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First Records of Two Labrid Fishes, *Iniistius trivittatus* and *Leptojulis lambdastigma* (Teleostei: Perciformes), from Thailand and Malaysia

Mizuki Matsunuma [1*], Siti Tafzilmeriam S. A. K. [2], Yusri Yusuf [2] and Hiroyuki Motomura [3]

Key words: Labridae, distribution, South China Sea

Abstract

The razorfish *Iniistius trivittatus* (Randall and Cornish, 2000), previously recorded only from Taiwan, Hong Kong and Vietnam, and the wrasse *Leptojulis lambdastigma* Randall and Ferraris, 1981, previously from Taiwan and the Philippines, are redescribed on the basis of four and six specimens, respectively, collected from Thailand and Malaysian waters. The range extensions of the two species both indicate wide South China Sea distributions.

The razorfish (Perciformes: Labridae), *Iniistius trivittatus*, originally described by Randall and Cornish [1)] as *Xyrichtys trivittatus* on the basis of two specimens, has to date been recorded only from Taiwan, Hong Kong and Vietnam [1–2)]. The wrasse, *Leptojulis lambdastigma*, originally described by Randall and Ferraris [3)] on the basis of eight specimens from the Philippines, has previously been recorded only from Taiwan and the Philippines [3–4)].

During surveys of the marine fish fauna off Terengganu, Malaysia, east coast of the Malay Peninsula, conducted in December 2008 and January 2009, two individuals of *I. trivittatus* and three individuals of *L. lambdastigma* were obtained at local fishing ports in Kuala Terengganu. Subsequently, two and three additional specimens of *I. trivittatus* and *L. lambdastigma*, respectively, were obtained at a local fish market in Mahachai, Samut Sakhon Province, Thailand in September 2009. These specimens are described here as the first records of the two species from the Gulf of Thailand, the Malaysian specimens representing the southernmost records for each species.

Materials and Methods

Counts and measurements of *I. trivittatus* and *L. lambdastigma* follow Randall and Cornish [1)] and Randall [4)], respectively. Standard length is expressed as SL. Vertebral counts were made from X-ray images. Institutional abbreviations used in this paper are as follows: BPBM—Bernice Papuahi Bishop Museum, Honolulu; KAUM—Kagoshima University Museum, Kagoshima; NTUM—National Taiwan University, Institute of Zoology, Taipei; UMT—South China Sea Biodiversity Museum at Institute of Oceanography, University Malaysia Terengganu, Kuala Terengganu; and USNM—Museum Support Center of the Smithsonian Institution National Museum of Natural History, Suitland.

Comparative materials of *I. trivittatus* are as follows: USNM 330073, paratype of *Xyrichtys trivittatus*, male, 128.4 mm SL, purchased at local fish market in Vung Tau, Vietnam (10°21′N, 107°15′E), 19 Jan. 1973, D. de Sylva; USNM 357411, male, 130.2 mm SL, collected with USNM 330073.

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Fig. 1. Fresh specimens of *Iniistius trivittatus*. A, KAUM–I. 16945, male, 117.1 mm SL, obtained at Cendering Port in Kuala Terengganu, Terengganu, Malaysia. B, KAUM–I. 23878, male, 121.5 mm SL, obtained at fish market in Mahachai, Samut Sakhon Province, Thailand.

Fig. 2. Fresh specimen of *Leptojulis lambdastigma*. KAUM–I. 17035, male, 101.6 mm SL, obtained at Pulau Kambing Port in Kuala Terengganu, Terengganu, Malaysia.

Results and Discussion

Iniistius trivittatus (Randall and Cornish, 2000)

(Figs. 1, 3; Table 1)

Xyrichtys sp. 1: Shen and Yeh, 1987 [5]: 64, fig. 12 (Nanfangao, Taiwan)

Xyrichtys pavo (not of Valenciennes): Shen, 1993 [6]: 469, pl. 156, fig. 5 (Taiwan)

Xyrichtys trivittatus Randall and Cornish, 2000 [1]: 18, fig. 1 (type locality: Lamma Island, Hong Kong)

Iniistius trivittatus: Randall and Jonsson, 2008 [7]: 179, fig. 1 (Vietnam)

Material examined. KAUM–I. 16945, male, 117.1 mm SL, southern South China Sea, off east coast of Malay Peninsula, obtained at Cendering Port in Kuala Terengganu, Malaysia, bottom trawl, 11 Dec. 2008; KAUM–I. 23878, male, 121.5 mm SL, Gulf of Thailand, probably from Thai waters, obtained at fish market at Mahachai, Samut Sakhon Province, Thailand, bottom trawl, 24 Sept. 2009; KAUM–I. 23879, sex unknown, 119.5 mm SL, collected with KAUM–I. 23878; UMTF 1895, male, 133.0 mm SL, southern South China Sea, off east coast of Malay Peninsula, obtained at Pulau Kambing Port in Kuala Terengganu, Malaysia, bottom trawl, 11 Jan. 2009. All specimens were collected by M. Matsunuma and S. A. K. Siti Tafzilmeriam.

Description. Counts and measurements of specimens of *I. trivittatus* from the Gulf of Thailand and the southern South China Sea are shown in Table 1. Body extremely deep, compressed. Snout long, its dorsal profile nearly vertical; remaining head profile strongly convex. Gill opening large. Eye small, high on head. Mouth small, horizontal; posterior margin of maxilla just reaching or short of a vertical through anterior margin of orbit; lips well developed; jaws with a pair of long curved caniniform teeth, tips extending above and below lips when mouth closed; no caniniform tooth at mouth corner; side of jaws with a row of stout conical teeth, an inner band of small nodular teeth. Body, including base of caudal fin, covered with large cycloid scales, except for much of head and remaining fin bases; scales thin, with membrane on posterior margin; size of ventral body scales about half height of those on body side. Head naked, except for 2–3 scales dorsoanteriorly on opercle; a broad band of small scales beginning with 7–8 rows just below eye, ending with 3–4 rows behind corner of mouth. Lateral line interrupted; anterior section beginning just above upper origin of gill opening, ending below bases of 9th to 10th dorsal-fin soft rays; posterior section beginning below base of 11th dorsal-fin soft ray, reaching on caudal-fin base. Origin of dorsal fin slightly or well posterior to a vertical through posterior margin of orbit; dorsal-fin spines extremely slender, flexible, first dorsal-fin spine curved, shorter than longest dorsal-fin soft ray; membrane between 2nd and 3rd dorsal-fin spines incised to approximately half length of 3rd spine; gap between bases of 2nd and 3rd spines about 1.5 times larger than those of adjacent interspinous spaces. Origin of anal fin below last dorsal-fin spine base. Pectoral fin relatively large, upper 2 rays unbranched, remaining rays branched; upper origin of fin below base of 3rd dorsal-fin spine; posterior tip of fin extending slightly beyond a vertical through base of 3rd anal-fin spine. Pelvic fin relatively large, all rays branched; origin of fin slightly anterior to a vertical at upper origin of pectoral fin; posterior tip of depressed pelvic fin just short of a vertical at origin of anal fin; caudal fin short, well rounded. Vertebrae 9 + 16 = 25 (based on KAUM–I. 16945, 23878, and 23879).

Color when fresh. Based on color photographs of fresh specimens (Fig. 1). Body yellowish-dusky gray, whitish ventrally, darkish dorsally; edge of scales on body side darker than center; three vertical blackish bars on body side, first from between bases of 5th and 6th dorsal-fin spines, second from between bases of 3rd and 4th dorsal-fin soft rays, third from between bases of 9th and 10th dorsal-fin soft rays; an indistinct large blackish blotch on center of caudal peduncle; a median pale blue line on forehead; iris with an inner rim of yellow and outer ring of reddish-pink. Dorsal, anal and pelvic fins pale yellow; dorsal and anal fins with orange or red margin; upper portion of dorsal fin anteriorly from 3rd dorsal-fin spine pale red; posteriorly a thin wavy orange line just above base of dorsal fin from 4–6th dorsal-fin spine; anal fin with several broken white lines with pale blue margin, or two complete wavy lines; pectoral fins transparent, edges of rays dusky, base with a blue margined white arc; pelvic fin uniformly pale yellow; caudal fin pale blue, yellowish basally, blackish distally, red spots forming irregular short bars on uppermost edge.

Color of preserved specimen similar to fresh, but body a little browner; red, yellow and blue coloration lost.

Remarks. The present specimens from the Gulf of Thailand and the southern South China Sea were identified as *Iniistius trivittatus*, following the diagnostic characters of that species

given by Randall and Cornish [1]: 1st and 2nd dorsal-fin spines shorter than longest dorsal soft ray; a broad band of small scales on cheek; 2 or 3 scales dorsally on opercle; 15 or 16 gill rakers; 3 blackish bars on upper half of body; and a median pale blue line on forehead.

Small variations in some counts and measurements were recognized between the present specimens, including comparative materials, and the original description of the species (see Table 1): e.g., 3–6 branched dorsal-fin soft rays (vs. 4 in the original description), 5–11 branched anal-fin soft rays (vs. 3), 12 or 13 pectoral-fin rays (vs. 12), 16–18 circumpeduncular scales (vs. 19 or 20), 14 or 15 total gill rakers (vs. 15 or 16), lower body depth mean 37.4 (range 35.9–38.4) %SL [vs. 38.7 (38.5–38.9)], narrower body width 10.4 (9.7–11.2) %SL [vs. 12.4 (11.4–13.0)], larger orbit diameter 5.8 (5.9–7.0) %SL [vs. 5.3 (5.1–5.5)] and wider interorbital width 6.2 (5.1–6.7) %SL [vs. 4.6 (4.5–4.6)]. These minor differences are treated here as intraspecific variations because the original description of the species was based on only two specimens of similar size. Differences in coloration of anal fin were apparent between the present specimens (Fig. 1); 117.1 mm SL specimen (KAUM–I. 16945) having the fin with thin orange margin and 2 discontinuous bluish lines, 119.5 mm SL specimen (KAUM–I. 23879) having the fin with thin orange margin and 2 continuous bluish lines, 121.5 mm SL specimen (KAUM–I. 23878) having the fin with a broad red margin (about 1/3 width of anal fin height) and 2 continuous bluish lines, and 133.0 mm SL (UMTF 1895) having the fin with thin orange margin and 2 discontinuous bluish lines. A 129.4 mm SL specimen (NTUM 7136; as *Xyrichtys* sp. 1) from Taiwan was reported by Shen and Yeh [5] as having the anal fin with a reddish edge. The specimen was subsequently designated as a paratype of *X. trivittatus* by Randall and Cornish [1]. Moreover, the 118 mm SL holotype of *X. trivittatus* (BPBM 38550) from Hong Kong was reported by Randall and Cornish [1] as having the anal fin with a pink margin. Shen and Yeh [5] and Randall and Cornish [1] did not mention the bluish lines on the middle and base of the anal fin were continuous (like Fig. 1B) or discontinuous (like Fig. 1A) lines. Although the relationships between these color differences of the anal fin and body sizes were not significantly, width of orange to red margin and discontinuous bluish lines on the fin most likely to become wider and being continuous lines, respectively with growth. Thus these color differences between the specimens, plus previous records, are regarded here as ontogenetic changes. Detailed examinations

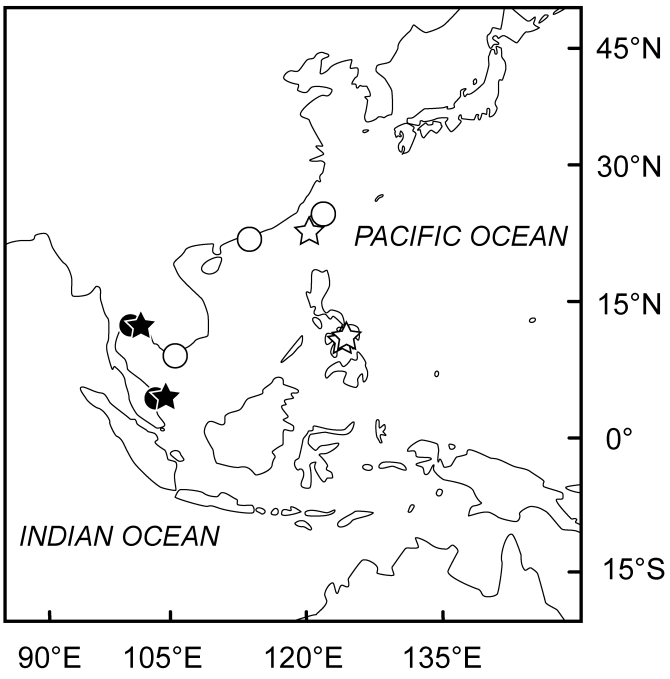

Fig. 3. Previous records of *I. trivittatus* (open circles) and *L. lambdastigma* (open stars), and present specimens of *I. trivittatus* (closed circles) and *L. lambdastigma* (closed stars). Some symbols represent more than one specimen.

based on greater range of specimens are required to confirm these morphological and color variations of *I. trivittatus*.

Iniistius trivittatus has been previously recorded only from Taiwan, Hong Kong and Vietnam [1–2]. Recently, Randall and Jonsson [7] reported numerous specimens of *I. trivittatus* purchased from Swedish food markets, imported from Vung Tau, Vietnam. However, the present specimens represent the first records of the species from Thai and Malaysian waters, the latter being the southernmost record of the species, some 600 km southwest from previously known localities (Fig. 3).

Although records of *I. trivittatus* are limited, the present specimens indicate that the species is widely distributed on the East and South east Asian Continental Shelves, from Taiwan south to the east coast of the Malay Peninsula and southeastwards to Borneo. The fact that *I. trivittatus* has not been recorded from isolated islands in the western Pacific (e.g. the Philippines) also suggests that the species occurs only in shallow waters around the continental coast. *Iniistius trivittatus* is one of the common sandy bottom labrid fishes, captured by bottom trawl, observed throughout the landing ports surveys in Terengganu, along with *Xiphocheilus typus* Bleeker, 1857 and *Leptojulis lambdastigma* off Terengganu.

Leptojulis lambdastigma Randall and Ferraris, 1981

(Figs. 2–3; Table 2)

Leptojulis lambdastigma Randall and Ferraris, 1981 [3]: 93, fig. 5 (type locality: Samar Sea, Philippines); Shao, 1986 [8]: 187, fig. 15 (Taiwan); Randall, 1996 [4]: 8, pl. II A, fig. 2 (Taiwan, Philippines); Chen [9], 2004: 462, pl. 151, fig. 1 (Taiwan)

Material examined. KAUM–I. 17035, male, 101.6 mm SL, southern South China Sea, off east coast of Malay Peninsula, obtained at Pulau Kambing Port in Kuala Terengganu, Malaysia, bottom trawl, 17 Dec. 2008; KAUM–I. 17183, male, 118.3 mm SL, southern South China Sea, off east coast of Malay Peninsula, obtained at fishing port in Kuala Besut, Malaysia, bottom trawl, 5 Jan. 2009; KAUM–I. 17206, male, 125.3 mm SL, southern South China Sea, off east coast of Malay Peninsula, obtained at Pulau Kambing Port in Kuala Terengganu, Malaysia, bottom trawl, 10 Jan. 2009; KAUM–I. 23275, male, 83.6 mm SL, Gulf of Thailand, probably from Thai waters, obtained at fish market at Mahachai, Samut Sakhon Province, Thailand, bottom trawl, 10 Sept. 2009; KAUM–I. 23429, male, 100.7 mm SL, Gulf of Thailand, probably from Thai waters, obtained at fish market at Mahachai, Samut Sakhon Province, Thailand, bottom trawl, 24 Sept. 2009; KAUM–I. 24122, male, 102.5 mm SL, collected with KAUM–I. 23429. All specimens were collected by M. Matsunuma and S. A. K. Siti Tafzilmeriam.

Description. Counts and measurements of specimens of *L. lambdastigma* from the Gulf of Thailand and the southern South China Sea are shown in Table 2. Body elongated, relatively compressed. Head pointed; dorsal profile of head nearly straight, nape slightly convex; snout relatively long; orbit relatively small; interorbital space flat medially, rounded at edges. Mouth terminal, slightly oblique, relatively large; posterior margin of maxilla just reaching a vertical through anterior margin of orbit; jaws with two pairs of large caniniform teeth anteriorly, posterior pair much larger, strongly recurved and outcurved; first pair of caniniform teeth in upper jaw forward projecting and slightly divergent; side of jaws with small conical teeth in 2–3 rows; a single caniniform tooth (absent on one side in one specimen; two on one side and both sides in two and one specimen, respectively) posteriorly on upper jaw (at mouth corner); a band of small nodular teeth medial to outer row of teeth in both jaws. Gill opening relatively large; gill rakers short, longest raker on first gill arch approximately one-third length of longest gill filament. Body covered with large cycloid scales, head and bases of fins except for caudal fin naked; size of ventral body scales about half height of those on body side; small scales on nape extending forward nearly to a vertical through posterior margin of orbit; lateral line complete. Origin of dorsal fin nearly to a vertical at posterior end of opercular membrane; dorsal-fin spines slender, longer with posteriorly; longest dorsal-fin spine shorter than that of dorsal-fin soft rays; all dorsal-fin soft rays branched. Origin of anal fin below base of 9th dorsal-fin; 1st anal-fin spine short, close set with 2nd anal-fin spine; 3rd anal-fin spine longest; all anal-fin soft rays branched. Origin of pectoral fin below a vertical through base of 1st dorsal-fin spine; posterior tip of pectoral fin just reaching to a vertical through base of 9th dorsal-fin spine; uppermost ray of pectoral fin unbranched, remainding rays branched. Pelvic fin relatively long, 1st ray elongate; posterior tip of depressed fin reaching anterior margin of anus. Caudal fin somewhat rounded tending to rhomboid. Vertebrae 9 + 16 = 25 (based on KAUM–I. 17035, 17183, and 24122).

Table 1. Counts and proportional measurements, as percentages of standard length, of specimens of *Iniistius trivittatus*, including type materials.

	This study						Randall and Cornish (2000)	
Registration number	KAUM–I. 16945	UMTF 1895	KAUM–I. 23878	KAUM–I. 23879	USNM 357411	USNM 330073 Paratype	NTUM 7136 Paratype	BPBM 38550 Holotype
Locality	Malaysia		Thailand		Vietnam		Taiwan	Hong Kong
Sex	male	male	male	unknown	male	male	male	male
SL (mm)	117.1	133.0	121.5	119.5	125.3	128.4	128	118
Dorsal-fin rays (branched rays)	IX, 12 (6)	IX, 12 (4)	IX, 12 (4)	IX, 12 (3)	—, 12 (4)	IX, 12 (5)	IX, 12 (4)	IX, 12 (4)
Anal-fin rays (branched rays)	III, 12 (11)	III, 12 (5)	III, 12 (7)	III, 12 (5)	III, 12 (3)	III, 12 (8)	III, 12 (3)	III, 12 (3)
Pectoral-fin rays	13	12	12	12	12	12	12	12
Pelvic-fin rays	I, 5	I, 5	I, 5	I, 5	I, 5	I, 5	I, 5	I, 5
Principal caudal rays	13	12	13	13	12	13	12	13
Pored lateral-line scales	20 + 5	20 + 5	—	19 + 5	—	20 + 4	20 + 5	20 + 5
Scales above / below lateral line	5 / 11	5 / 11	5 / 10	5 / 11	— / 10	5 / 10	6 / 11	6 / 11
Scales between middle dorsal-fin spine base to lateral line	2.5	2	2	2.5	2	2.5	2.5	2.5
Circumpeduncular scales	16	18	17	18	18	18	19	20
Gill rakers	4 + 10 = 14	5 + 10 = 15	6 + 9 = 15	5 + 10 = 15	5 + 9 = 14	6 + 9 = 15	15 (total)	16 (total)
Branchiostegal rays	5	5	5	5	5	5	5	5
Body depth (%SL)	38.4	38.0	36.2	35.9	37.7	38.2	38.9	38.5
Body width	9.8	10.3	10.6	9.7	11.2	10.8	13.0	11.4
Head length	33.9	32.4	31.4	31.0	33.8	33.3	31.8	31.7
Snout length	18.9	18.0	17.4	17.1	—	18.8	18.5	17.5
Orbit diameter	6.2	5.9	7.0	6.1	6.1	6.0	5.1	5.5
Interorbital width	5.2	5.6	6.5	5.6	5.1	6.7	4.5	4.6
Upper-jaw length	10.2	10.4	9.5	9.5	11.3	10.7	10.4	10.0
Caudal-peduncle depth	16.1	16.3	15.2	15.2	14.8	15.6	16.0	16.9
Caudal-peduncle length	7.6	8.3	6.7	6.7	8.1	8.6	8.7	8.4
Predorsal-fin length	25.4	26.5	28.1	27.5	—	28.5	28.4	28.1
Preanal-fin length	52.8	55.3	53.7	54.4	51.6	54.8	52.1	51.5
Prepelvic-fin length	32.1	30.2	29.1	28.5	29.3	28.9	28.8	28.1
Dorsal-fin base	78.4	72.3	74.2	74.9	—	75.4	75.3	75.0
First dorsal-fin spine	13.3	13.5	11.0	—	—	15.7	14.9	13.8
Second dorsal-fin spine	12.5	11.7	10.9	11.0	—	14.0	13.8	13.0
Third dorsal-fin spine	—	—	—	—	—	12.6	—	12.7
Ninth dorsal-fin spine	—	12.9	13.4	11.9	—	13.6	14.1	15.1
Longest dorsal-fin soft ray	18.0	17.3	14.1	13.6	17.2	17.8	18.3	17.7
Anal-fin base	42.0	41.4	41.4	42.5	42.2	41.5	42.2	44.0
First anal-fin spine	—	4.8	4.9	4.9	6.4	6.3	6.9	—
Second anal-fin spine	7.1	—	—	—	8.8	7.9	9.0	—
Third anal-fin spine	8.5	—	8.0	7.0	10.5	11.4	11.8	10.4
Longest anal-fin soft ray	17.5	16.3	13.3	13.9	16.2	16.7	17.3	17.0
Caudal-fin length	25.6	23.4	22.1	22.0	24.6	27.2	25.5	25.4
Pectoral-fin length	25.8	25.0	21.9	23.0	24.4	24.0	24.8	22.6
Pelvic-fin spine length	10.0	9.5	10.8	—	10.5	11.7	12.5	11.9
Pelvic-fin length	24.3	24.2	20.7	21.5	24.2	26.9	26.5	22.9

Table 2. Counts and proportional measurements, as percentages of standard length, of specimens of *Leptojulis lambdastigma*, including type materials.

	This study						Randall and Ferraris (1981)	
Registration number	KAUM–I. 17035	KAUM–I. 17183	KAUM–I. 17206	KAUM–I. 23275	KAUM–I. 23429	KAUM–I. 24122	BPBM 26408 Holotype	Paratypes* (n = 5)
Locality	Malaysia			Thailand			Philippines	
Sex	male	male	male	male	male	male	male	
SL (mm)	101.6	118.3	125.3	83.6	100.7	102.5	117.8	88.2–136.5
Dorsal-fin rays	IX, 12	IX, 12	IX, 12	IX, 12	IX, 12	IX, 12	IX, 12	VIII–IX, 12–13
Anal-fin rays	III, 12	III, 12	III, 12	III, 12	III, 12	III, 12	III, 12	III, 12
Pectoral-fin rays	13	13	13	13	13	13	13	13
Pelvic-fin rays	I, 5	I, 5	I, 5	I, 5	I, 5	I, 5	I, 5	I, 5
Principal caudal rays	14	14	14	14	14	14	14	14
Pored lateral-line scales	27	27	27	27	27	27	27	27
Scales above / below lateral line	4 / 10	4 / 9	4 / 9	4 / 9	4 / 10	4 / 9	4 / 9	4 / 9–10
Circumpeduncular scales	19	19	18	18	18	17	19	17–19
Gill rakers	7 + 10 = 17	7 + 8 = 15	7 + 10 = 17	5 + 11 = 16	7 +11 = 18	7 + 12 = 19	20 (total)	17–19 (total)
Branchiostegal rays	6	6	6	6	6	6	6	6
Body depth (%SL)	29.4	27.7	29.7	—	27.0	28.1	27.2	25.6–27.1 (26.4)
Body width	10.2	10.3	11.3	9.9	10.9	11.2	10.4	10.0–11.8 (11.0)
Head length	31.9	30.9	31.8	33.1	30.5	31.4	30.9	30.5–31.9 (31.2)
Snout length	10.9	11.0	11.4	11.0	10.7	10.5	11.3	10.3–11.1 (10.8)
Orbit diameter	5.9	5.7	5.4	7.4	6.3	6.4	5.8	5.2–6.5 (5.9)
Interorbital width	6.2	6.3	6.9	6.9	6.2	6.8	5.3	5.2–5.6 (5.4)
Upper-jaw length	9.1	9.1	9.5	9.2	9.4	9.6	—	—
Caudal-peduncle depth	13.4	13.1	13.2	11.1	12.6	13.2	11.9	11.8–12.8 (12.1)
Caudal-peduncle length	7.2	7.9	8.3	6.5	7.6	7.8	8.8	7.9–8.4 (8.3)
Predorsal-fin length	31.0	31.5	30.2	32.4	29.3	30.1	29.6	29.5–30.9 (30.2)
Preanal-fin length	56.4	54.4	52.8	57.9	54.6	55.0	52.6	52.7–53.3 (52.9)
Prepelvic-fin length	30.6	31.5	31.4	32.4	32.0	31.1	29.7	29.2–32.2 (30.6)
First dorsal-fin spine	5.4	—	5.5	5.6	6.0	5.3	5.7	5.2–6.5 (5.6)
Second dorsal-fin spine	6.1	—	6.9	6.5	7.2	—	—	—
Ninth dorsal-fin spine	10.1	10.8	11.7	10.9	10.8	11.1	10.5	10.1–13.3 (11.4)
Longest dorsal-fin soft ray	16.3	15.3	16.4	15.1	14.4	14.9	17.2	15.4–18.3 (16.7)
First anal-fin spine	4.2	4.7	5.8	4.4	4.9	5.6	4.6	3.9–4.8 (4.4)
Second anal-fin spine	—	—	8.3	7.2	6.9	6.8	—	—
Third anal-fin spine	—	8.5	9.3	9.1	9.4	8.8	—	8.8–9.8 (9.3)
Longest anal-fin soft ray	14.0	15.4	16.2	15.6	14.1	14.4	15.5	14.9–17.8 (16.0)
Caudal-fin length	22.9	20.5	21.5	21.1	20.4	21.1	—	18.8–21.1 (20.2)
Pectoral-fin length	22.0	20.4	21.8	22.2	20.8	20.6	20.2	20.1–21.5 (20.7)
Pelvic-fin spine length	9.9	10.4	12.1	10.3	10.5	10.8	9.5	8.2–11.5 (9.8)
Pelvic-fin length	21.2	21.7	—	18.3	19.4	22.0	27.4	18.1–33.2 (25.2)

Means in parentheses include data for holotype

*Combined data for paratypes from Randall and Ferraris[3)]

Color when fresh. Based on color photographs of fresh specimens (Fig. 2). Body and head pale pink, whitish ventrally; yellow stripe on body side, its width similar to iris diameter, from upper lip, through orbit, to caudal-fin base; its lower edge with four to six (somewhat indistinct) narrow vertical yellow bars; an irregular black spot on and below lateral stripe above pectoral fin (indistinct due to poor condition); a large, posteriorly-pointed V-shaped black mark middorsally on nape, its sides broader anteriorly, with short white extensions anteriorly and posteriorly; a light yellow stripe extending posteriorly on lower part of head from mouth corner and continuing as a zigzag band along body at level of pectoral-fin base; brownish-yellow stripe along dorsal-fin base from below side of V-shaped mark. Dorsal fin pale orange; upper half of soft-rayed portion of fin pale blue, with a broad pale yellow band submarginally; lower portion of dorsal fin with a row of yellow blotches with a pale blue margin on membranes anteriorly, forming a zigzag stripe posteriorly. Caudal fin white, pale blue distally, blackish marginally, numerous scattered yellow spots with translucent margin. Pectoral and pelvic fins translucent. Anal fin pale orange, broadly dusky yellow distally, with a thin light blue margin; a row of yellow spots along base, one between each pair of adjacent fin rays; two longitudinal yellow line (somewhat indistinct), first on middle of fin forming spots posteriorly, second on submarginally.

Color of preserved specimens similar to fresh, but body a little browner; red, yellow and blue coloration lost.

Remarks. The present specimens from the Gulf of Thailand and the southern South China Sea were identified as *Leptojulis lambdastigma*, following the diagnostic characters of that species given by Randall and Ferraris [3] and Randall [4]: 27 lateral line scales; 12 dorsal and anal fins soft rays; pectoral fin length 1.45–1.53 in head length, and a large V-shaped black mark medially on nape.

Small variations in some measurements were recognized between the present specimens and the original description of the species (see Table 2): e.g., higher body depth mean 28.4 (range 27.0–29.7) %SL [vs. 26.4 (25.6–27.1)], longer preanal-fin length 55.2 (52.8–57.9) %SL [vs. 52.9 (52.7–53.3)], shorter longest anal-fin soft ray 14.9 (14.0–16.2) %SL [vs. 16.0 (14.9–17.8)] and shorter pelvic-fin length 20.5 (18.3–22.0) %SL [vs. 25.2 (18.1–33.2)]. These minor differences are treated here as intraspecific variations because the original description of the species was based on only six specimens of similar size.

In their review of *Leptojulis*, Randall and Ferraris [3] described *L. lambdastigma* as a new species on the basis of eight specimens from the Philippines. Randall [4] subsequently provided a second revision of *Leptojulis*, recognizing five valid species in the genus. Although Shen [6] had reported *L. lambdastigma* from Taiwan, it was regarded by Randall [4] as a new species, *L. urostigma*. *Leptojulis lambdastigma* has been previously recorded from Taiwan and the Philippines [3, 4, 8, 9]. The present specimens represent the first records of the species from Malaysian and Thai waters, and suggest a wider distribution in the South China Sea (Fig. 3). Off Terengganu, Malaysia specimens of *L. lambdastigma* were captured by bottom trawl from offshore sandy bottoms.

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