

***Pterois paucispinula* Matsunuma et Motomura, 2015 (Actinopteri Scorpaenidae) a new distributional record from Indian waters**

Muddula Krishna Naranji*, Govinda Rao Velamala & Kandula Sujatha

Department of Marine Living Resources, Andhra University, Visakhapatnam - 530003, Andhra Pradesh, India

*Corresponding author, e-mail: krishna.muddu217@gmail.com

ABSTRACT

Pterois paucispinula Matsunuma et Motomura, 2015 - a turkey lionfish belonging to the family Scorpaenidae (Actinopteri) with a worldwide distribution - is reported from Indian waters for the first time, its earlier record being from western Pacific Ocean. This species, collected during April 2016, was found to be one of the rare scorpaenids from India. This species is distinguished by its meristic and morphometric characters such as dorsal spines and rays, black blotches on the pectoral fin membrane, head depth, post orbital distance, lateral line scale rows; percentage of preorbital distance difference.

KEY WORDS

New record; *Pterois paucispinula*; Indian waters.

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INTRODUCTION

The fishes of the genus *Pterois* Oken, 1817 (Actinopteri Scorpaenidae) commonly known as lionfishes or turkeyfishes, are well known for spectacular appearance and possession of dangerous venom associated with the dorsal, anal and pelvic spines; the parietal spine of males not elongated, and the mandible lacking a spine or ridge (Allen & Eschmeyer, 1973).

Matsunuma & Motomura (2015) described a new species of scorpaenid, *P. paucispinula* Matsunuma et Motomura, 2015 from Japan, the western Pacific Ocean. In addition, *P. volitans* (Linnaeus, 1758) has recently become established on the east coast of The United States due to aquarium releases (Whitfield et al., 2002). *Pterois* is distributed in the Indo-West Pacific where it ranges from the east coast of Africa east to New Caledonia and Southern Japan (Smith, 1957); it occurs

throughout the tropical Indo-west and central Pacific region (Poss, 1999). *Pterois* are bright coloured fish with bars on head and body, commonly called as zebrafish, lionfish or turkeyfish. Usually found on reefs, may be mostly nocturnal, remaining in caves and crevices during day. Is a rare inhabitant of rocky bottoms of deep offshore reefs and normally found on soft-bottom or muddy substrates with rich rubble ridges amongst rich invertebrate growth, especially sponges; may grow up to 200 mm SL (Froese & Pauly, 2014).

The present paper reports a new record of *Pterois paucispinula* (Local Telugu name “Kodipunju”) from Indian waters.

MATERIAL AND METHODS

Four specimens of *P. paucispinula* were collected from Visakhapatnam coastal waters, East Coast

of India during the study period 2011–2015. Specimens were examined carefully and identified as *P. paucispinula* hitherto not reported so far. The colour of the specimens in the samples was noted in fresh condition. Morphometric and meristic data were taken for fresh specimens. Measurements are reported as in Hubbs & Lagler (1958); terminology of head spines follows Eschmeyer (1969). The specimens were preserved in 5% formalin and deposited in the museum of the department of marine living resources, Andhra University, Visakhapatnam, India.

ACRONYMS. TL = Total length; SL = Standard length.

RESULTS

Pterois paucispinula Matsunuma et Motomura, 2015 (Figs. 1, 2) - Broadbarred firefish

EXAMINED MATERIAL. Visakhapatnam coastal waters, East Coast of India (17°44'N, Long 83° 23'E), four specimens, 2011–2015.

DESCRIPTION. These four specimens measured from 142–156 mm TL.

Meristic characters: dorsal fin rays XII–XIII, 10–11; anal fin rays III, 6–7; caudal fin rays 13–14; ventral fin rays I, 5; pectoral fin rays 17–19; lateral line scales 40–48; lateral pored scales 21–30; lateral transverse scales 6–10/13–16; gill rakers 4–5+1+8–9 = 13–15; pyloric caeca 3–4; vertebrae 24.

Body oblong, slightly compressed; dorsal profile of head with deep slope from nape to snout; maximum depth at dorsal origin; inter orbital space deeply subangular, with median groove; occiput flat; eyes of moderate size with supraorbital ridges. Profile of head large. Dorsal profile of snout relatively steep. Mouth small, slightly oblique; jaws sub equal, lower jaw slightly projecting upward; posterior margin of maxilla extending beyond orbit. Villiform teeth in bands in each jaw, small teeth in 4–5 rows forming blunt V-shape patch on vomer; no palatine teeth; tongue free, rounded; nostrils close to each other, anterior nostril slightly tubular with fringed lanceolate flap, posterior one entire, and round, situated at anterior rim of eye. Gill opening wide; gill membrane free from isthmus. Pseudobranchiae present. Gill rakers long in middle,

reduced to spiny knobs at either end. Preopercular flap end pointed; its reaching near the base of pectoral one, operculum slightly rounded and broad.

Dorsal and pelvic are in same line whereas origin of pectoral slightly anterior vertically. Dorsal spines strong and well developed, one (the first) short, seven dorsal spines long, thirteen short; membrane between spines incised, edge of dorsal spines soft and rounded; third anal spine strong and long; rays divided soft and rounded; pectoral spines

	Matsunuma & Motomura, 2015	
	Min-Max	$\bar{X} \pm S.D$
As percentage of standard length		
Total length	123.86-42.22	133.51±4.05
Body depth	34.48-40.01	37.35±1.27
Head length	40.81-49.27	44.47±2.26
Pre dorsal distance	32.46-42.59	36.23±2.33
Pre pectoral distance	35.34-44.73	39.62±2.77
Pre pelvic distance	33.62-43.54	37.38±2.76
Pre anal distance	67.24-77.77	71.00±2.82
Dorsal fin base	57.75-64.77	61.95±2.08
Anal fin base	14.94-19.13	16.76±1.16
Dorsal spine height	37.6-47.82	41.91±1.99
Soft dorsal height	21.11-28.8	24.62±1.99
Pectoral length	59.18-68.37	65.24±2.86
Pelvic spine height	14.06-18.51	16.94 ±1.03
Soft pelvic length	20.77-29.62	25.30±1.63
Anal spine height	14.06-17.34	15.68±0.87
Soft anal height	20.77-29.62	25.30±1.63
As percentage of head length		
Head depth	67.64-76.92	70.70±2.31
Head width	35.29-45.00	41.34±2.78
Eye diameter	17.94-26.78	23.26±2.77
Pre orbital distance	18.75-26.92	23.07±2.76
Post orbital distance	36.06-45.83	41.60±3.21
Inter orbital	17.24-23.68	20.48±1.84
Upper jaw length	34.04-44.11	41.58±2.35
Lower jaw length	27.65-37.93	35.13±2.20
Maxillary width	17.02-22.41	19.67±1.41
Snout length	17.94-25.86	22.47±2.42
Caudalpeduncle depth	8.18-15.90	10.81±1.41

Table 1. Morphometric data of species of *Pterois paucispinula* represented in the catches of Visakhapatnam.

slightly longer than head, elongated reaching near the base of caudal fin or beyond the caudal base; pelvic spines shorter than pectorals, reaching anal base, caudal fin rays simple; round.

Head moderately spiny; lachrymal spine stellate with five spines; suborbital ridge with five blunt spines. Preopercle margin with three blunt spines; opercle with a single flat spine; supplemental preopercular spine short; cleithral spine blunt; supracleithral spine small; nasal, preocular, supraocular, postocular, postfrontal, tympanic, numerous sphenotic, parietal and nuchal spines fused to form a ridge; pterotic, posttemporal, humeral spinous ridges present. Single spine present behind each nostril. Fleshy filaments along hind margin of opercle; filaments present on snout above eye and a flap at anterior nostril. Supraorbital tentacle with a black lateral flaps. Posterior nostril at front eye, without rim. Ctenoid scales covering preopercle, suborbital area, cheek, suprapostorbital region between tympanic and sphenotic spine bases, occipital region and anterodorsal portion of opercle. Dorsal surface of postocular and frontal portion of preocular with mostly cycloid scales. Other regions of head covered with cycloid scales. Anterodorsal portion of body mostly above lateral line and anterior to level of last dorsal fin spine base, with ctenoid scales. Soft rayed portion of dorsal and anal fins, pectoral fin and caudal fin bases with small cycloid basal scales.

Colour: body and head slightly pinkish red brown with broad vertical bars, margins white with numerous narrow dark cross bars of varying width; interspace light pinkish; a poorly defined red dark band on snout reaching from anteroventral portion of pupil to anteroventral margin of lacrimal. A poorly defined dark red band with narrow white margin extending from below eye, across postero-dorsal corner of maxilla to posteroventral margin of preopercle. A relatively broad reddish black band with narrow white margin from supraocular tentacle base, obliquely crossing eye and reaching posterior margin of preopercle; indistinct connection with a large black blotch present on subopercle. In nape three bands present; first band reddish black, just behind eye, at level between coronal spines; second band present at parietal; reaching central posterior margin of opercle at level of upper margin of pectoral fin base; third band present in between spines on nuchal spines; light reddish brown numerous



Figure 1. *Pterois paucispinula* 152 mm, TL.

Figure 2. Figure showing inner side of pectoral fin.

bands on body sides; narrow bands upturned between each relatively broad band running transverse and oblique in anterior and posterior portion of trunk region. Above base of pectoral fin there is a moderately large black blotch, mostly behind pectoral fin, with a small white spot present on inner. Dorsal and anal fin membrane translucent, spines slightly white; orbital tentacle alternating with white and black bands. Pelvic fin membrane dark reddish, becoming gradually blackish toward base; rays creamy-white. Caudal-fin membrane translucent with small black spots on ray; numerous small white spots on soft rays marginally between each black spot; soft vertical fins with small dark spots. Pectorals typically with large dark spots on basal membrane and a white spot in axil above and one below. Pelvics with basal dark blotches. Basal half of the pectoral rays pinkish.

DISCUSSION

The taxonomy of *P. paucispinula* was recently revised by Matsunuma & Motomura (2015). These authors stated that *P. paucispinula* show similarity in various morphological characters with other species of the group but certain morphological char-

acters make it different from the group like the width of the interorbital space, which is not that much as great as observed in other species. Major distinguishing characters from other species of this genus include: pectoral rays ending before caudal base, supraorbital tentacle barred with black and white, margin of tips white; caudal peduncle with 2 or 3 vertical to oblique narrow dark bars; three narrow dark bars in white area between wide dark bars; soft dorsal and anal fins and caudal fin barred. *Pterois paucispinula* differs from similarly sized *P. mombosae* (Smith, 1957) in having a lesser body depth at the anal origin, head width, post orbital length, and caudal peduncle depth, in addition to a slightly higher number of scale rows below the lateral line, pectoral fin rays.

Previous taxonomic works (Smith 1957; De Beaufort & Briggs, 1962) recognize four wide ranging species from the Indo-Pacific including *P. antennata* (Bloch, 1787), *P. radiata* Cuvier in Cuvier et Valenciennes, 1829, *P. russelii* Bennett, 1831 and *P. volitans*. Smith (1957) noted that its nearest relative is *Pterois sphex* Jordan et Evermann, 1903 known only from Honolulu. According to Smith (1957) *P. mombosae* can be distinguished from *P. sphex* by having larger scales, fewer above lateral line, by the scaly interorbital as well as markedly shorter dorsal spines, lower than the body, while the pectoral reaches the caudal base. (Eschmeyer & Randall, 1975) described *P. sphex* based on 13 specimens from Hawaiian Islands. In addition to the differences given by Smith (1957), *P. mombosae* has higher pectoral count (18–19 vs 15–16) and it lacks coronal spines.

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