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Classification of the Lutjanid Fish Genus *Pristipomoides* (Percoidei)

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Abstract Eleven species of the genus *Pristipomoides* were examined on the basis of external and internal characteristics. A new and unique characteristic is described by which this genus can be distinguished from all other genera of the Etelinae, namely, a lack of congregated scales (>6) on the upper part of the cleithrum. The genus *Pristipomoides* is divided into two subgenera, *Pristipomoides* and *Platyinius*, on the basis of distinct features, such as the length of the last dorsal and anal ray, and the structure of hypural, prootic, basioccipital, exoccipital, and first anal pterygiophore. *Pristipomoides typus*, *P. multidens*, *P. filamentosus*, *P. flavipinnis*, *P. auricilla* and *P. sieboldii* of the Indo-Western Pacific belong to the subgenus *Pristipomoides*. *Pristipomoides zonatus* and *P. argyrogrammicus* of the Indo-Western Pacific and *P. macrophthalmus*, *P. aquilonaris* and *P. freemani* of the Western Atlantic are placed in the subgenus *Platyinius*. *Tropidinius* which *P. zonatus* and *P. argyrogrammicus* were previously recognized as belonging to is a junior synonym of *Apsilus* (subfamily Apsilinae).

Two species of eteline snappers, *Pristipomoides* (*Platyinius*) *zonatus* (Valenciennes) and *P.* (*Pl.*) *argyrogrammicus* (Valenciennes), that are widely distributed in the Indo-Pacific region have been placed in the genus *Tropidinius* by many previous authors including Fowler (1931), Smith (1949), Tomiyama et al. (1958), Akazaki (1965), Shinohara (1966), Masuda et al. (1975), Rau and Rau (1980), Allen (1984) and Yoshino (1984). However, there has been universal agreement on the placement of nine other species in the genus *Pristipomoides*. These include *Pristipomoides* (*Pristipomoides*) *typus* Bleeker, *P.* (*Pr.*) *multidens* (Day), *P.* (*Pr.*) *filamentosus* (Valenciennes), *P.* (*Pr.*) *flavipinnis* Shinohara, *P.* (*Pr.*) *auricilla* (Jordan, Evermann et Tanaka), and *P.* (*Pr.*) *sieboldii* (Bleeker) from the Indo-Pacific and *Pristipomoides* (*Platyinius*) *macrophthalmus* (Müller et Troschel), *P.* (*Pl.*) *aquilonaris* (Goode et Bean) and *P.* (*Pl.*) *freemani* Anderson from the western Atlantic.

Shinohara (1966) provides information on external and anatomical differences between *Tropidinius* and *Pristipomoides*. However, he did not examine the related western Atlantic species as his work was limited to the lutjanid fishes of the Ryukyu Islands, Japan.

Johnnson (1980) synonymized *Tropidinus* with *Pristipomoides*, but failed to give an evidence. Allen (1985) followed his classification and recognized eleven species of *Pristipomoides*.

The definitions of the genus *Pristipomoides* and the genus *Tropidinius* given by previous authors are not clear and it is uncertain why these eleven species are considered to belong to one genus. Therefore, we have examined the generic status of *Pristipomoides* and *Tropidinius* by comparing the 11 known species. A classification of *Pristipomoides* is proposed herein and the group is compared with other genera of the Etelinae and the genus *Apsilus* of the Apsilinae.

Material and methods

Specimens examined are deposited in the following institutions: California Academy of Sciences, San Francisco (CAS); Department of Fisheries, Miyazaki University, Miyazaki (MUDF); Stanford University, specimens now deposited at CAS, (SU); Rosenstiel School of Marine and Atmospheric Science of the University of Miami, Florida (UMML); University of the Ryukyus, Okinawa (URB); National Museum of Natural History, Smithsonian Institution, Washington, D. C. (USNM); Department of Zoology, University Museum, University of Tokyo (ZUMT). Specimens were dissected into suborbital, jaws, urohyal, pelvic girdle, shoulder girdle, hyoid apparatus, suspensorium and opercular apparatus, cranium and others. These bones were stained in acetic acid, saturated with Alizarin red S, after muscle tissue was removed and stored in 70% alcohol.

Illustrations were made with the aid of a drawing attachment on a dissecting microscope. The predorsal bone formula follows Johnson's modification (1980). The material examined during the course of this investigation is listed below with catalogue number, the number of specimen(s), abbreviation of examination method and standard length(mm). The following abbreviations indicate the type of examination or preparation involved: E, external counts and observations; X, radiograph; P, partial dissection of head; D, dissection and staining of skeleton. Identification was based on Anderson (1966, 1967), Senta and Tan (1975), Yoshino (1984) and Allen (1984, 1985).

Genus *Pristipomoides*

Subgenus *Pristipomoides*

P. (*Pr.*) *auricilla*, MUDF 8442, 1 specimen, E X D, 261.9 mm SL; MUDF 1847, 1 specimen, X, about 250 mm SL; CAS 348 (Holotype), 1 specimen, E 243.0 mm SL; ZUMT 4005, 1 specimen, E, 273.0 mm SL; ZUMT 55–93, 1 specimen, E, 339.0 mm SL. *P.* (*Pr.*) *filamentosus*, MUDF 3308, 1 specimen, E X P, 508.5 mm SL; ZUMT 19518, 1 specimen, E, 305.0 mm SL; ZUMT 49755, 1 specimen, E, 375.0 mm SL; ZUMT 18146, 1 specimen, E, 474.0 mm SL; ZUMT 18147, 1 specimen, E, 420.0 mm SL. *P.* (*Pr.*) *flavipinnis*, MUDF 3326, 1 specimen, E X P, 359.0 mm SL; ZUMT 46608, 2 specimens, E, 202.0 and 198.0 mm SL; ZUMT 51921, 1 specimen, E, 305.0 mm SL. *P.* (*Pr.*) *multidens*, MUDF 1709, 1 specimen, E X P, 336.0 mm SL; MUDF 3272, 1 specimen, E X D, 178.0 mm SL; MUDF 2917, 1 specimen, E X, 430.0 mm SL; ZUMT 46827, 1 specimen, E, 307.0 mm SL; ZUMT 52205, 1 specimen, E, 190.0 mm SL. *P.* (*Pr.*) *sieboldii*, MUDF 1749, 1 specimen, E X P, 211.0 mm SL; MUDF 1824, 1 specimen, E X P, 157.0 mm SL; MUDF 8487, 1 specimen, E, 219.5 mm SL; MUDF 8488, 1 specimen, E, 290.0 mm SL; ZUMT 50534, 1 specimen, E, 293.0 mm SL; ZUMT uncat., 2 specimens, E, 293.0 and 159.0 mm SL; ZUMT 9556, 2 specimens, E, 154.0 and 156.0 mm SL. *P.* (*Pr.*) *typus*, MUDF 2912, 1 specimen, E X P, 359.0 mm SL; MUDF 2913, 1 specimen, E X, 409.5 mm SL.

Subgenus *Platyinius*

P. (*Pl.*) *argyrogrammicus* MUDF 1745, 1 specimen, E X D, 164.0 mm SL; MUDF uncat., 1 specimen, X, about 250 mm SL; SU 21420 (syntype of *Platyinius amoenus*), 1 specimen, E, 194.7 mm SL; ZUMT 52581, 1 specimen, E, 215.0 mm SL; ZUMT 10646, 1 specimen, E, 281.0 mm SL; ZUMT 31580, 1 specimen, E, 243.0 mm SL; ZUMT 14410, 1 specimen, E, 182.0 mm SL; ZUMT 3517, 1 specimen, E, 138.0 mm SL; ZUMT 14000, 1 specimen, E, 162.0 mm SL; ZUMT 14443, 1 specimen, E, 175.0 mm SL; ZUMT 15225, 1 specimen, E, 115.0 mm SL; ZUMT 9816, 1 specimen, E, 267.0 mm SL. *P.* (*Pl.*) *aquilonaris*, UMML 27087, 2 specimens, E X D, 119.8 and 149.1 mm SL; UMML 30720, 1 specimen, E, 108.0 mm SL; UMML 28664, 1 specimen, E, 164.5 mm SL. *P.* (*Pl.*) *freemani*, UMML 27248, 2 specimens, E X D (158.0 mm SL), 150.5 mm SL; SU 63300 (paratype), 1 specimen, E, 132.5 mm SL. *P.* (*Pl.*) *macrophthalmus*, UMML 1159, 2 specimens, E X D (132.1 mm SL), 108.3 mm SL; UMML uncat., 2 specimens, E X, 169.7 and 138.0 mm SL. *P.* (*Pl.*) *zonatus*, MUDF 1845, 1 specimen, E X P, 276.0 mm SL.

Other genera of Etelinae and Apsilinae

Aphareus furcatus, MUDF 1863, 1 specimen, E X D, 239.5 mm SL; MUDF 8335, 1 specimen, E X, 121.5 mm SL; ZUMT 6785, 1 specimen, E, 130.0 mm SL. *A. rutilans*, ZUMT 13939, 1 specimen, E, 153.0 mm SL. *Aprion virescens*, MUDF 8421, 1 specimen, E X D, 178.2 mm SL; MUDF 1862, 1 specimen, E X, 276.5 mm SL; ZUMT 4010, 1 specimen, E, 271.0 mm SL; ZUMT 42421, 1 specimen, E, 167.0 mm SL; ZUMT 34149, 1 specimen, E, 226.0 mm SL; ZUMT 42420, 1 specimen, E, 177.0 mm SL. *Etelis carbunculus*, MUDF 8449, 1 specimen, E X D, 241.9 mm SL; MUDF 1746, 1 specimen, X, 253.0 mm SL; MUDF 6984, 1 specimen, E X, 227.0 mm SL; ZUMT 8728, 1 specimen, E, 284.0 mm SL; ZUMT 14415, 1 specimen, E, 257.0 mm SL. *E. corsucans*, MUDF 1748, 1 specimen, E X, 261.0 mm SL; MUDF 6073, 1 specimen, X, about 250 mm SL; MUDF uncat., 1 specimen, D, about 500 mm SL; MUDF 6937, 1 specimen, E X, 287.0 mm SL; MUDF 6853, 1 specimen, X, about 300 mm SL; MUDF 3373, 1 specimen, E, 181.5 mm SL; ZUMT 9815, 1 specimen, E, 237.0 mm SL; ZUMT 50533, 1 specimen, E, 264.0 mm SL; ZUMT 7670, 1 specimen, E, 250.0 mm SL; ZUMT 4240, 1 specimen, E, 221.0 mm SL. *E. oculatus*, UMML 28797, 1 specimen, 78.0 mm SL; USNM uncat., 1 specimen, E, 136.5 mm SL. *Randallichthys filamentosus*, URB-78-0110, 1 specimen, E, 424.0 mm SL, URB-78-0111, 1 specimen, E, 415.0 mm SL; URB uncat., 1 specimen, E, 487.0 mm SL. *Apsilus dentatus*, UMML 32770, 1 specimen, E X, 353.1 mm SL; UMML 33750, 2 specimens, E X D (256.0 mm SL), 255.5 mm SL. *A. fuscus*, USNM 265097, 3 specimens, E X, about 250–300 mm SL.

Genus *Pristipomoides* Bleeker, 1852

Chaetopterus Temminck and Schlegel, 1844: pts. V–VI, 78 (preoccupied in Annelida (Cuvier, 1830)). Type-species *Chaetopterus sieboldii* Bleeker.

Pristipomoides Bleeker, 1852: 574. Type-species *Pristipomoides typus* Bleeker.

Platyinius Gill, 1862: 237. Type-species *Mesoprion*

vorax Poey (=*P.* (*Pl.*) *macrophthalmus* (Müller et Troschel)).

Bowersia Jordan and Evermann, 1904: 182. Type-species *Bowersia violescens* Jordan et Evermann (=*P.* (*Pr.*) *sieboldii* (Bleeker)).

Etelides Jordan and Thompson, 1905: 241. Type-species *Anthias aquilonaris* Goode et Bean.

Rooseveltia Jordan and Evermann in Jordan and Seal, 1906: 265. Type-species *Rooseveltia aloha* Jordan et Snyder (=*P.* (*Pl.*) *zonatus* (Cuvier et Valenciennes)).

Ulaula Jordan and Thompson, 1911: 459. Type-species *Bowersia ulaula* Jordan et Evermann (=*P.* (*Pr.*) *sieboldii* (Bleeker)).

Arnillo Jordan et al., 1927: 4. Typespecies *Arnillo auricilla* Jordan, Evermann et Tanaka.

Diagnosis. External: D. X, 11; A. III, 8; V. I, 5; P.(15)16(17); Principal caudal rays 8+9; no congregated scales (except 1–4 very small scales sometimes present in *P.* (*Pr.*) *sieboldii*) on the upper part of the cleithrum (Fig. 1B); body elongate or moderately deep and moderately compressed; dorsal fin continuous, no scales on dorsal and anal fin, the last dorsal and anal rays produced, 1.1–2.2 times in length of penultimate one; caudal fin forked; scales ctenoid, lateral line complete; scale rows above and below lateral line parallel to lateral line; interorbital nearly flat or slightly convex; congregated scales in temporal present apart from cheek, opercular and predorsal scales; no scales on maxillary and preopercular flange; scales present on cheek, operculum, bases of pectoral and caudal fins; maxillary largely slipping into below lachrymal; bands of villiform teeth on both jaws, the outer series somewhat enlarged and canine-like; villiform teeth on vomer and palatines; teeth on tongue absent (except in *P.* (*Pr.*) *sieboldii*); eye relatively large; preopercle weakly serrated without notch on vertical limb near angle, anterior margin of the preopercle folded over to form a lip, distal end of the folded margin not thick and not fused; opercle with a flat spine not extending to posterior margin of soft membrane.

Internal: neurocranium with the occipital region demarcated from the frontal region by a transverse ridge formed by a thickening and abrupt thinning of the frontals posteriorly; dorso-posterior part of the supraethmoid wide; no frontal crest; pterosphenoids meeting in midline; lachrymal oblong; posterior extension of epiotic absent; anterior and posterior ventral surface of urohyal concave and wide, and narrow, respectively; ventral surface of parasphenoid concave; posterior extension of ectopterygoid present, extending between the endopterygoid and quadrate; post maxillary process wide; outside and inside hyoid arch between posterior ceratohyal and anterior epihyal not fused and fused respectively; accessary subpelvic keel present; predorsal formula 0/0/0+2/1+1; first epural very long (Fig. 2); epipleurals 7(8); trisegmental bones 4–5; dorsal and ventral procurrent rays 11–13; vertebrae 10+14.

Remarks. On the basis of this study, species of the subfamily Etelinae generally have the following significant characteristics: D. X, 11; A. III, 8 (9 in *Randallichthys*); dorsal and anal fins scaleless; last dorsal and anal ray produced (ultimate ray longer than penultimate); nostrils of each side closely set; hypurals 1–2 and 3–4 typically fused (completely separated in the subgenus *Platyinius* and the genus *Randallichthys*); accessary subpelvic keel typically present; predorsal formula typically 0/0/0+2/1+1 (0/0/2/1+1 in *Aprion*); ventral surface of parasphenoid concave (flat in *Aphareus*); first epural very long and slender; anterior margin of the preopercle folded over to form a lip, distal end of the folded margin not thick and not fused; anterior ventral surface of urohyal concave and wide (not concave and narrow in *Aphareus*). These and other important characteristics of the eteline genera studied are listed in Table 1. There are unique characteristics in each genus of the Etelinae. For example, the species of the genus *Etelis* have the scaled maxillary and a deeply incised dorsal fin. *Randallichthys* is characterized by nine rays in the anal fin. Only *Aprion* has two predorsal bones and short pectoral fins. *Aphareus* has no teeth on its vomer and minute teeth on the jaws. However, the eleven species of the genus *Pristipomoides* in this study have none of the above features. Unique characteristics of the genus *Pristipomoides* have not previously been described, but we found that the group can be distinguished by the lack of scales (except 1–4 very small scales present in *P.* (*Pr.*) *sieboldii*) on the upper portion of the cleithrum (Fig. 1B). However, other genera have a congregation of 6–23 scales on the cleithrum apart from the body scles (Fig. 1A) except in *Aphareus* where the congregated scales of the cleithrum are confluent with the body scales.

Species of the Etelinae except *Pristipomoides*

have a congregation of over 6 scales on upper part of the cleithrum. The only species of *Pristipomoides* with scales in this portion is *P.* (*Pr.*) *sieboldii* which has 1–3(rarely 4) small scales separated from the body scales by a naked area. Only two of 10 specimens examined in this study, MUDF 1749 (SL 211.0 mm) and MUDF 1824 (SL 157.0 mm) of this species lacked these scales. Further, we examined about fifty specimens of this species at Tsukiji Fish Market in Tokyo (probably caught from Miyake I. or Hachijo I.). All these specimens had 1–2 small scales on the cleithrum. A small scale was found in a specimen of *P.* (*Pr.*) *auricilla* from Okinawa (MUDF 8442, SL 261.9 mm) on the right side cleithrum. However, no scales were observed in the holotype (CAS 348, SL 243.0 mm) and other specimens of this species. Judging from these facts, we conclude that 11 species in *Pristipomides* except *P.* (*Pr.*) *sieboldii* usually lack congregated scales on the cleithrum.

Johnson (1980) characterized the genus *Pristipomoides* by the following features: maxillary without scales, pterosphenoids meeting in midline, adductor mandibulae section A_1 with an anterodorsal extension, and dorsal not incised. However, these characters are not unique. For example, *Aphareus* has pterosphenoids and *Aprion* has an adductor mandibulae of the same type each.

We could not find any clear differences that would distinguish *Pristipomoides* and *Platyinius* at generic level. Shinohara (1966) differentiated his *Pristipomoides* from his *Tropidinius* by the more slender body shape. However, the body shape *Pr.* (*Pl.*) *freemani* from the Western Atlantic is slender.

Subgenus *Pristipomoides* Bleeker, 1852

Body long; extension rate in last dorsal and anal rays 1.52–2.24 (last ray/penultimate); vomerine tooth patch ranging from chevron to anchor-shaped; dorso-posterior part of the supraethmoid wide; region of prootic, basioccipital and exoccipital feebly convex; hypural bones 1–2 and 3–4 fused; first anal pterygiophore thick and

Table 1. Comparison of important external and internal characteristics among the genera of the Etelinae. * Data are personally received from Mr. T. Yoshino. ** Data are based on Anderson et al. (1977) and Johnson (1980). (—) These are not observed.

		Etelis	*Randall-ichthys*	*Aprion*	*Aphareus*	*Pristipo-moides*
1.	Dorsal	X, 11	X, 11	X, 11	X, 11	X, 11
2.	Anal	III, 8	III, 9	III, 8	III, 8	III, 8
3.	Last dorsal & anal ray	long	long	long	long	long
4.	Scales on maxillary	present	absent	absent	absent	absent
5.	Dorsal type	incised	continuous	continuous	continuous	continuous
6.	Pectoral type	long	long	short	long	long
7.	Teeth on vomer	present	present	present	absent	present
8.	Teeth on jaws	moderate	moderate	moderate	minute	moderate
9.	Congregated scales on cleithrum	present (8–23 scales)	present* (21–23 scales)	present (6–9 scales)	present (over 15 scales)	absent (1–4 scales present in *P.* (*Pr.*) *sieboldii*)
10.	Predorsal bones	3	3**	2	3	3
11.	Ventral surface of parasphenoid	concave	(—)	concave	flat	concave
12.	Anterior margin of preopercle	folded over to form a lip	(—)	folded over to form a lip	folded over to form a lip	folded over to form a lip
13.	Ventral surface of anterior urohyal	concave & wide	(—)	concave & wide	narrow	concave & wide
14.	First epural	very long	(—)	very long	very long	very long
15.	First anal pterygiophore	slender & curved	(—)	slender & curved	slender & curved	slender & curved or thick & straight

Fig. 1. Lateral right aspect of the upper part of cleithrum including the portion near the base of pectoral. A and B show the presence and the absence of the scales on cleithrum respectively. A, *Aprion virescens*, MUDF 1862, SL 276.5 mm; B, *Pristipomoides* (*Pristipomoides*) *typus*, MUDF 2912, SL 359.0 mm.

straight.

Subgenus *Platyinius* Gill, 1862

Body moderately deep or slender; extension rate in last dorsal and anal rays 1.08–1.43 (last ray/penultimate); vomerine tooth patch chevron-shaped; dorso-posterior part of the supraethmoid ***narrow***; region of prootic, basioccipital and exoccipital strongly convex and rounded; each hypural bone completely separated; first anal pterygiophore slender and curved anteriorly.

Remarks. Comparison of important external and internal characteristics of the eleven species of *Pristipomoides* is given in Table 2. There are several differences which are apparent between the subgenus *Pristipomoides* and the subgenus *Platyinius*: 1) hypurals 1–2 and 3–4 are fused in *Pristipomoides* and separated in *Platyinius* (Fig. 2); 2) the extension rate of the last dorsal and anal (last ray/penultimate ray) in species of the subgenus *Pristipomoides* is 1.52–2.24 and that in species of the subgenus *Platyinius* is 1.08–1.43. Thus, *Pristipomoides* has very long last dorsal and anal rays while these rays are shorter in the subgenus *Platyinus*. Fishes of the Etelinae generally have a longer last ray than the penultimate

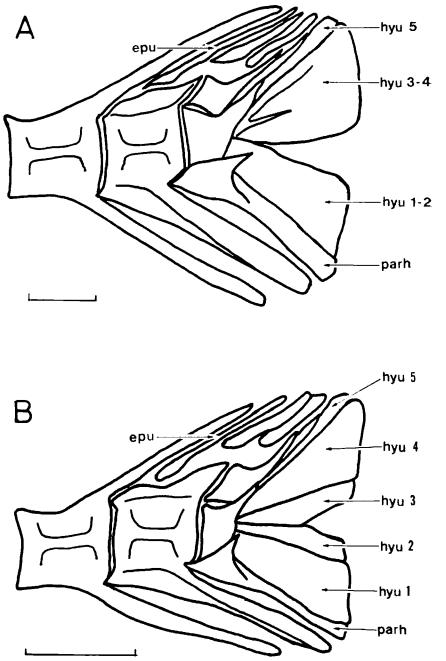

Fig. 2. Lateral aspect of the posterior elements of vertebrae. A shows that hypurals 1–2 and 3–4 are fused. B shows that each hypural is perfectly separated. A, *Pristipomoides* (*Pristipomoides*) *auricilla*; B, *Pristipomoides* (*Platyinius*) *argyrogrammicus*. Scales 5 mm. hyu, 1st to 5th hypural; parh, parhypural; epu, epural.

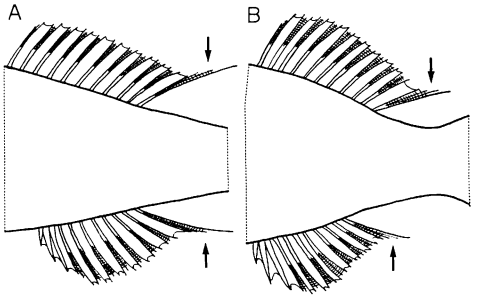

Fig. 3. Lateral aspect of dorsal and anal fin rays. A shows the long last rays in *Pristipomoides* (*Pristipomoides*) *sieboldii*. B shows the shorter last rays in *Pristipomoides* (*Platyinius*) *macrophthalmus*.

Table 2. Comparison of important external and internal characteristics in the subgenus *Pristipomoides* and the subgenus *Platyinius*. * Abbreviation shows supraethmoid (SRPE). ** Abbreviations show prootic (PRO), basioccipital (BOC) and exoccipital (EOC).

	Items	*Pristipomoides*						*Platyinius*				
		typus	*multi-dens*	*filamen-tosus*	*flavi-pinnis*	*auricilla*	*sieboldii*	*macroph-thalmus*	*aquilo-naris*	*freemani*	*argyrogr-ammicus*	*zonatus*
1.	Dorsal	X, 11	X, 11	X, 11	X, 11	X, 11	X, 11	X, 11	X, 11	X, 11	X, 11	X, 11
2.	Anal	III, 8	III, 8	III, 8	III, 8	III, 8	III, 8	III, 8	III, 8	III, 8	III, 8	III, 8
3.	Pectoral	16	16	16	16	16	16–17	15–16	15–16	16	15–16	17
4.	Last dorsal ray/ penultimate	1.90	1.65–1.86	1.80–2.16	1.65–1.83	1.52–1.89	1.62–2.00	1.25–1.27	1.29–1.38	1.08–1.21	1.23–1.41	1.43
5.	Last anal ray/ penultimate	2.03–2.14	1.70–1.94	1.67–2.24	1.73–1.93	1.57–2.00	1.60–1.92	1.16–1.23	1.28–1.30	1.09–1.30	1.25–1.34	1.21
6.	Vomerine teeth	weak	weak	weak	weak	weak	weak	weak	weak	weak	strong	strong
7.	Patch of vomerine teeth	chevron near tri-angular shaped	chevron-shaped	tri-angular-shaped	chevron near tri-angular-shaped	tri-angular-shaped	anchor-shaped	chevron-shaped	chevron-shaped	chevron-shaped	chevron-shaped	chevron-shaped
8.	Dorso-posterior part of SRPE*	wide	wide	wide	wide	wide	wide	narrow	narrow	narrow	narrow	narrow
9.	Region of PRO, BOC and EOC**	feebly convex	feebly convex	feebly convex	feebly convex	feebly convex	feebly convex	strongly convex & rounded	strongly convex & rounded	strongly convex & rounded	strongly convex & rounded	strongly convex & rounded
10.	Hypural type	1–2 & 3–4 fused	1–2 & 3–4 fused	1–2 & 3–4 fused	1–2 & 3–4 fused	1–2 & 3–4 fused	1–2 & 3–4 fused	separated	separated	separated	separated	separated
11.	First anal pterygiophore	slender & curved	slender & curved	slender & curved	slender & curved	slender & curved	slender & curved	thick & straight	thick & straight	thick & straight	thick & straight	thick & straight

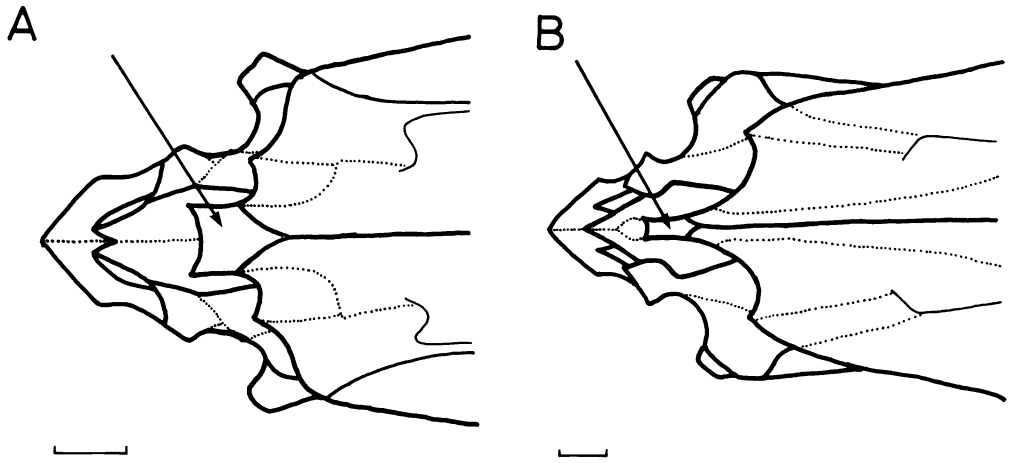

Fig. 4. The shape of the dorso-posterior part of supraethmoid. A shows the part is wide in *Pristipomoides* (*Pristipomoides*) *auricilla*. B shows it is narrow and elongated in *Pristipomoides* (*Platyinius*) *argyrogrammicus*. Scales 5 mm.

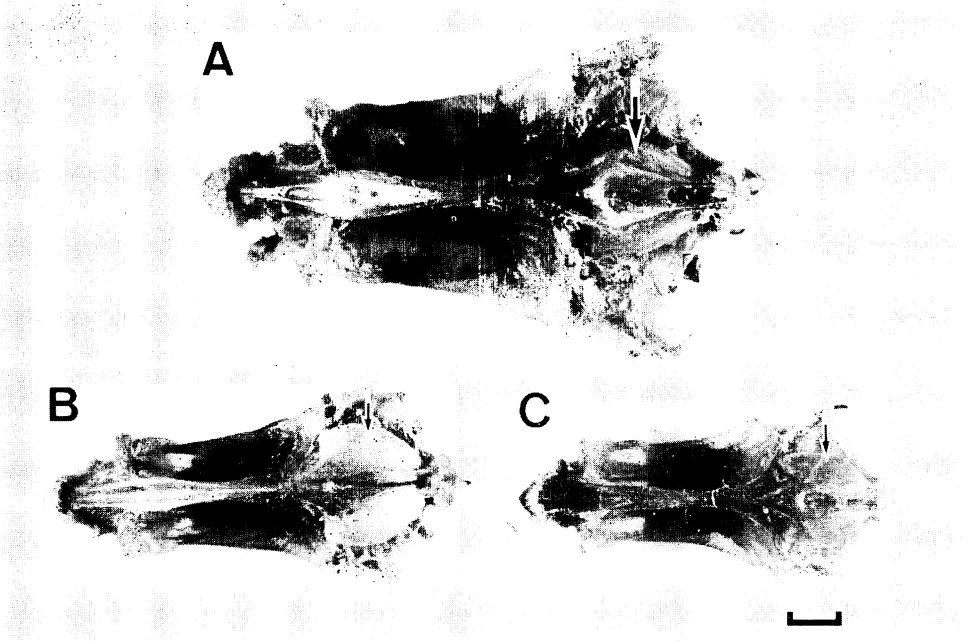

Fig. 5. Ventral aspect of the cranium. A shows the feebly convex region of prootic, basioccipital and exoccipital in *Pristipomoides* (*Pristipomoides*) *auricilla*. B and C show the strongly convex and rounded region of these bones in *Pristipomoides* (*Platyinius*) *argyrogrammicus* and *Pristipomoides* (*Platyinius*) *macrophthalmus*. Scale 5 mm.

ray (Fig. 3); 3) the dorso-posterior part of the supraethmoid in the subgenus *Pristipomoides* is wide in contrast to the same part which is narrow or elongate in the subgenus *Platyinius* (Fig. 4); 4) the region of the prootic, basioccipital and exoccipital bones including the otolith inside in *Pristipomoides* is feebly convex in comparison with the strongly convex and rounded one of the subgenus *Pla-*

tyinius (Fig. 5); 5) the first anal pterygiophore in the subgenus *Pristipomoides* is slender and curved forward, but in the subgenus *Platyinius* this bone is thick and straight (Fig. 6).

As mentioned previously, *Pristipomoides* (*Platyinius*) *zonatus* and *P.* (*Pl.*) *argyrogrammicus* have been placed in *Tropidinius* by many authors. The generic name, *Tropidinius*, was proposed by Gill (1868) with *Mesoprion arnillo* Poey, 1860 as the type species. However, *M. arnillo* (Poey, 1860) is a junior subjective synonym of *Apsilus dentatus* Guichenot, 1853, a valid species of Apsilinae from the western Atlantic. The name *Tropidinius* is therefore unapplicable for any members of the genus *Pristipomoides*.

Fowler (1931) was the first to place *P.* (*Pl.*) *zonatus* in the genus *Tropidinius*. He had earlier (1925) considered it to be a species of *Apsilus*. The transfer to *Tropidinius* was not accompanied with an explanation, but apparently he felt that it was very different from *A. fuscus* Valenciennes (type-species of *Apsilus*). Subsequently, the convex interorbital has often been used as a key diagnostic feature for the genus *Tropidinius* (Smith, 1949; Shinohara, 1966; Masuda et al., 1975; Allen, 1984). The eleven species of *Pristipomoides* have a very slightly convex interorbital in comparison with the flat interorbital of *Aprion virescens*, *Etelis corsucans*, and some other etelines. This character is not particularly diagnostic because this region in small or emaciated specimens appears nearly flat. Additionally, apsiline species *A. fuscus* and *A. dentatus* have a strongly convex interorbital.

Internally, the most important difference between the subgenera relates to hypural type. The subgenus *Platyinius* has completely separated hypurals while the subgenus *Pristipomoides* has hypurals 1–2 and 3–4 fused. The latter condition is probably associated with strengthening of the caudal fin for swimming. Hypural fusion commonly occurs in most active swimmers, e.g., caesionids as pointed out by Johnson (1980).

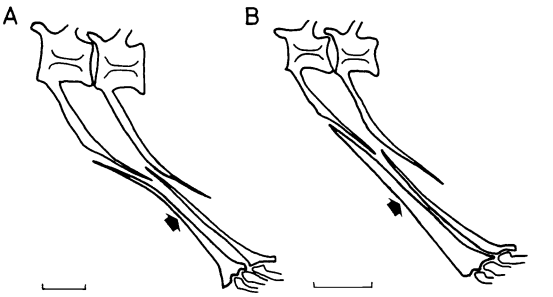

Fig. 6. Lateral aspect of the first and second anal pterygiophores. A shows the slender and headward curved first pterygiophore in *Pristipomoides* (*Pristipomoides*) *multidens*. B shows the same bone is thick and straight in *Pristipomoides* (*Platyinius*) *argyrogrammicus*. Scales 5 mm.

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ヒメダイ属（スズキ亜目：フエダイ科）の分類学的再検討

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従来，フエダイ科のハマダイ亜科に属するヒメダイ属（*Pristipomoides*）とシマチビキ属（*Tropidinius*）については，両者を区別する属特有の形質が不明瞭である上に，混同される場合もあった．そこで，シマチビキ属とされていた2種を含む両属のインド西部太平洋産の8種と西部大西洋産の3種の計11種について内外諸形質を比較し，さらに，ハマダイ亜科の他の4属の諸形質とも比較し属の再検討を行った．その結果，ヒメダイ属以外では，集合した6枚以上の小鱗が体側の最前部の鱗と離れて両側の擬鎖骨後上部に存在するが，ヒメダイ属とシマチビキ属には存在しないことがわかった．又，ヒメダイ属とシマチビキ属を明瞭に区別できる属レベルの相違は認められなかった．このことから両属を合わせてヒメダイ属の1属とするのが妥当と考えられる．さらに，ヒメダイ属は背鰭と臀鰭の最後の軟条の伸び率，下尾骨の癒合状態及び第1番目の臀鰭担鰭骨の形状などにより2グループに分かれ，これらの違いは亜属レベルと考えられたため，著者らは本属をヒメダイ亜属とシマチビキ亜属の2亜属に細分した．シマチビキ属とされていたインド西部太平洋産の2種とヒメダイ属とされていた西部大西洋産の3種はシマチビキ亜属に統一され，インド西部太平洋産の他の6種はヒメダイ亜属に含まれる．ヒメダイ属の属名は *Pristipomoides* Bleeker, 1852 が有効であり，シマチ

ビキ亜属名としては *Platyinius* Gill, 1862 が有効である．なお，*Tropidinius* Gill, 1868 はアメフエダイ亜科の *Apsilus* 属のジュニアシノニムである．

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