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Note

New distributional record of *Myripristis chryseres* Jordan & Evermann, 1903 (Actinopterygii: Holocentriformes: Holocentridae) in Indian waters

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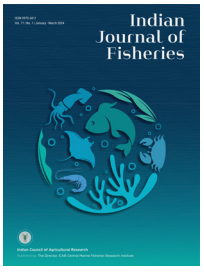

Abstract

A single unsexed specimen of the yellowfin soldierfish *Myripristis chryseres* Jordan & Evermann, 1903, was obtained from the landings at Annankovil Fish Landing Centre, Parangipettai on the south-east coast of India. This represents the first distributional record of the species from Indian waters. The specimen was caught in hook and line fishing at >50 m depth. Radiographic X-ray images of the specimen are presented, and vertebrae counts, distribution, and range extension in the Bay of Bengal are discussed in detail. This report contributes to further addition of Myripristinae fauna in Indian waters.

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The family Holocentridae comprises two subfamilies, *viz*. *Myripristinae* (soldierfishes) and *Holocentrinae* (squirrelfishes), which are differentiated by the morphology of the swim bladder and auditory bulla (Nelson, 1955; Dornburg *et al*. 2012). The subfamily *Myripristinae* comprises 48 valid species across five genera: *Corniger* (Agassiz, 1831), *Pristilepis* (Randall *et al*. 1982), *Plectrypops* (Gill, 1862), *Ostichthys* and *Myripristis* (Cuvier, 1829). In recent decades, five new species within the subfamily *Myripristinae* have been described globally (Fricke *et al*., 2026). At present, nine species of soldierfishes are documented from Indian waters: *Myripristis adusta, M. berndti, M. botche, M. hexagona, M. murdjan, M. violacea, M. seychellensis, M. formosa*, and *M. greenfieldi* (Randall and Greenfield, 1996; Nair and Dineshkumar, 2016). *Myripristis chryseres* Jordan & Evermann, 1903, commonly known as the yellowfin soldier fish, owing to its dense yellow fins compared with other species in the genus, is a large sized and sporadically distributed species (Randall and Gueze, 1981; Easton *et al*. 2018). This genus feeds on larger zooplankton and typically inhabits seamounts, rocky substrates, and coral reef zones at depths ranging from 30 to 350 m (Randall *et al*., 2005; Khalaf and Zajonz, 2007; Sandin and Williams, 2010; Allen and Erdmann, 2012; Easton *et al*. 2018). It is distributed across tropical to anti-equatorial regions, ranging from 3º to 28º N and 5º to 31º S (Easton *et al*., 2018). This study presents the first distributional record of *Myripristis chryseres* in Indian waters and provides comparative morphometric and meristic data. For the first time, X-ray images of the specimens are presented, and their vertebral counts, distribution, and range extension in the Bay of Bengal are documented.

A single unsexed specimen of *Myripristis chryseres* was obtained from the landings at Annankovil fish landing centre (N 11º30'06.4"; E 079º46'19.8"), Parangipettai, on the southeast coast of India. It was caught by a hook-and-line operation at >50 m depth. The specimen was identified based on the descriptions and taxonomic keys provided by Jordan and Evermann (1903), Chen *et al*. (1990), and Khalaf *et al*. (1996). Meristic

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and morphometric characteristics were measured using standard methodology (Randall and Yamakawa, 1996; Matsunuma *et al*., 2018). Measurements were taken using a digital vernier calliper (TMT322006) with a precision of 0.1 mm. The specimen was subsequently photographed and radiographed using a GE AMX4 Plus portable X-ray System. It has been deposited in the Fishery Survey of India, Chennai, Tamil Nadu, India (Reg. No: FSI/CH-F/017).

Formerly, squirrelfishes and soldierfishes were classified in the order Beryciformes. At present, squirrelfishes and soldierfishes are classified under Holocentriformes. The systematic position of *M. chryseres* is given as:

Order Holocentriformes (Squirrelfishes and Soldierfishes)
Family Holocentridae (Bonaparte , 1833)
Subfamily Myripristinae (Soldierfishes) (Nelson, 1955)
Genus *Myripristis* (Cuvier, 1829)
Species *Myripristis chryseres* (Jordan & Evermann, 1903)
English common name: Yellowfin soldierfish (Fig. 1a-d)

The material examined (FSI/CH-F/017) was one unsexed specimen, 125.24 mm SL (Fig 1a-c), South-eastern India, Annankovil Fish Landing Centre, Parangipettai, N 11º30'06.4"; E 079º46'19.8", 11 February. 2023, Yosuva Mariasingarayan.

Dorsal fins: X+I; Anal fins: IV+12; Pelvic fins: I+7; Vertebrae: 25; Pectoral rays: 15; Gill rakers: 33; Lateral line scale count: 35; Vertebrae: 25 (Table 1).

Head robust and short, with a moderately large mouth. A single pair of tooth patches on the knob-like front of the lower jaw outside the mouth, the knob fitting into a distinct notch in the upper jaw when the mouth is closed. Opercular spines short, and not clearly defined. Body compact and short, with the dorsal shape consistently curved from the snout to the origin of the soft dorsal fin. Dorsal spines slender, with the third spine being the longest. Caudal peduncle short, narrow, and not compressed. Pectoral fins long and slender, with their tips reaching up to the anterior ventral fins; inner pectoral fin axil notched but naked. Scales absent in pectoral axilla. Ventral profile nearly straight until the beginning of the anal fin, which is evenly oblique in relation to the soft dorsal fin. Total vertebral count 25, comprising 11 abdominal vertebrae and the remainder being caudal spines (Fig. 1a–c). Meristic counts and morphometric measurements are presented in Table 2.

Body of fresh specimen brilliant reddish in colour, with area below the lateral line of scales appearing paler. Light and dark stripes present above eye, and black colouration on edge of operculum. First dorsal fin with red colouration between the membranes; second dorsal fin golden in colour, with a deep reddish hue at the

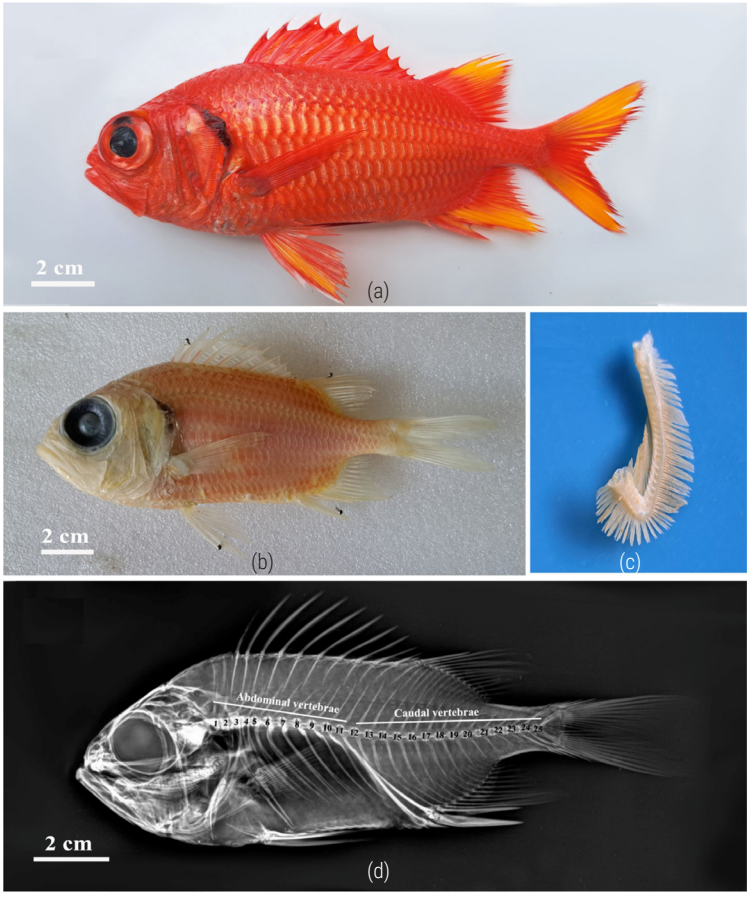

Fig. 1. (a) Fresh specimen; (b) Preserved specimen; (c) Gill rakers and (d) Radiography image of *M. chryseres* from Bay of Bengal, off south-east coast of India

Table 1. Meristic counts of examined specimen of *M. chryseres*, compared with preceding studies

Meristic characters	Present study	Jordan & Evermann, 1903 (Holotype specimen)	Khalaf *et al.*(1996)	Chen *et al*. (1990)
Dorsal fin spine	X+I	X+I	X+I	X+I
Dorsal fin soft rays	14	14	14	14
Pectoral fin rays	15	-	15	15
Pelvic fins	I+7	-	-	-
Anal fins	IV+12	IV+12	IV+12	IV+12
Gill rakers	33	-	39	11+24-25
Lateral line scales	35	34	33	34-35
Vertebrae counts	25	-	-	-

Table 2. Morphometric measurements of the examined specimen of *M. chryseres*

Characters	n = 1 (mm)	%SL	%HL
Total length (mm)	161.8	-	-
Standard length	125.2	-	-
Head length	43.3	34.6	-
Fork length	140.2	112.0	323.8
Body depth (% of SL)	63.0	50.3	145.5
Body depth at anal-fin origin	43.8	35.0	101.2
Body width	23.7	18.9	54.7
Head width	20.4	16.3	47.1
Snout length	8.7	6.9	20.1
Orbit diameter	18.7	14.9	43.2
Least inter-orbital width	10.1	8.1	23.3
Upper-jaw length	25.7	20.5	59.4
Upper-jaw depth	13.3	10.6	30.7
Sub-orbital depth	8.5	6.8	19.6
Post-orbital length	15.3	12.2	35.3
Pre-dorsal fin length	49.0	39.1	113.2
Pre-anal fin length	90.3	72.1	208.5
Pre-pelvic fin length	51.3	41.0	118.5
1st dorsal fin spine length	13.1	10.5	30.3
2nd DF spine L	17.2	13.7	39.7
3rd DF spine L	22.2	17.7	51.3
4th DF spine L	21.4	17.1	49.4
5th DF spine L	20.3	16.2	46.9
6th DF spine L	18.3	14.6	42.3
7th DF spine L	15.3	12.2	35.3
8th DF spine L	13.4	10.7	30.9
9th DF spine L	9.6	7.7	22.2
10th DF spine L	5.5	4.4	12.7
1st DF soft ray L	23.2	18.5	53.6
Longest DF soft ray L	23.6	18.8	54.5
14th DF soft ray L	12.2	9.7	28.2
1st Anal Fin spine L	3.3	2.6	7.6
2nd AF spine L	6.9	5.5	15.9
3rd AF spine L	22.9	18.3	52.9
4th AF spine L	19.8	15.8	45.7
1st AF soft ray L	27.1	21.6	62.6
Longest AF soft ray L	27.2	21.7	62.8
5th AF soft ray L	19.4	15.5	44.8
Pectoral-fin L	34.5	27.6	79.7
Pelvic-fin spine L	21.3	17.0	49.2
Longest pelvic-fin soft ray L	29.3	23.4	67.7
Caudal Fin Length	36.5	29.2	84.3
Caudal-peduncle L	17.0	13.6	39.3
Caudal-peduncle depth	11.7	9.3	27.0
Upper CF lope L	35.4	28.3	81.8
Lower CF lope L	33.1	26.4	76.4
Median CF lope L	13.6	10.9	31.4
Weight	78 g	-	-

base. Caudal fin golden yellowish, with the first ray below and the one above it appearing white. Anal fin with first two rays golden yellowish in colour, and with red bases on the edges. First three rays of pelvic fins pale yellow; remaining rays white with a red tinge. Pectoral fin uniformly red. In the preserved state, whole body pale reddish; edge of operculum black; head and all fins whitish.

The species is known to be distributed in the Indo-West Pacific region: Indonesia, Taiwan, Japan, Australia, La Reunion (France), the Hawaiian Islands, Papua New Guinea, the Marshall Islands, the Red Sea (Jordan), South Africa, Easter Island, and from the the present study, in India (Bay of Bengal).

This study documents a single unsexed specimen of *M. chryseres* from the Bay of Bengal off the south-east coast of India. It measured 124.25 mm in standard length. Previous studies reported an average standard length of 162-179.3 mm based on four specimens collected from Taiwan and the Red Sea (Chen *et al*. 1990; Khalaf *et al*. 1996). The fifth dorsal spine of the holotype was described as the longest among specimens from the Hawaiian Islands (Jordan and Evermann, 1903); however, the present specimen possessed the third dorsal spine as the longest, consistent with observations of Chen *et al*. (1990).

M. chryseres differs from its congener *M. murdjan* in lacking black edges on the dorsal and anal fins, possessing smaller scales, having a larger eye, exhibiting less black pigmentation in the axil and having yellowish to golden colouration on the dorsal, caudal and anal fins.

The ecology of *M. chryseres* remains poorly understood; however, seamounts and other deep-sea habitats may provide suitable environments and facilitate connectivity among populations of deeper-dwelling individuals (Easton *et al*., 2018). The subfamily Myripristinae is characterised by a constriction in the anterior third of the swim bladder, forming two distinct chambers (Nelson, 1995). In addition, squirrelfishes and soldierfishes have served as important model organisms for understanding the evolution of dim-light vision in vertebrates because of their adaptation to low-light environments (Parmentier *et al.*, 2011).

To date, there are no published reports of *M. chryseres* from South Asian countries. The current record extends the known geographical distribution of the species by approximately 2800 nautical miles, from Indonesia to the Bay of Bengal in India, and contributes to refining the checklist of *Myripristinae* within the Indian ichthyofauna. It highlights the need for further surveys to better understand the distribution and occurrence of this species in the region. Future

studies incorporating DNA barcoding are recommended to validate species identity and elucidate phylogeographic relationships.

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