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The Rare Haemulid Fish, *Pomadasys andamanensis* McKay & Satapoomin, 1994, and Comparisons with Other Striped Species of *Pomadasys* (Teleostei, Perciformes)

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Abstract The rare haemulid fish, *Pomadasys andamanensis* McKay & Satapoomin, 1994, known only from the holotype, is redescribed in detail from four additional specimens collected from Phuket Island and adjacent waters in the Andaman Sea. The species is similar to other striped species of *Pomadasys* in having longitudinal dark stripes on the body, but differs from the latter in the number, color and running pattern of the stripes. *Pomadasys andamanensis* is characterized by four separate, longitudinal black or dark stripes on the dorsal half of the body.
Key words: *Pomadasys*, haemulid fish, Phuket, Thailand.

Fishes of the haemulid genus *Pomadasys* are widely distributed in shallow waters of the tropical Indo-West Pacific. McKay (1984) gave systematic accounts for nine species of *Pomadasys* found in the western Indian Ocean, with a key to genera and species occurring in the area. Subsequently, McKay & Satapoomin (1994) described *Pomadasys andamanensis* as a new species, on the basis of a single specimen from Phuket Island, Andaman Sea. They distinguished it from other striped species of *Pomadasys* by the number and running pattern of the stripes, having four separate, longitudinal dark stripes on the dorsal half of the body.

Iwatsuki et al. (1995) clarified the identity of another striped species, *Pomadasys quadrilineatus* Shen & Lin, 1984, which had frequently been placed in the synonymy of *P. stridens* (Forsskål, 1775). They showed that the two species were distinct from each other mainly in color, and gave distinguishable characters for them and *P. striatus*. In addition, McKay & Randall (1995) described two new species of *Pomadasys*, *P. aheneus* and *P. taeniatus*, both with longitudinal stripes on the body.

During a shallow water faunal survey off Phuket by Matsuura in November 1986, two examples of a striped *Pomadasys* species were collected. Subsequent recognition of the undescribed status of the specimens and plans to rectify such were prevented by McKay & Satapoomin (1994), who described a single conspecific specimen as *P. andamanensis*. Subsequent collection of two further specimens by local

fishermen has enabled a more detailed account of the species, based on five specimens.

Methods

Counts and measurements generally followed Hubbs & Lagler (1947) and McKay & Randall (1995), except for the following: greatest body depth was measured vertically from the uppermost point of the scaly sheath along the base of the spiny dorsal fin to the ventral surface of the body; body depth at the first anal fin spine origin was measured from the uppermost point of the scaly sheath along the base of the soft dorsal fin to the base of the first anal fin spine. Because the transverse scale rows above and below the lateral line were often arranged irregularly, the lowest of several counts was treated as the scale row count. Scales were counted by using cyanin blue solution in 70% ethanol. Standard length is expressed as SL throughout the paper.

We follow Eschmeyer (1990) in treating *Pomadasys* as masculine, although Smith and McKay (1986) recognized it as neuter. Institutional codes follow Leviton et al. (1985). Additional institutional abbreviations are as follows: Fisheries Course, Department of Animal Science, Miyazaki University (MUFS) and Phuket Marine Biological Center, Thailand (PMBC).

Pomadasys andamanensis McKay & Satapoomin, 1994

(New English name: Andaman grunter)

(Fig. 1 A–C)

Pomadasys sp. Hylleberg et al., 1993: 64, pl. 8-31 (photo only), Satapoomin, 1993: 71, 75 (list and distribution only).

Pomadasys andamanensis McKay & Satapoomin, 1994: 1, fig. 1.

Diagnosis. A small species of *Pomadasys* with the following combination of characters: dorsal fin rays XII, 13–14, anal fin rays III, 7–8; 50–53 pored lateral line scales plus 7–9 pored scales in scaly sheath on proximal part of caudal fin; gill rakers 5+1+11–12; 7–8 scales above lateral line, 14–16 scales below; circumpeduncular scales 9+2+11; no distinct dark spot on uppermost part of opercle; four longitudinal black or dark brown stripes with slight blue tinge on dorsal half of silvery-white body, first stripe running along spiny dorsal fin base from nape to bases of 9th or 10th dorsal spines, second stripe running from nape to mid-base of soft dorsal fin, third stripe originating just above posterior edge of eye, running straight to posterior end of soft dorsal fin base, continuing along dorsolateral surface of caudal peduncle to upper caudal fin base; fourth stripe originating on dorsal margin of eye, dropping obliquely behind eye and passing through posterior corner of opercle, thence straight to mid-base of caudal fin; greatest body depth 41.2–44.4% SL; second anal fin spine length

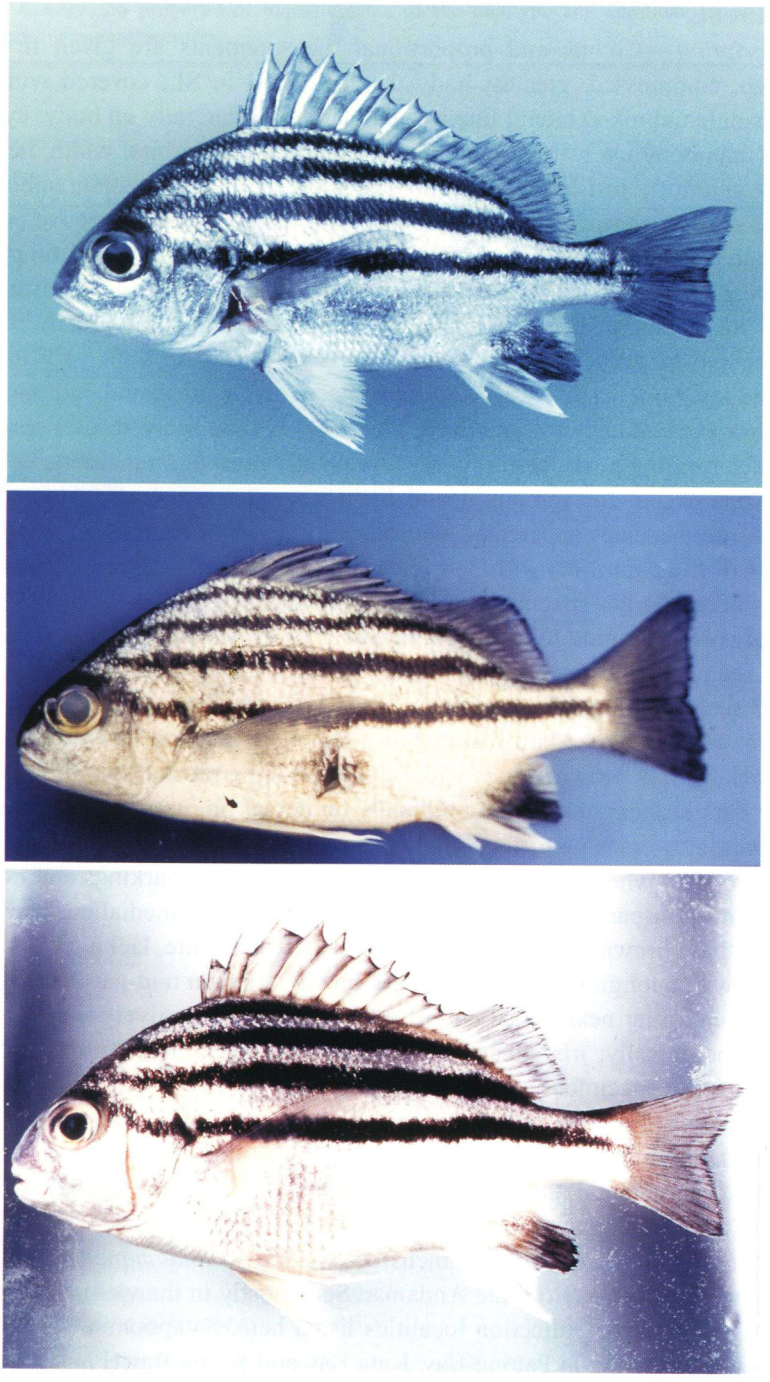

Fig. 1. *Pomadasys andamanensis*. Top) NSMT-P 31911, 134 mm SL; middle) PMBC 10068 (holotype), 154 mm SL; bottom) PMBC 14166, 156 mm SL. The thoracic region of NSMT-P 31911 and the abdomen of PMBC 10068 were damaged by spear.

20.3–23.1% SL.

Description. Counts and proportional measurements are given in Table 1. Body deep, compressed, greatest body depth 2.3–2.4 in SL, covered with ctenoid scales; a single unbroken lateral line in gentle arch mid-laterally on body; eye diameter larger than bony interorbital width, nearly equal to interorbital width; head scales extending anteriorly just behind eye; no scales on snout, lips or chin; subocular extension of scales covering cheek and preopercular flange; a central groove below chin with minute pores anteriorly (see Gloerfelt-Tarp & Kailola, 1984: fig. 1 on page 197); jaws lacking canines, small conical teeth present in narrow bands anteriorly, outermost row much enlarged; first anal fin spine short, second spine greatly robust and much longer than third; spinous and soft parts of dorsal fin with very low (0.5–1 scales) and low (1–2 scales) scaly sheath, respectively; spinous and soft parts of anal fin with low (1–3 scales) and relatively high (3–8 scales) scaly sheath, respectively; small scales forming a row along fin rays frequently present on membranes of dorsal and anal fins except for spinous dorsal fin where all specimens examined lacking scales; interradial scales apparently increase with growth, dorsal fin of smaller specimens (134.0–136.5 mm SL) with 3–8 scales on membranes between last spine to 7th soft ray, whereas larger specimens (154.1–178.0 mm SL) with 1–12 scales on membranes between last spine to 13th soft ray, anal fin of smaller specimens with 2–18 scales on membranes between second spine to 6th soft ray, whereas larger specimens with 3–23 scales on membranes between second spine to 7th soft ray.

Color when fresh. Main features of body color given in Diagnosis; second to fourth black or dark brown stripes wider than first uppermost stripe; three additional indistinct dark stripes running longitudinally on dorsal fin, uppermost stripe forming a black margin; spinous part of anal fin white, anterior two-thirds of soft anal fin dark brown, remainder white; pelvic fin white with some dusky markings anteriorly; pectoral fin semi-transparent with slightly dark upper margin, medial surface of upper pectoral fin base brown; caudal fin dark; opercle silvery-white, lacking a distinct dark blotch, but with a longitudinal black or dark brown stripe on mid-part and a faint dark spot on upper corner near dorsal end of gill opening; snout silvery-white with black or dark stripe dorsally; iris silvery-white in smallest specimen, yellowish or dusky-brownish in other specimens.

Color in alcohol. Body light tan with four longitudinal stripes as in fresh specimens; three longitudinal stripes running across dorsal fin; caudal fin with dark markings posteriorly; pectoral and pelvic fins light tan; spinous part of anal fin light tan, soft part of anal fin dark anteriorly, light tan posteriorly.

Distribution. All of the specimens of *Pomadasys andamanensis* examined in this study were collected from the Andaman Sea, mostly in the vicinity of Phuket Island. In addition to the collection localities listed here, Satapoomin (1993) reported the species as occurring in Patong Bay, Kata Bay and Karon Bay (Phuket Island) and Hinkrung Nok (Phang-Nga Province).

Table 1. Counts and proportional measurements of the holotype and additional specimens of *Pomadasys andamanensis*.

	PMBC 10068 Holotype	NSMT-P 31911	NSMT-P 55733	PMBC 14166	PMBC 14413
Standard length (mm)	154.1	134.0	136.5	156.0	178.0
Dorsal fin rays	XII, 14	XII, 13	XII, 14	XII, 13	XII, 14
Anal fin rays	III, 8	III, 7	III, 8	III, 8	III, 8
Pectoral and pelvic fin rays	17; I, 5	20; I, 5	17; I, 5	17; I, 5	16; I, 5
Pored lateral line scales+additional pored scales on scaly sheath of caudal fin	53+8	51+7	50+9	53+9	53+8
Scales above and below lateral line	7/14	8/16	7/14	7/14	7/14
Gill rakers (including rudiments)	5+1+12	5+1+11	5+1+11	5+1+12	5+1+11
Circumpeduncular scales	9+2+11	9+2+11	9+2+11	9+2+11	9+2+11
% of standard length					
Greatest body depth	42.1	42.2	44.1	44.4	41.2
Body depth at first anal fin spine origin	34.5	35.1	35.3	34.0	33.5
Head length	31.7	34.0	36.5	31.6	30.0
Body width	15.9*	19.6	18.4	19.2	17.2
Snout length	9.0	10.4	11.7	9.3	9.0
Orbit diameter	9.9	10.4	11.8	10.3	9.2
Preorbital depth	6.3	6.9	6.7	6.5	6.6
Interorbital width	8.3	9.0	9.5	8.3	8.7
Upper jaw length	8.5	9.5	10.3	9.5	8.4
Caudal peduncle depth	11.4	12.0	11.8	11.6	11.3
Caudal peduncle length	17.8	20.1	18.2	17.7	19.1
Predorsal length	42.3	43.6	45.1	42.6	41.2
Preanal length	63.1	64.3	65.2	64.6	65.2
Prepelvic length	35.1	38.3	38.8	35.7	34.4
Dorsal fin base	56.3	56.0	57.9	56.6	56.3
Anal fin base	16.7	15.7	16.0	17.0	16.3
Caudal fin length	20.1	25.5	26.4	21.8	20.9
Pelvic fin spine length	13.2	14.9	14.7	13.3	12.9
First pelvic fin ray length	28.7	29.9	24.9	29.5	28.9
Longest pectoral fin ray length	30.2	34.3	33.8	31.7	32.5
First dorsal fin spine length	5.3	6.3	6.4	5.6	3.7
Second dorsal fin spine length	9.8	10.4	10.3	10.1	9.8
Third dorsal fin spine length	17.5	18.9	17.4	16.4	15.5
Longest dorsal fin spine length (4th)	18.0	19.3	18.3	17.9	16.9
Last dorsal fin spine length	8.2	10.1	10.2	8.1	9.9
First dorsal fin ray length	13.6	16.3	22.5	13.0	14.6
First anal fin spine length	9.5	9.9	9.6	9.3	8.8
Second anal fin spine length	22.2	23.1	22.0	21.8	20.3
Third anal fin spine length	13.1	14.2	14.1	14.2	13.6
First anal fin ray length	17.8	19.6	20.1	16.6	17.9
Width of 2nd anal fin spine base	3.6	4.2	4.2	3.5	3.3
Postorbital length	16.2	16.3	16.5	16.0	15.6

* at one time dehydrated.

All of the examined specimens were collected at depths less than 5 m (over coral reefs or sandy bottoms with coral patches). According to Satapoomin (1993 and additional observations), *P. andamanensis* occurs in turbid waters in coral reef areas. It has not been collected from or seen in offshore waters.

Remarks. Ten Indo-West Pacific *Pomadasys* species are characterized by longitudinal stripes on the body, viz. *P. aheneus* McKay & Randall, 1995, *P. andamanensis* McKay & Satapoomin, 1994, *P. furcatus* (Bloch & Schneider, 1801), *P. guoraca* (Cuvier, 1829), *P. laurentino* Smith, 1953, *P. punctulatus* (Rüppell, 1838), *P. quadrilineatus* Shen & Lin, 1984, *P. striatus* (Gilchrist & Thompson, 1908), *P. stridens* (Forsskål, 1775) and *P. taeniatus* McKay & Randall, 1995. *Pomadasys andamanensis* differs from all of the other 9 species in the number, color and running pattern of the stripes. *Pomadasys striatus* and *P. stridens* are similar to *P. andamanensis* in having four dark stripes on the body but have the third and fourth stripes connected below the soft dorsal fin (Iwatsuki et al., 1995), whereas they are separated in *P. andamanensis*. The remaining striped *Pomadasys* species are distinguished from *P. andamanensis* as follows: *P. quadrilineatus* — five golden-yellow stripes on the body (Iwatsuki et al., 1995), *P. aheneus* — two brown stripes on the body, *P. guoraca* — longitudinal yellow stripes on scale rows below the lateral line, some 4–5 being distinct (McKay & Randall, 1995), *P furcatus* — 6–7 dark, often anteriorly bifurcated stripes on the body, *P. laurentino* known only from the holotype (RUSI 14, 143 mm SL collected from Mozambique) — 11 narrow dark stripes on the body, *P. punctulatus* 11–12 irregular narrow brown stripes on the upper two-thirds of the body (McKay & Randall, 1995) and *P. taeniatus* — 7 dark bronze stripes, which converge, without bifurcating, onto the head.

Specimens examined. *Pomadasys andamanensis* — Phuket Island, Thailand, Andaman Sea: PMBC 10068 (holotype), 154.1 mm SL, west coast, 5 m depth, 4 Mar. 1992, speared by U. Satapoomin; NSMT-P 31911, 55733, 134.0–136.5 mm SL, sandy bottom with coral patches, Nai Yang beach, 3 m depth, 14 Nov. 1986, speared by K. Matsuura; PMBC 14166, 156.0 mm SL, Bang Tao Bay, northwest coast, 8 Mar. 1998, bottom gillnet, local fisherman. Phang-nga Province, Thailand, Andaman Sea: PMBC 14413, 178.0 mm SL, off west coast of Yao-yai Island, 27 Mar. 1998, bottom gillnet, local fisherman. *Pomadasys furcatus* — URM-P 27521, 217 mm SL, Sam-Yaan, Bangkok, Thailand, Gulf of Thailand, 27 Nov. 1991. *Pomadasys laurentino* — RUSI 14, 143 mm SL, off Lourenco Marques, southern Mozambique Channel, ca. 60 fms, Mozambique. *Pomadasys quadrilineatus* — HUJF 17734, 116 mm SL, set net, Oshima, Nango, Miyazaki, Japan, 24 Oct. 1990; MUFS 8658, 123 mm SL, set net, Meitsu, Nango, Miyazaki, Japan, 18 May 1983; MUFS 8779, 102 mm SL, set net, Meitsu, Nango, Miyazaki, Japan, 21 Dec. 1990; MUFS 12259, 107 mm SL, Meitsu, Nango, Miyazaki, Japan, 14 June 1996; MUFS 14766, 114 mm SL, Meitsu, Nango, Miyazaki, Japan, 31 Jan. 1998; NSMT-P 45903, 99.5 mm SL, Naha, Okinawa Island, Japan, 31 Mar. 1973; NSMT-P 45904, 119 mm SL, set net, Akamizu, Nobeoka, Miyazaki, Japan, 30 June 1989; NTUM 05689 (paratype), 117 mm SL, Tachi, Taiwan, 8 Apr. 1978; URM-P 4286, 109 mm SL, Haneji Fish Market, Okinawa Island, Japan, 20 Jan. 1979. *Pomadasys striatus* — MUFS 9078–9087, 9 specimens, 96–164 mm SL, Natal, South Africa, 4 Aug. 1992; SAM 9950 (holotype), 153 mm SL, Natal, South Africa, collection date unknown. *Pomadasys stridens* — HUJF 6707 (4 specimens), 110–125 mm SL, Abu Zneima, Gulf of Suez, Red Sea, 30 Apr. 1970; HUJF 6708 (neotype), 114.5 mm SL, Massawa, Ethiopia, Red Sea; HUJF 12741, 134 mm SL, Haifa, eastern Mediterranean Sea,

8 Dec. 1987; MUFS 9689, 102 mm SL, Red Sea, collection date unknown; MUFS 10238 (10 specimens), 46–56 mm SL, Ras Sudar, Red Sea, collection date unknown, 1970.

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