

OSTICHTHYS ACANTHORHINUS RANDALL, SHIMIZU & YAMAKAWA, 1982 A FIRST RECORD OF SPINY SNOUT SQUIRREL FISH (BERYCIFORMES: HOLOCENTRIDAE) FROM VISAKHAPATNAM, MIDDLE EAST COAST OF INDIA

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ABSTRACT : The Spiny snout squirrelfish species *Ostichthys acanthorhinus* Randall, Shimizu & Yamakawa, 1982 was recorded for the first time along the Visakhapatnam coastal waters, Middle East Coast of India. Two specimens were collected from deepwater trawl catches during the period February 2013. Present study deals with detail description of the species given with illustration.

Key words : *Ostichthys acanthorhinus* Spiny snout squirrelfish, first record, Visakhapatnam, Middle East Coast of India.

INTRODUCTION

Fishes of the family Holocentridae are brilliantly colored shallow water and seaward reef fishes, they occur on reefs, tending to hide in caves or beneath ledges by day, coming out to forage for food at night. The squirrelfishes prey mainly on benthic crustaceans; whereas the soldier fishes feed on the larger animals of the zooplankton, such as crabs larvae, often well above the bottom. The family is divisible into two distinctive subfamilies based on the morphologically, the Holocentrinae (squirrelfishes) with two Indo-Pacific genera (*Myripristis*, *Plectrypops*, *Pristilepis* and *Ostichthys*) the species of the last two genera occur in deep water (Nelson, 1955). Randall *et al* (1982) refers to *Ostichthys acanthorhinus* as the "Spiny snout squirrelfish" which considering the projecting spine beyond median upper lip. The most distinctive character of the genus *Ostichthys* is premaxillary groove is broad and V-shaped; anterior end of each nasal bone with a sharp directed forward spine projecting to or beyond median upper lip (Randall *et al*, 1982; Randall and Heemstra, 1986). Squirrelfishes and soldierfishes (Holocentridae) are among the most conspicuous species in the nocturnal fish community (Greenfield, 2003 and Squirrelfishes and Soldierfishes have been important organisms for understanding the evolution of dim light vision in vertebrates (Yokoyama and Takenaka, 2004; Alex Dornburg *et al*, 2012).

MATERIALS AND METHODS

The continental shelf of Indian EEZ extending up to 200 m depth is a rich abode a variety of demersal fin

finfish resources contributing substantially to the total marine fish production in the country. Off late at Visakhapatnam fishing boats extend operation of trawl nets deeper into the sea (even up to 200-300 m) bringing in more varieties of demersal fishes (especially deep water fish species). During a routine field collection for (squirrel fishes) at Visakhapatnam fisheries harbor this species was represented in the trawl catches with deep water species Priacanthids, scorpion fishes, goat fishes, Nemipterids and Triglids. This species was caught by trawlers operating at depths beyond 60 m and was identified as *Ostichthys acanthorhinus* Randall, Shimizu & Yamakawa, 1982 first report of Spiny snout squirrelfish hitherto unknown from Visakhapatnam coastal waters. A specimens were collected from Visakhapatnam coast (Lat 17° 44 N; Long 83° 23E). In the present study, three fish specimens were examined. The specimens were measured to the nearest mm TL using vernier calipers. The specimens was identified, measured, and preserved in 10% formalin and its taxonomy was confirmed up to species level using various keys (Randall *et al*, 1982; Greenfield, 2003; Nelson, 2006 and Froese and Pauly, 2015). The specimens were deposited in the Department of Marine Living Resources, Andhra University, Visakhapatnam, and Andhra Pradesh, India.

RESULTS AND DISCUSSION

Systematic account

Order: Beryciformes

Family: Holocentridae

Genus: *Ostichthys*



Fig. 1 : *Ostichthys acanthorhinus* Randall, Shimizu & Yamakawa, 1982.

Ostichthys acanthorhinus Randall, Shimizu & Yamakawa, 1982.

Description

Dorsal fin XII, 13; anal fin IV, 11; pectoral, 14-15; caudal, 17-18; lateral line scales, 30-31; Pored scales, 23-27; Gill rakers, 9+1+16= 26; Ltr 4+1+8

Body oval, slightly compressed; Upper profile ascending evenly, flat along back and descending steeply below soft dorsal; lower profile similar but less convex; maximum depth at dorsal origin. Mouth moderately large, oblique; lower jaw slightly projecting; maxillary reaching beyond a vertical posterior margin of pupil. Eyes moderately, slightly equal to snout; snout moderately short; nasal almost meeting over premaxillary process and ending anteriorly in several spines, some of which overhang upper lip; Teeth in villiform bands in jaws; bands broader and thicker anteriorly, symphysis of upper jaw with a broad toothless gap (except for a very small round interior medial patch) into which the anterior part of lower jaw fits; a 'V' shaped patch of small teeth on vomers, narrow band of teeth on palatines; minute teeth on roof and floor of pharynx; tongue edentate; interorbital with two ridges; preorbital strongly and irregularly dentate continuous with postorbitals; Preopercular edge serrate, with short, snout spine on corner; rear edge of opercle serrate, with prominent spine on dorso-posterior edge; both limbs of preoperculum strongly toothed and with a short acute, somewhat long spine at angle, it's not reaching gill opening; opercles crossed by ridges ending in marginal spines; gill rakers short.

Origin of dorsal fin above upper base of pectoral fins; membranes of first dorsal incised; spine striated; third spine of dorsal longest and longer than longest dorsal ray,

Table 1 : Morphometric data of *Ostichthys acanthorhinus* Randall, Shimizu & Yamakawa, 1982 represented in the catches off Visakhapatnam.

Species	<i>O. acanthorhinus</i> Randall, Shimizu & Yamakawa (1982) n = 3, 71-87 TL
As percentage of standard length	
Total length	126.78-127.94
Body depth	47.54 – 50
Head length	45.58-48.21
Pre dorsal distance	45.90- 48.21
Pre pectoral distance	48.21 – 50.81
Pre pelvic distance	44.11- 47.54
Pre anal distance	73.52 – 74.16
Dorsal fin base	53.57 -57.37
Anal fin base	20.58 – 21.42
Longest dorsal height	23.52 – 24.59
Soft dorsal height	20.58 -19.67
Anal spine height	16.17 -17.85
Soft anal height	17.64-18.03
Pelvic spine height	17.85 -19.67
Soft pelvic fin length	18.85-20.58
As percentage of head length	
Head depth	90.32-92.85
Head width	48.14-51.61
Eye diameter	25.80-29.62
Pre orbital distance	14.81-19.35
Post orbital distance	44.44-48.38
Upper jaw length	51.85-58.06
Lower jaw length	40.74-45.16
Maxilla width	22.22-25
Snout length	14.90-14.81
Caudal peduncle depth	8.82 – 9.83
Inter orbital width	18.51-21.42

succeeding spines gradually decreases in length; last dorsal spine little shorter than penultimate spine and joined by membrane to first dorsal ray; pectoral fin slightly rounded, pectoral fins slightly longer than pelvics; fourth to fifth pectoral fin longest; anal fin with four spines; first anal spine small; third spine longest and stout; third anal spine less than half of the length of anal ray; caudal fin slightly rounded.

Body covered with robust ctenoid scales; scales dorsally on head extending forward slightly anterior to a vertical at upper end of preopercle; preopercle with 4 diagonal rows of scales; base of opercle with a single row of scales; spinous portion of dorsal fin without scales; anal fin and soft portion of dorsal fin with a basal scaly sheath (scales not adhering to fins); caudal and pectoral fins with small scales basally; no scales in axil of pectoral fins.

Table 2 : Meristic characters of *Ostichthys acanthorhinus* Randall, Shimizu & Yamakawa, 1982 as compiled by different authors.

Authors	D	A	P	C	V	Gill rakers	LLS	LTR
Randall <i>et al</i> (1982)	XII,14	IV,11	16-17	17	I,7	10-12+16-18	28-29	3/1/7
Present data (2015)	XII,14	IV,11-12	15-16	17	I, 7	8+1+16	28-29	4/1/8

The dorsal surface of the body is reddish in color extending up to caudal peduncle. Mid body portion is pinkish pale in color with golden sheen on color body lines. The color of the back and upper sides was reddish with golden reflection. Body having a small light spot on each scale, thus forming longitudinal rows; reddish brown with traces of eight to nine broad orange red stripes along scale rows; light pink to creamy white near the belly region. The lower sides, belly and breast were pinkish with shining white. The snout and top of the head were light red, with the upper portion of the maxilla; opercular region is golden and pinkish in color with white shiny. The dorsal spines were light pink with white shining and interspinous membranes were white after the spine. The soft dorsal fin rays were pale pinkish; the outer caudal fin rays were light pink. The anal soft rays were light pink. Pectoral fin rays pinkish red. Pelvic fin spine and fin rays light red.

Geographical distribution

Gulf of Oman, Kerala (West coast of India) and Indonesia (Randall *et al*, 1982).

DISCUSSION

Ostichthys acanthorhinus distinctly differs from its congeners in the occurrence of a prominent spine at anterior end of each nasal bone. It is definitely most closely related to the allopatric *O. japonica*, sharing with it such characters as 3^{1/2} scales above the lateral line and a short snout. The distinctive meristic characters and descriptions well agree with those given by (Randall *et al*, 1982) and Froese and Pauly (2015) except for the number of gill rakers in the lower arm (Table 2). Morphometric data of *Ostichthys acanthorhinus* represented in the deeper water catches off Visakhapatnam is given in Table 2.

Specimens of *Ostichthys acanthorhinus* were taken by trawling at the Visakhapatnam coastal waters, Bay of Bengal, India, within the depth range 60- 260m. One specimen was taken off the Kerala coast of India in 330-336 m from the M.F.V. Kalava (Randall *et al*, 1982). We identify these as *O. acanthorhinus* and thus extend the range of this species to North east coast of India. This is a deep water species caught with deepwater scorpionfishes, goat fishes, piracanthids especially

demersal fish resources. Muddula Krishna *et al* (2015), Govinda Rao and Muddula Krishna (2015), Muddula Krishna and Govinda Rao (2015) many new and first records reported from Visakhapatnam waters.

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