

Class: Actinopterygii Klein, 1885 (Ray-finned fishes)

Order: Tetraodontiformes L. S. Berg, 1940

Family: Diodontidae Bonaparte, 1838

Genus: *Cyclichthys* Kaup, 1855

Species: *C. orbicularis* (Bloch, 1785)

Synonyms:

1985. *Chilomycterus orbicularis* Bloch.

Naturgeschichte der ausländischen Fische. Berlin. v. 1: i-viii + 1-136, Pls. 109-144.

2001. *Diodon orbicularis* (Bloch.) Bianchi.

The living marine resources of the Western Central Pacific. Vol. 6. Bony fishes part 4

(Labridae to Latimeriidae), estuarine crocodiles. FAO, Rome.

2000. *Cylichthys orbicularis* (Bloch), Randall and Lim. Raffles Bull. Zool. Suppl. (8):569-667.

2026. *Cylichthys orbicularis* (Bloch), Froese and Pauly World Register of Marine Species at: <https://www.marinespecies.org/aphia>.

Materials and Methods:

The Coromandal Coast situated in the Nagapattinam district of Tamil Nadu and lies in the apex of Cauvery River delta and is covering an area of 21.47Km² protected area along the Palk Strait where it meets the Bay of Bengal. The Cauvery estuarine

system is a part of the Cauvery river basin and its deltaic region begins from the Grand Anicut near Trichinapally in Tamilnadu. The River Cauvery bifurcates in to two large branches, the 'Kollidam (Coleroon)' and "Cauvery" at Grand Anicut (a dam near Trichinapally). Kollidam, the main distributory discharges in to Bay of Bengal at Pazhaiyar/Palaiyar near Mahendrapally in the Nagapattinam district of Tamilnadu. The Cauvery River before opening in to Bay of Bengal, branches off into many smaller branches like Arasalar, Vennar, Vettar, Tirumulairaja, Adaparu, Upanaru, Korai etc. After the Anicut, the river flows in a flat plain with gentle slope from west to east.

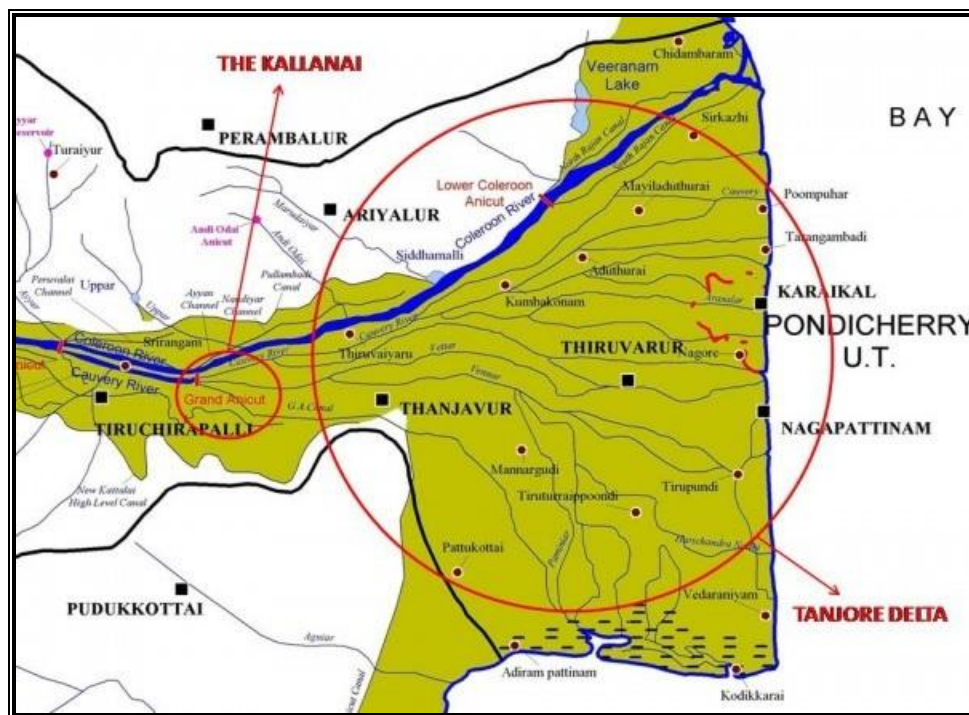


Fig. 1. Map of Cauvery River basin in Tamil Nadu (Source: Google Map)

The fish specimens were collected by the different survey teams of SRC from the year 2015 to 2018. The collected specimen was preserved in 10% formaldehyde and later

subjected to taxonomic studies by referring standard references viz.. Day (1878, 1889), Jayaram (1981, 2010), Menon (1999), Talwar and Jhingran (1991). Classification

was based on Eschmeyer (2003), Nelson (2006). The identified fish specimens were deposited in the National Zoological

Collections of Southern Regional Centre, Zoological Survey of India, Chennai.



Fig-1



Fig-2

Fig-1 & 2: A view of fish landing centre at at Pazhayar, Nagapattinam dist, Tamil Nadu.



Fig-3



Fig-4

Fig-3 & 4: A view of barmouth at Pazhayar, Nagapattinam dist, Tamil Nadu.



Fig-5: *Cyclichthys orbicularis* (Bloch, 1785)

MATERIAL EXAMINED: F- 10024., 1 ex., **Date of collection:** 02-iv-2016, Pazhayar, Nagapattinam dist, coll. J. Thilak & Pty (Purchased from Fisherman). **Co-ordinates of the locality:** 11°17' 22.8762'' N, 79° 49' 41.0694''E. Alt: 3m. (Pazhaiyar is situated near the mouth area of river kollidam, a main distributory of river Cauvery and is 35km, from Chidambaram town)

DESCRIPTION:

Total length: 28.0 cm TL. Body globular covered with short spines, longest on the sides and behind the pectoral fins, numerous blue or brown spots. Jaws without median suture. *Cyclichthys orbicularis* is commonly known as the bird beak burrfish or orbicular burrfish. It has a small mouth. Head large, broad and blunt. Eyes widely separated, located high on head. Dorsal and anal fins inserted far posteriorly. No fin spines; pelvic fins absent. Caudal fin truncate. The body of this round fish is covered in short spines, each of which has a triangular base. All of the spines on the top of the head have three subdermal roots. It is pale brown above and white below and has round brown spots scattered across the body, especially towards the tail. The fins are translucent.

DEFENSIVE MECHANISMS:

They have the ability to inflate their bodies by swallowing water or air, thereby becoming rounder. This increase in size (almost double vertically) reduces the range of potential predators to those with much larger mouths. A second defense mechanism is provided by the sharp spines, which radiate outwards when the fish is inflated.

IUCN RED LIST STATUS (Ref. 130435: Version 2025-2 (Global))

Least Concern (LC) ; Date assessed: 15 August 2023.

THREAT TO HUMANS:

Harmless.

HABITAT:

Inhabit clear protected reefs with sponge and algal habitats.

FISHERY INFORMATION:

Subsistence Fisheries; Gamefish.

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