Table 1 shows important diagnostic morphometric characters of this complex which includes *L. adetii* (Castelnau), *L. lutjanus* Bloch, *L. madras* (Valenciennes), *L. mizenkoi* Allen and Talbot, *L. ophuysenii* and *L. vitta*. *L. adetii* is characterized by the lack of an extension of the vomerine tooth patch and eleven dorsal spines. *L. lutjanus* has a flat interorbital, slender body, narrow preorbital and usually eleven spines (sometimes ten or twelve). *L. madras* has no dark spot on the side and the preorbital depth is about two-thirds of the eye diameter. *L. mizenkoi* is pinkish red with faint yellow horizontal lines, and predorsal scales extend forward to the rear part of the orbit (Allen and Talbot, 1985).

Remarks. Table 2 shows selected characters of the type materials of *Mesoprion ophuysenii* Bleeker, *M. enneacanthus* Bleeker, *M. phaiotaeniatus* Bleeker, and *Serranus vitta* Quoy and Gaimard.

Bleeker (1873) synonymized *M. enneacanthus* Bleeker 1849, *M. phaiotaeniatus* Bleeker 1849, and *M. ophuysenii* Bleeker 1860 with *Lutjanus vitta* (Quoy and Gaimard, 1824). He considered *L. ophuysenii* as a mere color variation. Allen and Talbot (1985) followed Bleeker's synonymy (1873) of these species. The characteristic spot has been described by many researchers (Temminck and Schlegel, 1843, 1845; Richardson, 1846; Jordan and Seale, 1905; Jordan and Thompson, 1911; Akazaki, 1984, and so forth). However, they failed to differentiate the two similar species.

Allen and Talbot (1985) listed the type locality of *L. ophuysenii* as Sumatra, but Bleeker (1860) mentioned two localities for the syntypes [120 mm and 199 mm total length (TL): Sumatra (Benkulen) and Japan (Nagasaki)]. Judging from his description, the larger specimen originated from Nagasaki, Japan, and the smaller specimen from Benkulen, Sumatra.

However, the Sumatra locality is probably erroneous. Our present investigation indicates that Sumatra is outside the distributional limits of *L. ophuysenii* (Fig. 4). Because of the strong possibility of an error in locality and Bleeker's failure to designate a holotype, we here designate the larger specimen (RMNH 31733, 154.5 mm SL) as the lectotype; the smaller specimen (RMNH 31734, 94.0 mm SL) becomes the paralectotype.

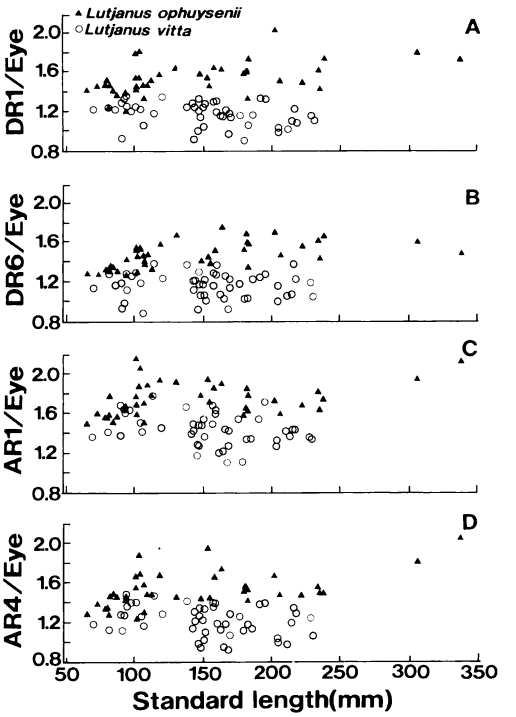

Fig. 5. Relationships between ratio of dorsal and anal soft ray lengths in eye diameter and standard length. A) DR1: first dorsal soft ray length in eye diameter; B) DR6: sixth dorsal soft ray length in eye diameter; C) AR1: first anal soft ray length in eye diameter; D) AR4: fourth anal soft ray length in eye diameter.

Lutjanus vitta (Quoy et Gaimard)
(English name: Brownstripe snapper)
(Japanese name: Tatefuedai)
(Figs. 1B, 3B, D, F, H)

Serranus vitta Quoy and Gaimard, 1824: 315, pl. 58, fig. 3 (Holotype: MNHN 8346, 91.0 mm SL, type locality, Waigiu); Cuvier and Valenciennes, 1828: 239 (Waigiu); Cuvier and Valenciennes, 1830: 505 (Tahiti, Waigiu).

Mesoprion enneacanthus Bleeker, 1849: 40 (Holotype RMNH 31732, 162.2 mm SL, type locality, Batavia = Jakarta); Günther, 1859: 209 (Indo-West Pacific); Kner, 1865: 33 (Java).

Mesoprion phaiotaeniatus Bleeker, 1849: 43 (Holotype: RMNH 31731, 186.0 mm SL, locality, Batavia = Jakarta).

Mesoprion vitta: Bleeker, 1849: 44; Günther, 1859: 207 (*L.*

vitta?) (Hong Kong); Kner, 1865: 37 (Java); Playfair, 1867: 18 (Zanzibar); Günther, 1880: 55 (*L. vitta* ?) (Hong Kong); Macleay, 1881: 330 (Australia); Macleay, 1882: 232 (New Guinea); Macleay, 1883: 255 (New Guinea).

Lutjanus vitta: Bleeker, 1863: 233 (Ternate); Bleeker, 1873: 25 (*Mesoprion enneacanthus* and *M. phaiotaeniatus*=*L. vitta*); Day, 1875: 46, pl. 14, fig. 2 (India); Bleeker, 1876–1877: 51, pl. 340, fig. 5 (*Mesoprion enneacanthus* and *M. phaiotaeniatus*=*L. vitta*); Fowler and Bean, 1922: 30 (Cebu, Philippines in one of two examples); Fowler, 1928: 196 (Philippines); Fowler, 1929b: 635 (Padang, Indonesia); Fowler, 1931: 138 (Philippines); Fowler, 1935: 147 (Thailand); Weber and de Beaufort, 1936: 250 (Indo-West Pacific); Grant, 1972: 203 (Queensland); Allen and Talbot, 1985: 76, pl. 10 (Indo-West Pacific); Allen, 1985: 123, pl. 22 (81a) (Indo-West Pacific).

Lutianus vitta: Evermann and Seale, 1907: 81 (Philippines); Jordan and Seale, 1907: 20 (Samoa); Seale and Bean, 1908: 243 (Philippines); Seale, 1910: 275 (Borneo, Philippines); Jordan and Starks, 1917: 449 (Ceylon); Kamohara, 1954: 110 (*L. vitta*?) (Kochi, Japan); Smith and Smith, 1963: 27 (Seychelles).

Lutjanus lutjanus (not of Bloch): Matsubara, 1955: 662 (southern Japan?); Akazaki, 1965: 301 (Kochi?, Amami Is.?, Indo-West Pacific); Masuda et al., 1975: 238, pl. 64-B (Okinawa, Japan); Shen, 1984: 59, pl. 59 (323–12) (Penghu Liedao, Taiwan); Akazaki, 1984: 165 in Japanese ed. and 170 in English ed., pl. 157K (Kochi?, Ryukyu Ids., Japan).

Lutjanus iita: Shinohara 1966: 265, fig 42. (probably misprint of "*vitta*") (Itoman, Okinawa, Japan).

Lutjanus vittus: Gloerferlt-Tarp and Kailola, 1984: 181, page 180 in figure (Sumatra, Indonesia).

Lutjanus sp.: Abe, 1987: 570, fig. No. 2278 (*L. vitta*?) (southern Japan?).

Materials. CAS 48364 (1: 104.4) and 55140 (1: 109.0), Thailand (12°37′37″N, 10°20′31″E and 12°08′N, 100°35′E to 12°21′N, 100°43′E), Apr. 24, 1960 and Apr. 29 to May 4, 1961; FRSKU 107533 (1: 94.6), New Caledonia, July 8 or August 6, 1968; FRSKU 108837–108838 (2: 103.4–230.0), 109919–109920 (2: 204.0–214.0), 110342–110343 (2: 143.0–228.5), 27479–27492 (14: 142.1–182.0), and S3509–S3511 (3: 149.9–211.0), Thailand (6°7.5′N, 103°36.0′E to 6°23.7′N, 103°30.3′E), May 6, 1957 and Nov. 1, 1970; MNHN 8346 (holotype of *Serranus vitta*) (1: 91.0), Waigiu, CDU; MUFS 2122 (1: 106.1), Singapore, Mar. 5, 1973; MUFS 2426 and 2516 (2: 120–157.5), Thailand, Mar. 25, 1973; MUFS 2587 (1: 137.5), Makou, Taiwan, Feb. 27, 1973; MUFS 3288 and 7461–7462 (3: 92.9–146.9), Singapore, Mar. 8, 1973 and Sept. 14, 1981; MUFS 8651–8655 (5: 86.3–114.3), Manila, Philippine, Mar. 15, 1984; RMNH 31731 (holotype of *Mesoprion pha-*

Table 1. Selected characters of species of the yellow-lined snapper complex

Character	*L. adetii**	*L. lutjanus**	*L. madras**	*L. mizenkoi**	*L. ophuysenii*	*L. vitta*
Dorsal	XI, 14	X–XII, 12	X, 13–14	X, 13	X, 12–13	X, 12–13
Lateral lines scales	48–51	48–50	47–50	47–50	46–49	49–52
Preorbital depth in head	4.4–4.9	9.2–14.6	5.8–8.9	6.2–6.5	4.3–7.5	4.7–8.6
Posterior extension of vomerine tooth patch	absent	present	present	present	present	present
Scales on lower pre-opercular flange	absent	present	present	absent	absent	present
Spot on striped body	absent	absent	absent	absent	present	absent
Stripes on side	single broad stripe mid-laterally	broad stripe mid-laterally and series of narrow yellow horizontal lines	broad stripe mid-laterally and series of narrow yellow horizontal lines	series of narrow yellow horizontal lines with mid-lateral ones slightly broader	broad dark brown to yellowish brown mid-laterally and series of narrow black brown lines	broad brown stripe mid-laterally and series of narrow brownish lines

* Including Allen and Talbot (1985).

iotaeniatus) (1: 186.0), Batavia=Jakarta, CDU; RMNH 31732 (holotype of *Mesoprion enneacanthus*) (1: 162.2), Batavia=Jakarta, CDU; URM 7199 (1: 195.0), Chinen, Okinawa, Japan, May 19, 1983; URM 12770 (1: 143.0), 13299 (1: 70.0), and 14456 (1: 217.5), Thailand, Nov. 6, 1983, Dec. 10, 1983, and May 19, 1984; URM 17205 (1: 216.0), Palau, Mar. 1, 1979; URM 22755–22757 (3: 81.2–157.5), New Caledonia, CDU; URM 26351 (1: 159.1), Okinawa, Japan, Sept. 5, 1991.

Diagnosis. Lateral-line scales 49–52 (52 in three of 50 specimens); small scales present on lower preopercular flange (Fig. 2B); no spot superimposed on longitudinal dark stripe in any stage (Figs. 1C, 3B, D, F, H); longitudinal stripe extending from behind eye to scaly base of caudal fin in preserved specimens less than 100 mm SL but, indistinct on caudal peduncle of larger fish; the width of the stripe on upper operculum not changed with growth; the width of longitudinal stripe on body almost equal to pupil diameter when less than 100 mm SL and narrower than pupil when over than 150 mm SL; color of anterior portion of the stripe brown to goldish brown; fins yellow except in pelvic fins which are slightly whitish with light yellow hue; a narrow white or transparent margin present on soft dorsal and anal fins in life; first and sixth dorsal soft rays lengths ratios in eye diameter 0.90–1.35 and 0.89–1.39, respectively (Fig. 5B); first and fourth and anal soft rays lengths ratios in eye diameter 1.10–1.71 and 0.95–1.49, respectively (Fig. 5B).

Description. Dorsal X, 12–13; anal III, 8; pectoral rays 16–17; lateral-line scales 49–52 (52 in three of 50 specimens); horizontal scale rows above and below lateral-line scales 8–10 and 15–19, respectively; scale rows on cheek 5–7 except on small scales of lower preopercular flange (Fig. 2B) (this small scale present apart from cheek scales and variable, observed in one row, irregular one row, and two rows at the upper scales although one row at the lower

Table 2. Selected characteristics of the type specimens of *Lutjanus ophuysenii* and *L. vitta*

Character	*L. ophuysenii* RMNH 31733 (Lectotype) 154.5 mm SL	RMNH 31734 (Para-lectotype) 94.0 mm SL	*L. vitta* MNHN 8346 (Holotype of *Serranus vitta*) 91.0 mm SL	RMNH 31732 (Holotype of *Mesoprion enneacanthus*) 162.2 mm SL	RMNH 31731 (Holotype of *Mesoprion phaiotaeniatus*) 186.0 mm SL
D. & A.	X, 13 & III, 8	X, 13 & III, 8	X, 13 & III, 8	X, 13 & III, 8	X,* 13 & III, 8
Lateral-line scales	48	47	51	50	50
Gill rakers**	7(2)+14(4)	6(2)+13(3)	7(2)+14(3)	8(2)+13(5)	7(5)+11(2)
Eye diameter in head	3.79	3.54	3.36	3.95	3.79
Body depth in SL	2.87	2.81	2.73	2.95	2.93
First dorsal and first anal soft rays in eye diameter	1.47 and 1.72	1.21 and 1.68	0.92 and 1.38	1.16 and 1.34	1.15 and 1.21
Posterior extension of vomerine tooth patch	present	present	present	present	present
Scales on preopercular flange	absent	absent	present	present	present
Spot on body	present	present	absent	absent	absent
Stripe on side	faint but unclear on peduncle	faint but unclear on peduncle	broad and clearly evident to scaly base of caudal fin	narrow and clearly evident	very faint
Position of greatest depth	mid-point of standard length	mid-point of standard length	base of ventral fin	base of ventral fin	base of ventral fin
Small & thin ossified patch in front of the lingual tooth patch	absent	absent	absent	present	present

*First dorsal spine was broken but included in total; **gill rakers include rudiments (in parentheses).

scales); total gill rakers on first gill arch 6–8 + 10–15 = 17–22 (including 4–6 + 2–6 rudiments). Body depth 2.57–3.15, head length 2.50–3.06, both in SL. Snout 2.87–3.65, eye 3.03–4.91, interorbital 4.31–6.84, maxilla 2.00–2.81 and preorbital depth 4.70–8.61, all in head length.

Scale rows on back rising obliquely above lateral line scales. Preopercular notch shallow (Fig. 2B); interopercular knob weak. Vomerine teeth in a triangular or diamond-shaped patch with a medial posterior extension. Tongue with a patch of a fine granular teeth. Small ossified and thin patch in front of the lingual tooth patch often present (see Comparison in *Lutjanus ophuysenii*). Caudal fin slightly emarginate.

Color in life.—Generally pinkish dark brown on body with dark brown lines (one per scale row) on side, those above lateral line slanted posteriorly toward dorsal-fin base and often whitish on abdomen; no spot superimposed on longitudinal stripe (Figs. 1C, 3B, D, F, H) at any stage; a narrow white or transparent margin present on soft dorsal and anal fins in life, especially in fish exceeding ca. 15 cm SL; color of entire stripe brown to goldish brown; snout black or dark yellowish; fins yellow except pelvics which are slightly whitish with light yellow hue; iris reddish yellow.

Body color change with growth.—The width of the longitudinal stripe on the body is nearly equal to the pupil diameter in fish less than 150 mm SL, then becomes narrower than the pupil in larger specimens. The stripe may disappear posteriorly in specimens over 20 cm SL; the mid-lateral stripe of smaller individuals is usually continuous from the front edge of the eye to the snout tip.

Color in preserved specimens.—Generally yellowish tan, including fins, with longitudinal brown lines on side and oblique lines above lateral line as described above.

Body color change with growth in preserved specimens.—Similar to changes described above for live specimens.

Distribution. *Lutjanus vitta* is widely distributed in the Indo-West Pacific region, but is not observed from southern Japan (except in Ryukyu Ids.) where *L. ophuysenii* is found (Fig. 4). *L. vitta* and *L. ophuysenii* are mainly allopatric except they are sympatric in southwestern Taiwan and the vicinity of Hong Kong.

Ecological notes. Adults are usually captured or observed between within 10–40 m depth (Allen and Talbot, 1985 and our examined localities), but we collected individuals under about 10 cm SL in less than 10 m depth. This species seems to migrate from shallow areas to deeper areas with increased growth.

According to diving observations of Murdy (1979) in Luzon, Philippines, an individual ca. 20 cm TL in *Lutjanus vitta* occured in February at artificial reef sites (scrap rubber tires) and sea grass beds (*Enhalus* sp.). He considered this species as semi-resident.

Comparison. This species is most similar to *Lutjanus ophuysenii* but differs in the characters already discussed in the comparison section of *L. ophuysenii.*

Remarks. The holotype of Serranus vitta (MNHN 8346) is in good condition (Fig. 1C). It is 91.0 mm SL and has vivid dark brown longitudinal stripe extending from behind eye to the scaly base of caudal fin. Important characters of this specimen are summarized in Tables 1 and 2.

Comparative Material

Lutjanus adetii: AMS 15384-001 (1: 119.0), south of One Tree I., Capricorn Group, Queensland, Feb. 5, 1969. *L. lutjanus*: MUFS 2569 (1: 126.0), Toukou, Taiwan, Feb. 25, 1973; MUFS 2826 and 2829 (2: 107.5–135.1), Penan, Mar. 20, 1970; MUFS 3283 and 3286 (2: 111.0–115.5), Singapore, Mar. 8–14, 1973. L. madras: FRSKU 100360 (1: 166.5), Tong King Bay, Vietnam, Dec. 16, 1970; FRSKU 108811 (1: 151.0), Gulf of Thailand (6°07.5′N 103°36.0′E), May 6, 1957; FRSKU 110466 (1: 144.0), Thailand, CDU; FRSKU 111691 (1: 159.5), Songkla, Thailand, CDU. *L. mizenkoi*: WAM P28314-001 (paratype) (1: 224.0), Western Samoa, Aug. 21, 1982.

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ヨコスジフエダイとタテフエダイの分類学的再検討

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体側に眼状斑を持つヨコスジフエダイと眼状斑を持たないタテフエダイは日本では区別されてきたが，両者は最近同種としてタテフエダイ，*Lutjanus vitta* (Quoy et Gaimard) とされた．タテフエダイの特徴は稚魚期に眼状斑を持ち，その眼状斑は成長とともに消えるとされるが，日本でみられるヨコスジフエダイは生涯この眼状斑を持っており，タテフエダイの記載は不十分である考えられた．そこで両者の再検討を行った．ヨコスジフエダイは体側縦線上に眼状斑を生涯持ち，前鰓蓋骨後部下縁に小鱗を持たない，側線鱗数は 46–49 であり，背鰭及び臀鰭軟条の伸び率が大きい（背鰭第 1 軟条 1.2–2.0; 臀鰭第 1 軟条 1.5–2.2）が，タテフエダイは体側縦線上に生涯眼状斑を持たず，前鰓蓋骨後下縁に小鱗を持ち，側線鱗数は 49–52 であり，背鰭及び臀鰭軟条の伸び率が小さい（背鰭第 1 軟条 0.9–1.4; 臀鰭第 1 軟条 1.1–1.7）ことで両者は明かに区別出来た．更に両者の分布域は，台湾西南部及び香港周辺においては重なっているものの，ヨコスジフエダイは南日本から（琉球列島を除く）山陰地方，韓国南部，黄海，台湾西部及び香港周辺の東アジア大陸棚上の限定した海域にのみ分布するのに対し，タテフエダイはヨコスジフエダイの分布域以外のインド—西太平洋（日本の琉球列島を含む）の熱帯域から亜熱帯域に広く分布していた．これらの点から，両者は別種として判断された．尚，ヨコスジフエダイの学名は日本の長崎を模式産地とする *L. ophuysenii* (Bleeker) が有効であり，タテフエダイの学名はスマトラを模式産地とする *L. vitta* (Quoy et Gaimard) が正しい．

（岩槻：〒889–21 宮崎市学園木花台西 1–1　宮崎大学農学部動物生産学科；赤崎：〒880 宮崎市北方町牟タ田 1158–3；吉野：〒930–01 沖縄県中頭郡西原町千原 1　琉球大学理学部海洋学科）