

FIRST RECORD OF *LUTJANUS XANTHOPINNIS* (ACTINOPTERYGII: PERCIFORMES: LUTJANIDAE) FROM THE ANDAMAN ISLANDS, INDIA

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Abstract. This study provides the first record of *Lutjanus xanthopinnis* Iwatsuki, Tanaka et Allen, 2015 from the Andaman Islands. The new record is based on 2 specimens, 123 and 154 mm SL, captured inshore of Dignabad, Port Blair, Andaman Islands, India. The fish were examined, described, and illustrated. Morphometric and morphological data confirmed that the specimens examined from the Andamans are *L. xanthopinnis*, which varies distinctly from a closely-related species *Lutjanus madras* (Valenciennes, 1831).

Keywords: reef fish, Nicobar Islands, Port Blair, marine fish, snapper

INTRODUCTION

The family Lutjanidae consists of 17 genera and 112 species that are primarily associated with coral reefs in tropical and subtropical regions of the Atlantic and Indo-Pacific (Fricke et al. 2018). Rajan et al. (2013) reported 44 species from 10 genera from the Andaman and Nicobar Islands of India, including 27 species from the genus *Lutjanus*. During a recent visit to a fish landing centre in Port Blair in the Andaman Islands, a species of *Lutjanus* Bloch, 1790 resembling *Lutjanus madras* (Valenciennes, 1831) was encountered, which on further examination was determined to be *Lutjanus xanthopinnis* Iwatsuki, Tanaka et Allen, 2015. *Lutjanus xanthopinnis* is thus herein reported for the first time from the Andamans after detailed comparative morphometric study with *L. madras* collected from the Andaman Islands and along with data taken from the published description of *L. xanthopinnis*.

MATERIAL AND METHODS

Fish specimens were acquired from inshore fishermen selling their catch at the Dignabad fish landing centre, Port Blair, Andaman Island coast. The species was identified following Iwatsuki et al. (2015). The methodology for counts and measurements follows Allen and Talbot (1985) and Iwatsuki et al. (1993). Fish body measurements to the nearest 0.01 mm were taken using Mitutoyo

CD-6" ASX digital calliper, and results were expressed in % of standard length (SL). Numbers in parentheses (in the Description) denote the frequency of the count. Scales on the pre-opercular flange and shape of the posterior nostrils were observed in a stereozoom microscope after staining with methylene blue. Specimens used in the study were deposited in the marine fish collection of the Central Island Agricultural Research Institute (CIARI/MF).

RESULTS

Family LUTJANIDAE

Lutjanus xanthopinnis Iwatsuki, Tanaka et Allen, 2015
Figs. 1, 2, Tables 1, 2

Type locality: Kishira, Kimotsuki, Uchinoura Bay,
Kagoshima, Japan, 31°11'26"N, 131°00'3"E.

Material examined. CIARI/MF-02-03, 2 specimens, 123 and 154 mm SL, inshore of Dignabad, Port Blair, Andaman Islands, India (11°40'37.22"N, 92°44'26.48"E), N. Daniel, 10 May 2017.

Comparative specimen. *Lutjanus madras*, CIARI/MF-04, 1 specimens, 190 mm SL, Bathubasti fish market, Port Blair, Andaman Islands, India (11°37'27.50"N, 92°42'52.95"E), N. Daniel, 13 May 2017.

Description. Dorsal fin with 10 spines and 13 rays; anal-fin with 3 spines and 8 branched rays, pectoral-fin rays

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1 unbranched 14 branched rays; caudal fin emarginated with 2 principle caudal ray at both lobes and 15 branched medial rays; pelvic fin with one spine and 4 branched rays; lateral line scales 49 (1), 50 (1): horizontal scale rows above and below lateral line 6 (2), 13 (2); scale rows on cheek 5 (2); several embedded scales on preopercular flange; pre-dorsal scales extending forward to middle of inter-orbital bisecting the eye perpendicularly. Total gill rakers 22 (2) (including rudiments); Posterior

nostrils elliptical and present on each side of snout. A pair of dagger-like canine teeth in the upper jaw followed by a series of small canine-like teeth between it and the lateral part with numerous canine-like teeth. Table 1 provides values of morphometric characters and Fig. 1A illustrates the general appearance of the specimen collected.

Coloration of the fresh specimen. Background colour reddish to pinkish to silvery-grey on the dorsum with the whitish abdomen, dark pinkish on the upper head and back;

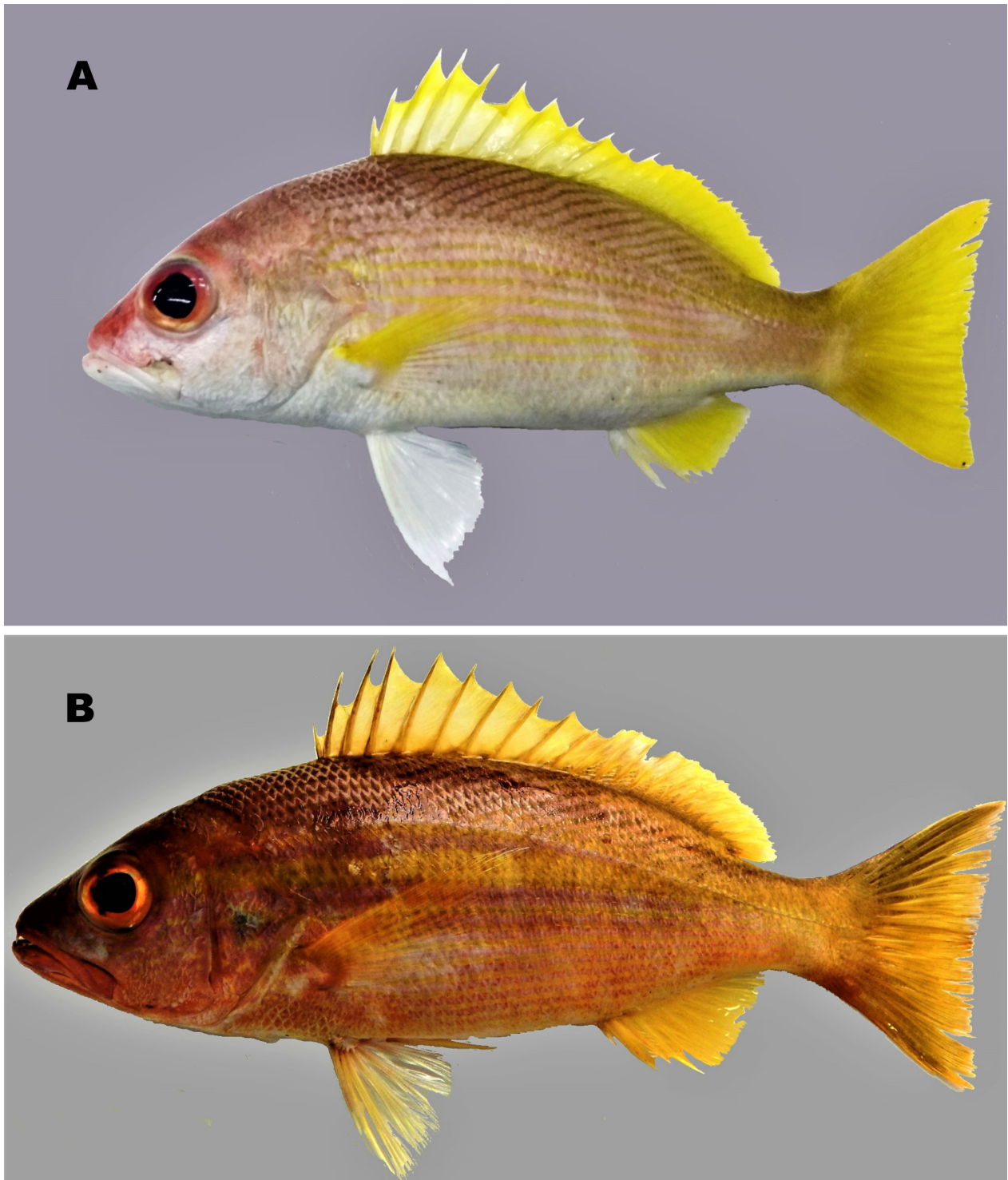


Fig. 1. *Lutjanus xanathopinnis*, 123 mm SL; CIARI/MF-02 (A); *Lutjanus madras*, 190 mm SL; CIARI/MF-04 (B) (Coloration prior to preservation)

thin yellow to brownish yellow lines above the lateral line, running obliquely upward and a series of narrow yellow horizontal stripes on lower sides of the body below the lateral line. Dorsal, caudal, anal, and pectoral fins bright yellow; pelvic fins whitish with a yellow tinge.

Distribution. This species is known to occur widely in the western Pacific Ocean from southern Japan to the East Indies, also in the Philippines, Brunei, Malaysia, western Indonesia, northward to China, Taiwan, and extending

into the Andaman Sea off the coast of western Thailand (Iwatsuki et al. 2015). It may possible that several records of *Lutjanus madras* from various localities referable to this species which need to be revisited.

DISCUSSION

The Andaman and Nicobar Islands are in close proximity to the south-east Asian countries and possess an ichthyofauna assemblage of both Indian and Pacific Ocean

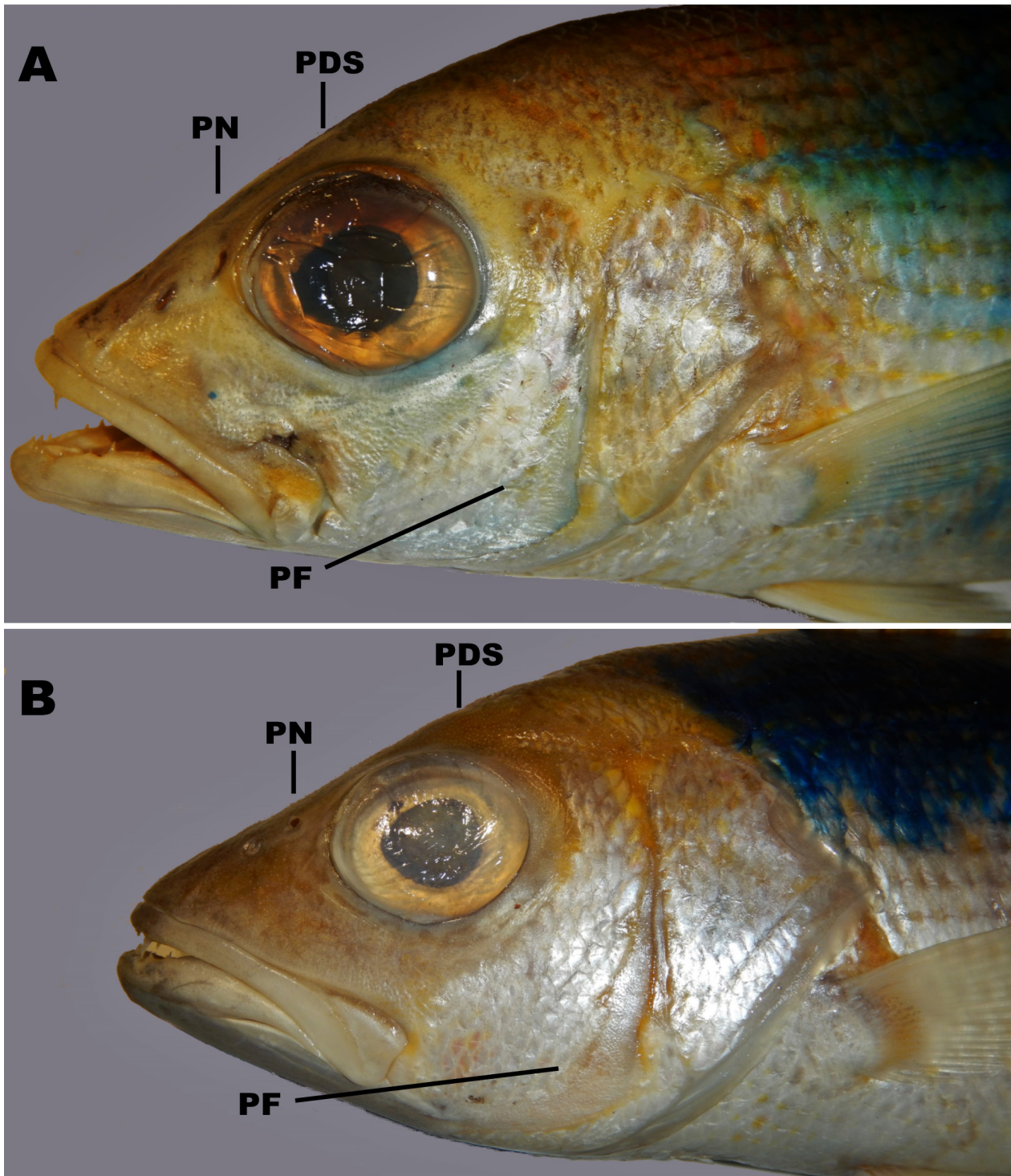


Fig. 2. *Lutjanus xanthopinnis*; CIARI/MF-02 (A); *Lutjanus madras*; CIARI/MF-04 (B); PN = posterior nostril, PDS = pre-dorsal scales; PF = pre-opercular flange

fishes (Rajan et al. 2013). Previous studies on the reef fishes of the Andaman Islands have not reported *Lutjanus xanthopinnis*, presumably because the species was only recognized as being distinct from *L. madras* in 2015. Indeed, the species was reported as *L. madras* from the Andaman Sea off the Thailand coast by Iwatsuki and Satapoomin (2009) (see Iwatsuki et al. 2015). Our observations on the inshore fisheries of the Andaman Islands show that *L. xanthopinnis* occurs sympatrically with *L. madras* and is a common inhabitant of coral reefs and old harbours around Port Blair. It is regularly fished and landed in the markets along with *L. madras*. Superficially, *L. xanthopinnis* and *L. madras* look similar but can be differentiated by the coloration and stripes. *Lutjanus madras* possesses a bright yellow colour on the caudal flank and in the upper half of the posterior dorsal vs. dull yellow over the caudal flanks

in *L. xanthopinnis*. Furthermore, *L. xanthopinnis* can be distinguished from *L. madras* in having an elliptical-shaped posterior nostril (vs. pear shaped); pre-opercular flange with scales vs. absence of scales; series of scales above the orbit exactly perpendicular in bisecting the eye diameter into two equal halves vs. bisecting the eye only in the posterior eye margin (Fig. 2A, 2B). The morphometry and meristic data recorded for *L. xanthopinnis* from the Andamans are within the range published in the original species description by Iwatsuki et al. (2015), except for the pectoral fin ray count, which is 15 in the Andaman specimen vs. 16–17 in the type series. These minor intraspecific variations in the Lutjanidae were also reported in *L. madras* by Muto et al. (2017). The presently reported study constitutes the first record of *L. xanthopinnis* from Indian waters (an important extension of its distributional range westward to

Table 1

Proportional measurements (as percentage of SL) for *Lutjanus xanthopinnis* (CIARI/MF-02-03) and *Lutjanus madras* (CIARI.MF-04)

	<i>L. xanthopinnis</i> CIARI/MF-02	<i>L. xanthopinnis</i> CIARI/MF-03	<i>L. xanthopinnis</i> Iwatsuki et al. 2015	<i>L. madras</i> CIARI/ MF-04	<i>L. madras</i> Iwatsuki et al. 2015
Standard length	123 mm	154 mm	56–192 mm	190 mm	224–254 mm
Body depth	35.4	34.4	34–38	33.8	34–37
Body depth at 1st anal spine	34.4	33.7	29–34	30.3	29–30
Head length	39.7	38.2	37–40	40.2	38–40
Body width	17.8	15.7	15–18	14.9	13–15
Snout length	11.7	10.7	10–12	13.0	11–13
Orbit diameter	11.5	9.8	10–13	10.0	10–11
Dermal eye opening	9.7	9.1	9–11	9.3	9
Inter-orbital width	6.1	5.9	6–7	7.7	8
Inter-orbital width + membrane	8.7	7.8	8–9	10.3	10
Upper jaw length	15.8	15.1	11–16	16.6	11–16
Suborbital depth	6.8	5.4	5–7	4.8	4–5
Caudal peduncle depth	12.3	11.9	12	12.3	12
Caudal peduncle length	19.1	18.9	18–21	19.4	18–19
Pre-dorsal length	44.8	40.3	37–44	42.2	40–42
Pre-anal length	69.3	68.4	63–68	68.3	65–67
Pre-pelvic length	40.6	38.1	36–42	40.3	40–41
Dorsal-fin base	51.9	52.5	47–54	51.8	49–51
Anal-fin base	14.9	14.2	13–15	15.3	15
Caudal-fin length	27.3	26.7	23–29	25.7	25–29
Pelvic-fin spine length	12.3	11.9	12–21	11.5	12–14
Pelvic-fin length	20.5	18.9	19–23	20.3	21–22
Pectoral-fin length	30.7	28.7	28–34	29.0	27–31
First dorsal-fin spine	6.2	5.9	5–6	4.8	5–6
Second dorsal-fin spine	12.5	11.8	11–13	11.3	9–11
Third dorsal-fin spine	15.2	15.9	14–16	14.3	13–14
Fourth dorsal-fin spine	15.1	16.1	14–17	14.8	14–16
Fifth dorsal-fin spine	16.3	15.4	13–16	13.4	14
Sixth dorsal fin spine	13.3	14.1	11–15	13.2	9–14
First soft dorsal-fin ray	4.7	11.8	11–13	11.1	10–12
First anal-fin spine	4.7	5.2	3–7	4.0	3–4
Second anal-fin spine	11.2	11.7	11–14	9.9	10
Third anal-fin spine	12.3	12.3	11–14	9.5	9–10
First soft anal-fin ray	13.9	12.8	13–16	11.7	13–15

Table 2

Meristic counts for *Lutjanus xanthopinnis* and *Lutjanus madras*

	<i>L. xanthopinnis</i> CIARI/MF-02	<i>L. xanthopinnis</i> CIARI/MF-03	<i>L. xanthopinnis</i> Iwatsuki et al. 2015	<i>L. madras</i> CIARI/ MF-04	<i>L. madras</i> Iwatsuki et al. 2015
Dorsal-fin rays	X, 13	X, 13	X, 13	X, 13	X, 13
Anal-fin rays	III, 8	III, 8	III, 8	III, 8	III, 9
Pectoral-fin rays (i + 15 + i)	15	15	16–17	17	17
Caudal-fin rays					
Lateral-line scales	49	49	48–50	51	49–51
Scale rows on cheek	5	5	4–5	7	7–8
Scale rows above lateral line	6½	7½	6½–7½	7½	7½
Scale rows below lateral line	13½	13½	11½–14½	17½	16½–17½
Gill rakers, upper and lower			7–8 (6–7) +		8–9 (7–8) +
limb totals (rudiments)	22	22	14–15 (4–5)	25	17–18 (7–8)
= total including rudiments			= 22–23		= 25–27

the Andaman Islands) and also increases to 28 the number of *Lutjanus* species known to occur in the Andaman and Nicobar Islands.

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