

First record of *Trachicephalus uranoscopus* (Bloch and Schneider, 1801) from Chilika lagoon, Odisha coast of India

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The present study deals with the first record of *Trachicephalus uranoscopus* and its morphological descriptions from Chilika lagoon, Odisha coast of India. The species (*T. uranoscopus*) as well as the family (Synanceiidae) are new additions to the ichthyofaunal diversity of the lagoon.

[**Keywords:** *Trachicephalus uranoscopus*; Chilika; Odisha coast]

Introduction

Family Synanceiidae (Order: Scorpaeniformes) consisting of 36 species belonging to 9 genera were reported globally¹. Out of which, 3 species from 3 genera i.e. *Trachicephalus uranoscopus* (Bloch and Schneider, 1801), *Choridactylus multibarbus* (Richardson, 1848) and *Minous monodactylus* (Bloch and Schneider, 1801) were reported from Indian waters². The distribution of star-gazing stonefish, *T. uranoscopus* is restricted to India, China, Thailand, Malaysia, Indonesia, Hong Kong, Singapore, and Vietnam¹. It is a tropical species and inhabits in brackish to marine environment within a depth of 2-25 m³. In India, the species was reported from the peninsular region along Madras coast⁴, Pondicherry and Karaikal coast^{2,5}, and Andaman Islands^{6,7,8}.

Chilika lagoon, a designated Ramsar site of

belonging to 207 genera in 88 families of 23 orders⁹, is situated in the east coast of India. The order Scorpaeniformes has contributed significantly to the ichthyofaunal diversity of the lagoon with five species, i.e., *Tetraroge niger* (Tetrarogidae); *Pterois radiate* (Scorpaenidae); *Cociella crocodiles*, *Kumococius rodericensis*, and *Platycephalus indicus* (Platycephalidae)^{9,10}. However, no earlier report is available on the occurrence species of the family Synanceiidae from the lagoon. Hence, the present record on the occurrence of *T. uranoscopus* (Synanceiidae) is the first report from Chilika lagoon.

Materials and Methods

A single live specimen of *T. uranoscopus* (Fig. 1) was collected by a screen barrier net (locally called *Khanda*) near the Satapada area (85°435' E and 19°666'N) on 9 September 2015. Immediately after measurements were taken. The specimen was preserved in 10% formalin and brought to the laboratory for further study. The hydro-biological characteristics of the collection site were also recorded by following APHA¹¹. The



Fig. 1 — *Trachicephalus uranoscopus* (CDA/257/2015) of total length 94.48 mm, weight 15.86 g recorded from Chilika

water lagoon of India, lies between latitudes 19° 20' and 19° 54' North and longitude 85° 05' and 85° 38' East. In the eastern part, the main lagoon is connected with the Bay of Bengal through an artificial mouth opening which is about 12 km distance from the main lagoon, and at the southern end, a 14 km long channel (called Palur canal) connects to the sea through the Rushikulya river mouth. Both these channels act as migratory route as well as connecting paths for a number of fishes to move between sea and the lagoon. Chilika lagoon, one of the most diverse aquatic ecosystems providing home to 317 finfish species

specimen was identified and confirmed by following earlier descriptions^{1,12}. The morphometric measurements of the specimen were recorded by a digital caliper to the nearest 0.01 mm. The meristic characters were studied. The specimen (CDA/257/2015) was deposited in the fish museum of Wetland Research and Training Center (of Chilika Development Authority), Barkul, Khurda, Odisha.

Results and Discussion

Taxonomy

Order: Scorpaeniformes
 Sub-order: Scorpaenoidei
 Family: Synanceiidae
 Sub-family: Synanceiinae
 Type: *Trachicephalus uranoscopus* (Bloch & Schneider, 1801)

Description

The total length (TL) and weight of the specimen were recorded as 94.48 mm and of 15.86 g, respectively. The species is characterized by wide head, covered with bony ridges having numerous blunt points; possess very small eyes in the dorsal position (Fig. 1). The lower jaw is longer than the upper. Spines and rays in the fins are enclosed in the skin. Dorsal fin has 10 spines and 14 soft rays. Pectoral fin is pointed with 14 spines and a little longer than the head length. Ventral fin is attached along its entire inner edge to the abdomen with one spine and five soft rays. Anal fin has two spines and 15 soft rays. Caudal fin is cut square, with a white edge. Scales are absent. Body colour is brownish, with numerous white dots. The above characters were matching with the species, *Trachicephalus uranoscopus* by Day¹².

Remarks

The species was synonymised earlier as *Polycaulus uranoscopus* (Bloch & Schneider, 1801), *Synanceia uranoscopa* Bloch & Schneider, 1801. The morphometric measurements along with their respective body proportions to the total length are summarized in Table 1.

The stonefish is the most venomous fish in the world. The fish bears dorsal spines which having venom sacs. A large dose can be fatal to humans^{13,14}. The species mainly inhabits in salt waters¹⁵. However, Monkolprasit et al. reported the distribution of the species in all environments i.e. freshwater to marine¹⁶.

The fish also inhabits shallow muddy/sandy bottoms in estuaries and coastal waters³. The present specimen was recorded from the brackish water environment having salinity of 14.83 ppt, similar to the earlier reports¹⁶. The basic profile of the habitat parameters of the collection site was also studied, as summarized in Table 2. The observation on the physico-chemical parameters of the collection site shows that the species can live in such environment.

It is presumed that the fish might have migrated from the Bay of Bengal to the lagoon through the

Table 1 — Morphometric measurements of *Trachicephalus uranoscopus* recorded from Chilika (TL: Total length)

Morphometric characteristics	Values (mm)	% TL
Standard length	77.03	81.53
Head length	17.64	18.67
Eye diameter	2.26	2.39
Mouth width	10.41	11.02
Pre-dorsal	15.15	16.04
First dorsal spine length	5.16	5.46
Dorsal fin length	60.79	64.34
Length of base of dorsal fin	59.27	62.73
Body depth	20.02	21.19
Depth of caudal peduncle	3.92	4.15
Pre-pectoral length	12.16	12.87
Pre-pelvic length	16.85	17.83
Pre-anal length	36.67	38.81
Pre-orbital length	7.63	8.08

Table 2 — Habitat parameters at the specimen collection site

Parameters	Estimates	
	Water	
Water depth		217 cm
Transparency		68 cm
Water temperature		31.2°C
pH		8.44
Dissolved Oxygen		5.8 ppm
Specific Conductivity		17.50 mS/cm
Turbidity		12.9 NTU
Salinity		14.831 ppt
Chloride		8.2 ppt
Phosphate		0.0184 ppm
Silicate		7.2105 ppm
Hardness		2600 ppm
	Soil	
Sand		54%
Clay		33%
Silt		13%
pH		8.03

connecting channel (outer channel) and dwell near Satapada area (collection site), which is about 15 km far from the mouth, connecting to the sea. Although the only specimen has been recorded presently; the abundance and distribution of the species in the lagoon needs to be investigated further. The star-gazing stone fish, *T. uranoscopus* is the first record under the family Synanceiidae from Chilika. Hence, the species *T. uranoscopus* and the family Synanceiidae are both new additions to the Ichthyofaunal diversity of the Chilika lagoon as well as Odisha coast.

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