

Notes on Some Fishes, including One New Genus and Three New Species from Japan, the Ryukyus and Pescadores*

Itiro TOMIYAMA

Misaki Marine Biological Station, Faculty of Science, University of Tokyo

In this paper are given notes on, or descriptions of, some interesting or rare fishes, including one new genus and three new species from Japan, the Ryukyus and Pescadores (Formosa Strait.) The specimens observed are deposited in the Zoological Institute, Faculty of Science, University of Tokyo, or in the Biological Laboratory, Imperial Household.

Before going farther, the author wishes to express his hearty thanks to His Majesty the Emperor of Japan, who has willingly lent him the specimens of *Pseudocepola taeniosoma* KAMOHARA and *Osbeckia scripta* (LINNÉ) and the holotype of *Mars auropunctatus* n. sp.; all these specimens were collected by His Majesty himself from the eastern part of Sagami Bay. The author is indebted to Mr. Masao YOSHIDA of the Misaki Marine Biological Station for his assistance in examining the sexual differences in *Monacanthus cirrhifer* TEMMINCK et SCHLEGEL, and to Mr. Tsugio SAITO of the Imperial Household, who was kind enough to take the photographs of the specimens of the same species. The author is much obliged to Dr. Jean Clark DAN for her kindness in correcting the English of the manuscript.

1. *Pseudocepola taeniosoma* KAMOHARA (Owstonidae)

Pseudocepola taeniosoma KAMOHARA, 1935, Annot. Zool. Jap., xv, p. 136, text-fig. 4. Off Mimase, near Kôchi. — KAMOHARA, 1936, Zool. Mag. Tokyo, xlvi, p. 19, text-fig. 3. Off Mimase. — KAMOHARA, 1938, On the offshore bottom-fishes of Prov. Tosa, Shikoku, Japan, p. 37. Mimase. — OKADA et MATSUBARA, 1938, Keys to the fishes and fish-like animals of Japan, p. 382. Off Kôchi. — KAMOHARA, 1952, Rep. Kôchi Univ., Nat. Sci. no. 3, p. 52. Mimase.

Specimen. A single specimen (Cat. No. 828, Biol. Lab., Imperial Household) 136 mm in standard length, collected by His Majesty the Emperor of Japan off Hayama, Kanagawa Prefecture, Feb. 18, 1953.

Description. The following measurements are given in hundredths of the standard length: Depth of body at origin of anal fin 16.3, least depth of caudal peduncle 8.2, greatest width of body 10.9, length of head 18.0, length of snout 3.9, horizontal diameter of orbit 6.0, bony interorbital breadth 2.6, greatest width of maxillary 3.7, distance from tip of snout to origin of dorsal fin 19.1, length of base of dorsal fin 72.8,

* Aided by the Governmental Fund for Scientific Research.

length of base of anal fin 48.5, length of caudal fin 37.5, length of pectoral fin 13.2, length of ventral fin 14.3, longest (21st to 24th) articulate rays of dorsal fin 14.3, longest (14th to 16th) articulate rays of anal fin 13.5. D. III-26 (last ray doubled). A. I-18 (last ray doubled). P. 18. V. I-5.

Body elongate, compressed laterally; head also compressed. Eye large, situated high, slightly projected above contour of head; interorbital space flat. Snout short, as long as about $\frac{2}{3}$ of horizontal diameter of orbit. Cleft of mouth oblique; maxillary becoming much broader posteriorly, extending to a vertical through posterior margin of pupil; lower jaw not projecting beyond upper jaw when mouth closed. Lower margin of preopercle with 6 or 7 small low spines which are almost hidden under skin; the anteriormost spine largest and directed anteriorly. Teeth small, blunt, widely spaced, about 20 in number on each side of both jaws; those in upper jaw arranged in a single row, lacking at the symphysis; those in lower jaw in 2 rows near the symphysis, in 1 row

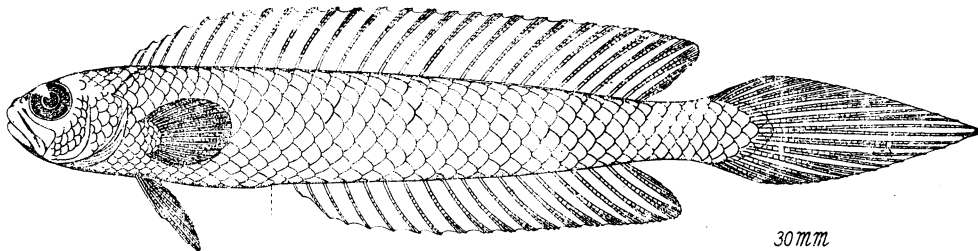


Fig. 1 *Pseudocepola taeniosoma* KAMOHARA.

posteriorly. Vomer and palatines toothless. Gill-membranes separate, free from isthmus; branchiostegals 6 in number. Gill-rakers on first branchial arch slender, 14+23 in number; longest one as long as about $\frac{2}{3}$ of diameter of orbit. Pseudobranchiae well developed.

Dorsal fin originating above opercular flap end; its spines small and flexible; articulate rays becoming longer posteriorly; posterior end of the fin extending slightly beyond caudal base when folded down. Anal fin slightly lower than dorsal fin and inserted below base of 8th articulate ray of dorsal fin; its spine very small and flexible; posterior end of the fin not reaching to caudal base when folded down. Caudal fin long and lanceolate. Pectoral fin rounded posteriorly, extending to below base of 5th articulate ray of dorsal fin. Ventral fins nearly pointed, inserted below pectoral base, separated from each other by a very narrow space, and extending beyond a vertical through 5th articulate ray of dorsal fin; innermost ray of the fins connected to belly by membrane.

Scales large, 35 in number in a longitudinal series from upper end of gill-opening to middle part of caudal base, 10 in a transverse series which ascends posteriorly from origin of anal fin to lateral line; nape, cheek, opercle, breast and belly scaly; posterior margin of scales on body, caudal peduncle and belly serrated bluntly, but not truly ctenoid; scales on nape, cheek, opercle and breast weakly serrated or rather cycloid. Proximal part of dorsal and anal fins scaleless.

Lateral line beginning from upper end of gill-opening, directed to base of 3rd spine

of dorsal fin, running parallel to base of the fin, but not extending onto caudal peduncle. A single series of scales lying between each lateral line and base of dorsal fin; the part between the two lateral lines making a shallow dorsomedian groove.

In life, body pink and paler below; reddish reticulations on nape, body and caudal base along posterior margins of scales; iris pinkish; dorsal fin pinkish, with a broad median yellow band, color of which becomes deeper posteriorly; anal fin paler, with a median yellowish band on its posterior third, and margined with white; caudal fin deep yellow, with ill-defined reddish border which is provided with narrow white a margin below; pectoral fins paler; ventral fins whitish. Dermal fold between premaxillary and maxillary jet black. When preserved in formalin, these colorations fading away except for jet black on the dermal fold.

Remarks. Although KAMOHARA did not point out the presence of the dorsomedian groove between the two lateral lines, it may be certain that a shallow median groove exists in his specimens also, because in his figure, which is very characteristic, the lateral line is drawn on a level with the base of the dorsal fin.

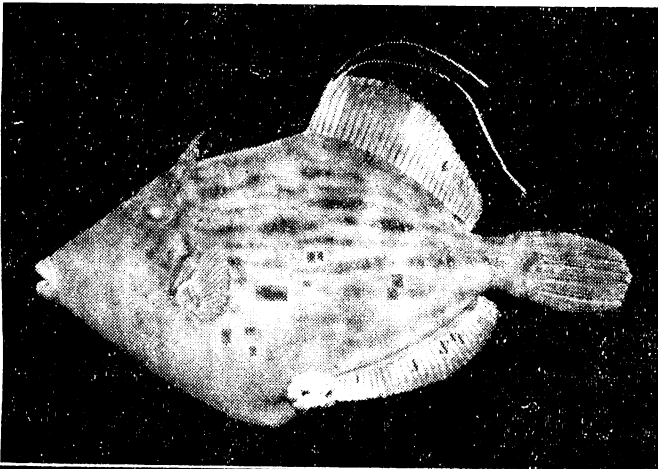


Fig. 2 *Monacanthus cirrhifer*
TEMMINCK et SCHLEGEL. Adult male;
1st and 2nd articulate rays of soft
dorsal fin elongated.

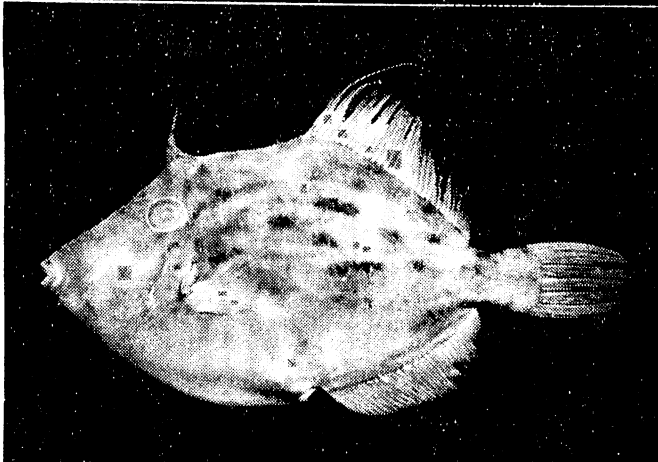


Fig. 3 *Monacanthus cirrhifer*
TEMMINCK et SCHLEGEL. Adult male;
2nd and 3rd articulate rays of soft
dorsal fin elongated.

The discovering in Sagami Bay of this rare species, which has hitherto been reported only in its type locality, off Mimase, thus adds a considerable eastward extension to its range of distribution.

2. *Monacanthus cirrhifer* TEMMINCK et SCHLEGEL (Monacanthida)

Specimens. Two male specimens (Cat. No. 50041 and 50464, Zool. Inst., Fac. Sci., Tokyo Univ.) 210mm and 180mm in standard length, collected by the author at Miiroku, Fukue Island, Nagasaki Prefecture, Oct. 13, 1953, and at Sasebo, Oct. 30, 1953.

Notes on prolongation of anterior rays of soft dorsal fin. It has been said that in the mature male of this species, the 2nd articulate ray of the soft dorsal fin is prolonged into a thread-like filament in the warmer season, but there has not been any positive proof that this phenomenon is seen in the male only and not in the female. However, Mr. Masao YOSHIDA of the Misaki Marine Biological Station, who has dissected numerous specimens of this species, which were approaching maturity, has kindly informed me that the 2nd articulate ray is certainly prolonged in a large number of the males but not at all in the females.

S. NAKAMURA* reported that it is not invariably the 2nd ray which is prolonged, but he did not make clear which other rays may be prolonged independently or in addition to the 2nd ray.

In the specimen, No. 50041 (Fig. 2), the 1st articulate ray is elongated in addition to the 2nd thread-like ray, while in the other specimen, No. 50464 (Fig. 3), the 3rd ray is elongated as well as the 2nd.

3. *Osbeckia scripta* (LINNÉ) (Monacanthidae)

Specimen. A single young specimen (Cat. No. 715, Biol. Lab., Imperial Household) 45mm in standard length, collected by His Majesty the Emperor of Japan off Nagai, Kanagawa Prefecture, Aug. 18, 1950. When obtained, this specimen was swimming among floating seaweeds.

Description. The following measurements are given in hundredths of the standard length: Greatest depth of body at origin of spinous dorsal fin 32.2, depth of caudal peduncle at end of base of anal fin 12.2, length of head measured to upper end of gill-opening 32.2, length of snout 26.7, horizontal diameter of eye 6.7, interorbital breadth 7.8, width of gill-opening 6.7, distance from tip of lower jaw to origin of spinous dorsal fin 33.3, distance from tip of lower jaw to origin of soft dorsal fin 56.2, length of base of soft dorsal fin 32.2, distance from tip of lower jaw to origin of anal fin 56.2, length of base of anal fin 36.2, anterior spine of spinous dorsal fin 13.3, longest (13th) ray of soft dorsal fin 7.3, longest (18th) ray of anal fin 7.8, longest (middle) ray of caudal fin 52.9 at least, longest (3rd) ray of pectoral fin 8.0. D. II, 47. A. 48. C. 12. P. 14.

* Rakusuikaishi, xxviii, no. 12, 1933, p. 1021.

Head, body and caudal peduncle much compressed laterally. Mouth small; lower jaw prominent; upper outline of snout from upper jaw to a part above anterior margin of eye almost evenly concave; outline of throat undulate; outline from posterior part of throat to origin of anal fin convex. Gill-opening restricted below eye. Spinous dorsal fin inserted above posterior margin of eye; anterior spine of the fin strong, with several series of serrations; posterior spine very small and inconspicuous. Soft dorsal and anal fins long, low, similar in form, anterior ends nearly opposite each other; posterior end of base of anal fin extending beyond that of soft dorsal fin. Caudal fin elongate (tips of some of upper and lower rays torn off). Pectoral fins small, situated behind lower half of gill-opening. A pair of closely set ossicles on ventral margin of trunk below approximate midpoint between lower end of gill-opening and origin of anal fin.

Color after long preservation in formalin yellowish; several obscure spots, which are smaller than pupil, scattered on side of body; caudal fin with longitudinal broad ill-defined dark band; other fins colorless.

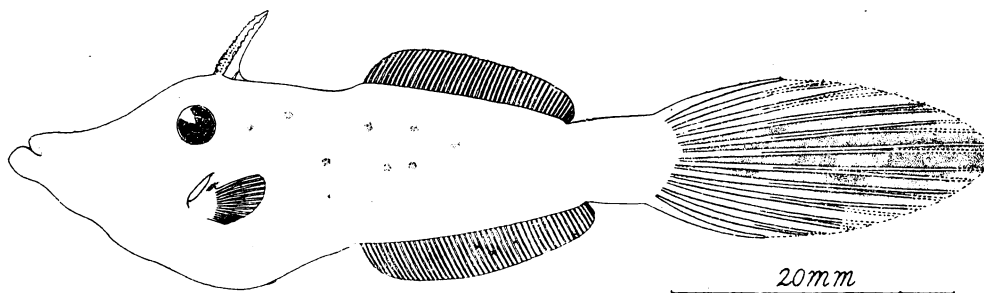


Fig. 4 *Osbeckia scripta* (LINNÉ). Young specimen 45 mm in standard length.

Remarks. Accompanying a figure, UCHIDA* has reported 2 young specimens of a monacanthid fish from Jogashima, Misaki, nearly equal in standard length to the specimen described above, and referred them to *O. scripta*. However, from the general outline and the markings, it appears likely that his specimens do not belong to this species but to *Alutera monoceros* (LINNÉ). According to his figure and description, in one of his specimens the height of the body is 45.7 % of the standard length, the spinous dorsal fin is inserted above the middle of the eye, the outline of the throat is strongly convex, and the ventral ossicles are situated below the base of the pectoral fin, while in the specimen described above, the height of the body is lower, the spinous dorsal fin is inserted above the posterior margin of the eye, the outline of the throat is not convex, and the ossicles are situated far behind.

Four other specimens 103-135mm in standard length, considered to be young of *A. monoceros*, are being examined by the author; these specimens have a peculiar marking, which is somewhat similar to that shown by UCHIDA, on the head and side of the body.

* Zool. Mag. Tokyo, xxxix, no. 462, 1927, p. 174, text-fig. 11.

4. *Mars auropunctatus* n. sp. (Gobiidae)

Holotype. A specimen (Cat. No. 751, Biol. Lab., Imperial Household) 39.5 mm in standard length, dredged by His Majesty the Emperor of Japan near Kamegi, a reef off Nagai, Kanagawa Prefecture, Dec. 1, 1951.

Description. The following measurements are given in hundredths of the standard length: Depth of body at origin of anal fin 15.7, least depth of caudal peduncle 10.1, length of head 30.4, depth of head 16.5, width of head 15.2, length of snout 8.1, horizontal diameter of eye 8.9, interorbital breadth 1.3, distance from tip of snout to origin of spinous dorsal fin 34.2, distance from tip of snout to origin of soft dorsal fin 57.0, length of base of soft dorsal fin 25.8, distance from tip of snout to origin of anal fin 60.3, length of base of anal fin 23.4, longest (3rd) spine of spinous dorsal fin 31.4, longest (penultimate) ray of soft dorsal fin 21.5, longest (penultimate) ray of anal fin 22.3, caudal fin 39.2, longest ray of pectoral fin 22.8, distance from tip of snout to ventral fin 31.1, ventral fin 24.1. D. VI, I-11 (last ray doubled). A. I-11 (last ray doubled). P. 20. V. I-5.

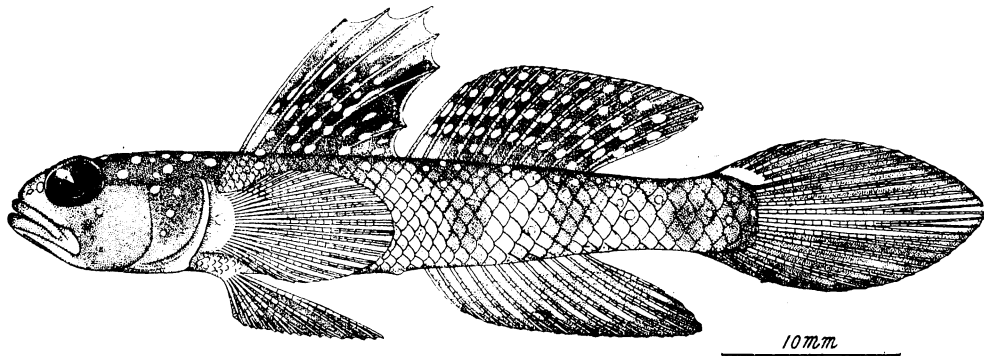


Fig. 5 *Mars auropunctatus* n. sp. Holotype (Cat. No. 751, Biol. Lab., Imperial Household) 39.5 mm in standard length.

Body slender, much compressed laterally; head compressed slightly. Eye very large, projecting above upper profile of head; no orbital tentacles; interorbital space very narrow. Snout short, steeply descending; anterior nostril conical; posterior nostril without rim, situated just in front of eye and on a level with middle of pupil. Mouth very large; the cleft descending posteriorly when viewed from side; lower jaw longer than the upper; no notch at tip of lower jaw; posterior end of maxillary exposed, not ensheathed, almost reaching to a vertical through posterior margin of pupil; no barbels. Teeth pointed; in 2 rows in upper jaw; those in outer row larger; those in inner row minute, closely set; teeth in lower jaw in about 4 rows anteriorly, 1 row posteriorly; those in innermost row larger, becoming canine-like posteriorly; the last one of this row strongest, situated at about middle part of lower jaw on each side; no teeth on vomer and palatines. Tip of vomer enlarged in a bilobed process which projects downward behind symphysis of upper jaw. Tip of tongue nearly truncated, free from floor of mouth. Gill-openings broad, extending forward below; gill-membranes

closely attached to isthmus; no fleshy papillae on inner margin of shoulder girdle.

Spinous dorsal fin high, not connected with soft dorsal fin; the spines flexible; their tips not free from membranes. Soft dorsal fin lower than spinous one; the articulate rays subequal in length. Anal fin inserted below base of 1st articulate ray of soft dorsal fin; the articulate rays becoming longer posteriorly. Caudal fin long, lanceolate. Pectoral fins without silky free rays, rounded posteriorly, not reaching to a vertical through origin of soft dorsal fin. Ventral fins united, with a membrane between the spines, not reaching to origin of anal fin.

Scales on side of body large, ctenoid, becoming smaller and cycloid anteriorly, 40 in number in a longitudinal series from upper end of gill-opening to caudal base, 11 in a transverse series from origin of anal fin to middle part of base of soft dorsal fin. Head entirely naked to origin of spinous dorsal fin; base of pectoral fin naked; throat and belly scaly. No lateral line.

In life, body light olivaceous above, hyaline below, with 4 ill-defined broad dark brownish saddles on back; the anteriormost saddle across base of spinous dorsal fin extending to and fading behind lower end of base of pectoral fin; the 2nd saddle crossing anterior half of base of soft dorsal fin; the 3rd saddle crossing posterior part of base of the same fin and anterior part of caudal peduncle; these two saddles becoming narrower below, not reaching to base of anal fin; the last one across posterior half of caudal peduncle not reaching to lower margin of the peduncle; another obscure saddle across nape fading on opercle. Snout, jaws and cheek light olivaceous, tinged with yellow behind mouth; part behind eye, posterior part of preopercle, and opercle reddish brown; iris cobalt blue except for yellowish inner margin; gill-membranes almost colorless. Round golden yellow spots scattered on posterior part of head, nape, base of pectoral fin and upper half of body. Spinous dorsal fin cobalt blue, deeper on its middle part, with a blackish elongate spot just in front of distal part of the 5th spine and a dark area near margin of membrane between the 5th and the 6th spines, and narrowly margined with white; each membrane with several round or elongate yellow spots. Soft dorsal fin cobalt blue, narrowly margined with white; upper part of the rays yellow; each membrane with 3 to 5 round yellow spots which are arranged in about 4 longitudinal series. Anal fin margined with deep cobalt blue; the submarginal part deep yellow; basal part of the fin and the rays light yellow; the membranes light cobalt blue between basal and distal yellow parts. Caudal fin with a broad longitudinal hyaline band, and bordered with cobalt blue; upper part of the cobalt blue border edged with narrow white; the rays above and below the hyaline band yellow; membranes between these rays cobalt blue; basal and scaly part of the fin brownish; a distinct elongate yellow spot situated above and along upper part of the brownish basal part. Pectoral fins translucent; the rays reddish. Ventral fins deep cobalt blue; basal part of the fins yellowish; the rays reddish.

After long preservation in formalin, yellowish and reddish coloration faded away; brownish saddles on back left as they were in life; cobalt blue changed to dark brown;

an obscure ill-defined blotch appearing below eye.

Named from the golden yellow spots scattered on the head and body.

Remarks. This species is distinguished from other species of *Mars* JORDAN et SEALE* by its larger scales and characteristic markings.

Pescadorichthys n. gen. (Blenniidae)

D. XII-20. A. II-22. V. I-2. Snout almost vertical; orbital and nuchal tentacles absent; anterior nostril with 2 tentacles; posterior nostril without tentacle; no dermal median ridge on head at least in female; lower jaw shorter than the upper; margin of both lips entire. Teeth in jaws movable, closely set, arranged in comb-like band; teeth in lower jaw larger than those in upper jaw; terminal tooth on each side of band in lower jaw enlarged, canine-like and immovable; an isolated posterior canine on each side of lower jaw. No notch between spinous and soft parts of dorsal fin. Some of rays of caudal fin may be elongated. None of articulate rays of any fins branched. Gill-membranes connected to each other across isthmus. Scales absent; lateral line distinct below spinous part of dorsal fin.

This genus is distinguished from *Salarias* CUVIER and its allies principally by the absence of orbital and nuchal tentacles, the presence of 2 tentacles of the anterior nostril, and the peculiar dentition in the lower jaw.

Named in reference to the Pescadore the type locality of the type of the genus.

Genotype — *Salarias namiyei* JORDAN et EVERMANN.

5. *Pescadorichthys namiyei* (JORDAN et EVERMANN) (Blenniidae)

Salarias namiyei JORDAN et EVERMANN, 1903, Proc. U. S. Nat. Mus., xxv, no. 1289, p. 362, text-fig. 25. Pescadores Islands. — JORDAN et RICHARDSON, 1909, Mem. Carnegie Mus., iv, no. 2, p. 203, text-fig. 26. Pescadores Islands. — OKADA et MATSUBARA, 1938, Key to the fishes and fish-like animals of Japan, p. 397. — CHEN, 1953, Quart. Jour. Taiwan Mus., vi, no. 2, p. 127. Pescadores Islands. — MATSUBARA, 1955, Fish morphology and hierarchy, p. 746.

Ecsenius namiyei NORMAN, 1943, Ann. Mag. Nat. Hist., ser. 11, x, p. 811.

Ecsenius frontalis CHAPMAN (nec CUVIER et VALENCIENNES) (partum, 1951, BEAUFORT'S Fishes of the Indo-Australian Archipelago, ix, p. 353.

Since the description given by JORDAN and EVERMANN is rather brief and there is need of some additional notes, a description on the same specimen, the holotype of *Salarias namiyei* JORDAN et EVERMANN, is given below.

Specimen. The holotype of *Salarias namiyei* JORDAN et EVERMANN, a female specimen [Cat. No. 5726 (No. 278 formerly, as noted by JORDAN and EVERMANN), Zool. Inst., Fac. Sci., Tokyo Univ.] 49.5 mm in standard length, obtained from the Pescadores Islands of Formosa Strait; the collector and the date unknown.

Description. The following measurements are given in hundredths of the standard

* Bull. Bur. Fish., Washington, xxv, 1905, p. 408.

length: Depth of body at origin of anal fin 18.6, depth of caudal peduncle 11.1, length of head from midpoint between anterior nostrils to opercular flap end 24.2, horizontal diameter of orbit 8.1, length of postorbital part of head 15.2, interorbital breadth 3.0, distance from midpoint between anterior nostrils to origin dorsal fin 17.2, length of base of dorsal fin measured to base of last articulate ray 77.8, distance from midpoint between anterior nostrils to origin of anal fin 50.5, length of base of anal fin measured to base of last articulate ray 43.4, longest (7th) articulate ray of dorsal fin 15.2, longest (11th and 12th) articulate rays of anal fin 10.1, longest (6th from below) articulate ray of caudal fin 22.2, longest (8th) ray of pectoral fin 19.6, longest (inner) articulate ray of ventral fin 12.1. D. XII-20. A. II-22. C. 14 (articulate rays). P. 13. V. I-2.

Head compressed laterally; body strongly compressed on caudal peduncle. Eye very large, situated high up, slightly projecting above profile of head; interorbital space narrow, slightly concave. Anterior profile of head from upper lip to anterior margin of eye nearly vertical; midpoint between anterior nostrils situated at anteriormost part of head. Anterior nostril situated on a level with lower margin of pupil, with low rim which is provided with upper and lower simple tentacles; upper tentacle longer than lower one, as long as about $\frac{2}{3}$ diameter of orbit; posterior nostril conical, without tentacle, situated slightly above anterior nostril. Orbital and nuchal tentacles absent. Mouth low, nearly horizontal; maxillary reaching to a vertical through posterior margin of orbit; lower jaw shorter than upper one. Margin of lips entire. Teeth in jaws slender, movable, closely set, arranged in a comb-like band; those in upper jaw more than 120 in number. Teeth in lower jaw larger than those in upper jaw, 45 in number; terminal tooth of the band on each side enlarged, canine-like, immovable; an isolated posterior canine on each side of the jaw. Vomer and palatines toothless. Gill-membranes united to each other across isthmus. Scales absent. Lateral line nearly parallel with base of spinous part of dorsal fin, fading posteriorly.

Dorsal fin very long, originating above upper anterior angle of opercular bone; no notch between spinous and soft parts; spinous part lower than soft part; posterior tip of the fin extending to caudal base when folded down. Anal fin lower than dorsal fin, inserted about below base of last spine of dorsal fin; base of last articulate ray opposite to that of penultimate ray of dorsal fin; posterior tip of the fin far from caudal base when folded down; last articulate ray of dorsal and anal fins connected to upper and lower margins of very short caudal peduncle by membrane. Caudal fin nearly truncate; tips of 2nd articulate ray counted from above and 6th articulate ray from below produced. Pectoral fins rounded posteriorly. Ventral fins jugular in position; spine of each fin very small, hidden below skin. Articulate rays of all fins not branched; membranes crenulate between rays of all fins.

After long preservation in formalin, head and body brownish dark becoming paler on caudal peduncle; dorsal fin with many narrow oblique and dark streaks which ascend posteriorly; anal fin darker towards margin, with ill-defined median dark band; other fins pale.

Urogenital duct ending in a low tube, which is widened laterally and fused to anterior side of basal half of small low anteriormost spine of anal fin.

Remarks. Though doubtfully, NORMAN placed this species in the genus *Ecsenius* McCULLOCH. According to the description of *Ecsenius* given by McCULLOCH, and the description and figure of *E. mandibularis*, the type species of this genus, by the same authority, one of the important characters of *Ecsenius* is the presence of 6 or 7 cardiform teeth following the end of the anterior row of close-set teeth on each side of the lower jaw. However, in *Pescadorichthys namiyei*, an isolated posterior canine is widely separated from the terminal strog canine-like tooth of the anterior row of close-set teeth on each side of the lower jaw; moreover, in this species, the dorsal fin originates above the upper anterior angle of the opercular bone instead of the upper posterior angle of the same bone, and there are more numerous dorsal (XII-20 instead of XII-14) and anal (II-22 instead of II-17) fin-rays. Therefore, the present author has proposed above a new genus, *Pescadorichthys*, for this species.

Judging from the note given by CHAPMAN on *Ecsenius frontalis*, this authority seems to consider that *P. namiyei* is a form with no more than subspecific differences. However, it is better to consider that *P. namiyei* is a distinct species, because this species has a different dentition, the dorsal fin is inserted far more anteriorly than that of *E. frontalis* (CUVIER et VALENCIENNES), there are more numerous dorsal (XII-20 instead of XII-16 or 17) and anal (II-22 instead of II-18 to 20) fin-rays, and fewer ventral (I-2 instead of I-3) fin-rays.

JORDAN and EVERMANN did not refer to the sexuality of their holotype and reported that the dorsal and anal fins are composed entirely of soft flexible spines, but, as pointed out above, the specimen is a female and the dorsal and anal fins are provided with the flexible spines and the articulate rays seen in many other species belonging to allied genera. The figure given by these authorities is characteristic, but only a single nasal tentacle instead of 2 is shown and the lateral line, which is apparently present below the spinous part of the dorsal fin, is not drawn.

6. *Alticus orientalis* n. sp. (Blenniidae)

Holotype. A female specimen (Cat. No. 48353, Zool. Inst., Fac. Sci., Tokyo Univ.) 87.5mm in standard length, collected by Mr. Yoshiro OTSUKI at the Island of Hachijo, Japan, July 1, 1929.

Description. The following measurements are given in hundredths of the standard length: Depth of body at origin of anal fin 12.0, width of body above origin of anal fin 8.3, least depth of caudal peduncle 6.1, length of head from upper anteriormost point of upper lip to opercular flap end 18.3, depth of head at posterior end of base of median crest 12.6, greatest width of head 14.9, length of snout from upper anteriormost point of upper lip to orbital margin 7.3, horizontal diameter of orbit 3.8, length of postorbital part of head 10.5, interorbital breadth 1.6, height of median crest on head 2.1, distance from upper anteriormost point of upper lip to origin of dorsal fin 17.8, length of base of dorsal fin measured to base of last articulate ray 78.3, distance from

upper anteriormost point of upper lip to origin of anal fin 39.8, length of base of anal fin 58.1, length of caudal fin 24.3, distance from upper anteriormost point of upper lip to insertion of ventral fin 14.4, length of ventral fin 12.3, longest (2nd) spine of dorsal fin 11.0, longest (7th to 15th) articulate rays of dorsal fin 13.0, longest (24th) articulate ray of anal fin 10.9, longest (9th) ray of pectoral fin 23.4. D. XIV-22. A. II-26. C. 13. P. 15. V. I-4.

Head broader than deep, triangular when viewed from front; body long, slender, compressed laterally; belly bulging out laterally; caudal peduncle very short, much compressed laterally. Snout rather produced; rim of anterior nostril with a small simple and pointed tentacle which is as long as about half diameter of pupil; posterior nostril without rim or tentacle, situated on a level with lower orbital margin. Eye conspicuously prominent, projecting above upper profile of head; supraorbital cirrus as long as about $\frac{2}{3}$ diameter of orbit, with 3 or 4 appendages on each side;

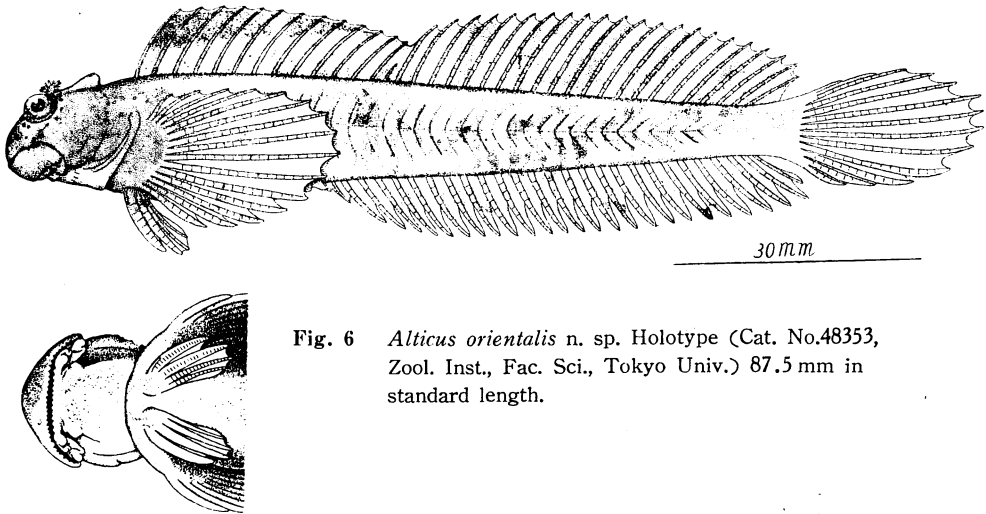


Fig. 6 *Alticus orientalis* n. sp. Holotype (Cat. No.48353, Zool. Inst., Fac. Sci., Tokyo Univ.) 87.5 mm in standard length.

some of the appendages branched into 2 or 3. Interorbital space very narrow. A low, but thick and distinct median crest extending from posterior part of interorbital space to above posterior preopercular margin. No nuchal cirri. Mouth inferior; cleft of mouth ascending posteriorly when viewed from side; upper lip very broad, covering anteriormost part of ventral side of head, and extending slightly beyond a vertical through posterior orbital margin; both lips crenulated regularly on entire margins, and confluent with a thick fold at corner of mouth. Teeth minute, movable, close-set, implanted in gums, and uniserial in each jaw; a small posterior canine on each dentary; vomer with a transverse series of small but distinct teeth; palatines toothless. Gill-membranes connected with each other across throat.

Dorsal fin long, originating above upper end of gill-opening; spinous part of the fin shorter and slightly lower than soft part; a shallow, but distinct notch between spinous and soft parts; tip of the last spine far from margin of membrane between

penultimate spine and 1st articulate ray; tips of posterior articulate rays of the fin extending slightly beyond base of caudal fin when folded down; last articulate ray connected to caudal peduncle by membrane. Anal fin lower than soft part of dorsal fin, inserted below approximate midpoint between bases of 10th and 11th spines of dorsal fin; last articulate ray of the fin free from caudal peduncle, situated slightly posterior to that of dorsal fin, and provided with a narrow membranous flap on its distal and posterior part; all articulate rays of the fin covered with thick skin; membranes between the rays strongly scalloped; tips of posterior articulate rays of the fin extending beyond base of caudal fin when folded down. Caudal fin rounded posteriorly as a whole; lower 4 articulate rays covered with thick skin; membranes between middle ray of the fin scalloped. Pectoral fins large, rounded posteriorly, extending posteriorly beyond origin of anal fin; lower 4 rays of the fin covered with thick skin; membranes between lower 5 rays scalloped. Ventral fins inserted slightly anterior to origin of dorsal fin; outer 2 articulate rays stout, covered with thick skin; membrane between these 2 rays scalloped; the spine very small, hidden under skin of outermost ray. Articulate rays of all fins not branched.

Glandular tissue developed on each side of anterior end of base of anal fin; anteriormost spine of anal fin very small, covered with thick skin and like a fleshy papilla in appearance; urogenital duct opening at tip of a process, which is widened laterally and completely fused to anterior side of the spine; anterior wall of the process very thick, fleshy and confluent to the glandular tissue.

Head and body entirely naked. Anteriormost part of lateral line represented by 2 pores above upper end of gill-opening; posterior part vestigial, composed of minute, hardly visible pores, running parallel to anterior half of base of dorsal fin, curving down and disappearing posteriorly.

Color brownish dark after long preservation in formalin; ventral side of head and belly pale; no dark spots or any marking on entire head; several dark, ill-defined transverse blotches on side of body nearly in alternation with about 10 dark blotches on back; dorsal fin narrowly margined with white; distal part of spinous part of the fin darker; soft part of the fin crossed by 7 ill-defined transverse dark bands which are continued from blotches on back; anal fin with pale ill-defined longitudinal band near the base; distal part of membranes between anal fin-rays pale; membranes of caudal and pectoral fins translucent; ventral fins dusky on dorsal side, paler on opposite side.

Named in reference to the Orient.

Remarks. The general external appearance of this specimen agrees well with the description of *Alticus saliens* (FORSTER) given by CHAPMAN*, with the exception of the median crest on the head and the coloration. This authority describes "no crest in females except in very large individuals where a low fleshy ridge, never as much as 1/2 height of pupil, is sometimes developed," while in this specimen described above the

* BEAUFORT'S The fishes of the Indo-Australian Archipelago, ix, 1951, p. 266.

crest is well developed and its height is equal to about half the diameter of the eye. According to the same authority, who described the Samoan specimens, a white streak, which is narrowly margined with black, curves around the back of the eye and down to the upper lip, slightly ahead of the corner of the mouth, and a similar streak runs from the lower margin of the eye to the anterior nostril in both sexes of *A. saliens*, while in this specimen such marking is entirely wanting. Moreover, according to NORMAN* and CHAPMAN, the absence of vomerine teeth is one of the generic characters of *Alticus*, while in this specimen vomerine teeth are present. Therefore, if the absence of vomerine teeth is an indispensably important character to distinguish *Alticus* BLYTH from its allied genera, *A. orientalis* of the present author may be considered to belong to a different genus. On the other hand, it is possible to consider that this blenny may be a local form of *A. saliens* and that the vomerine teeth may become distinct with growth in *A. saliens* in general and the development of the teeth has hitherto been overlooked. Since only a single specimen, the holotype, is available for study, this new species is placed in the genus *Alticus* at present.

7. *Andamia pacifica* n. sp. (Blenniidae)

Holotype. A female specimen (Cat. No. 37924, Zool. Inst., Fac. Sci., Tokyo Univ.) 57.2 mm in standard length, obtained from the Kerama Islands near Okinawa, April of 1924. Collector unknown.

Description. The following measurements are given in hundredths of the standard length: Depth of body at origin of anal fin 12.2, width of body above origin of anal fin 8.7, least depth of caudal peduncle 7.0, length of head from upper anteriormost point of upper lip to operular flap end 20.6, greatest depth of head 11.9, greatest width of head 17.8, length of snout from anteriormost point of upper lip to orbital margin 9.1, horizontal diameter of orbit 5.4, length of postorbital part of head 11.2, interorbital breadth 2.6, distance from anteriormost point of upper lip to origin of dorsal fin 21.3, length of base of dorsal fin measured to base of last articulate ray 75.7, distance from anteriormost point of upper lip to origin of anal fin 44.4, length of base of anal fin measured to base of last articulate ray 51.0, length of caudal fin 29.2, distance from anteriormost point of upper lip to insertion of ventral fin 15.7, length of ventral fin 10.5, longest (2nd to 5th) spines of dorsal fin 7.9, longest (10th to 12th) articulate rays of dorsal fin 11.4, longest (penultimate) articulate ray of anal fin 9.6, longest (8th) ray of pectoral fin 20.1. D. XVI-18. A. II-24. P. 15. V. I-4.

Body elongate, compressed behind anal insertion; caudal peduncle very short, much compressed; trunk widened below, almost triangular in cross section. Head depressed; cheeks bulging out. Snout rather produced, almost evenly rounded anteriorly when viewed from above. Rim of anterior nostril with a small simple tentacle which is as long as about half diameter of pupil; posterior nostril without rim or tentacle, situated on a level with lower margin of pupil. Eye directed obliquely upward, projecting

* Ann. Mag. Nat. Hist., ser. 11, x, 1943, p. 808.

above upper profile of head; supraorbital cirrus shorter than diameter of eye, with 2 or 3 small appendages on inner margin and 3 to 5 on outer margin. Dermal surface of interorbital space concave. No median crest on head; no nuchal cirri. Mouth inferior; cleft of mouth ascending posteriorly when viewed from side. Upper lip narrow, with somewhat irregular crenulation on its margin, and extending slightly beyond a vertical through posterior margin of pupil; posterior half of the lip making a broad conspicuous fold which surrounds corner of mouth. Lower lip narrow, with rough and irregular crenulation on its margin; a large oval disc-like sucker extending posteriorly from lower lip to a distance about equal to diameter of orbit. Teeth minute, movable, close-set, implanted in gums, and uniserial in each jaw; no canines in lower jaw; vomer and palatines toothless. Gill-membranes connected with each other across isthmus.

Dorsal fin long, low, originating on nape slightly behind upper end of gill-opening;

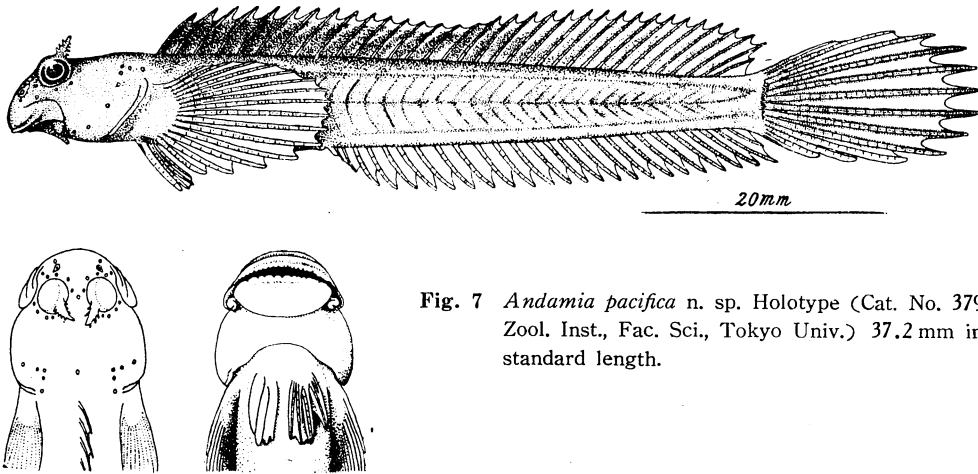


Fig. 7 *Andamia pacifica* n. sp. Holotype (Cat. No. 37924, Zool. Inst., Fac. Sci., Tokyo Univ.) 37.2 mm in standard length.

posterior spines shorter, but no notch between the spinous and soft parts; membranes between the spines and articulate rays notched. Anal fin lower than soft part of dorsal fin, inserted below base of 10th spine of dorsal fin; base of the penultimate ray opposite to that of last ray of dorsal fin; all articulate rays covered with thick skin; membranes between the rays scalloped. Tips of penultimate rays of dorsal and anal fins extending beyond base of caudal fin when fins folded down; last articulate rays of the fins connected to caudal peduncle by membrane. Caudal fin rounded posteriorly as a whole; membranes between the articulate rays deeply notched; lower 3 articulate rays covered with thick skin. Pectoral fin rounded posteriorly, not reaching to a vertical through origin of anal fin; membranes between lower rays scalloped; lower 4 rays covered with thick skin. Ventral fins inserted slightly anterior to upper end of gill-opening; articulate rays, especially outer 2, covered with thick skin; membrane between outer 2 rays deeply notched; the spine very small, hidden under skin of outermost ray. Articulate rays of all fins not branched.

Antermost spine of anal fin very small, like a fleshy papilla in appearance; urogenital duct opening at tip of a process, which is widened laterally and completely fused to anterior side of the spine; anterior wall of the process thick and fleshy.

Head and body entirely naked; no lateral line.

Color after long preservation in formalin dark brownish, paler below; ventral side of head and belly pale. Spinous part of dorsal fin very dark, fading backward on the soft part; the darker part with narrow white margin. Membranes of caudal and pectoral fins transparent. Anal and ventral fins pale.

Named in reference to the Pacific.

Paratype. Another young female (Cat. No. 37925, Zool. Inst., Fac. Sci., Tokyo Univ.) collected together with the holotype. Standard length 37 mm. D. XVI-18. A. II-25. C. 12 (articulate). P. 15. V. I-4. Anterior part of spinous part of dorsal fin dark; other parts of the fin paler; rays of caudal and pectoral fins brownish; anal and ventral fins colorless.

Remarks. According to CHAPMAN*, three other species belonging to the same genus have been recognized from the Indo-Pacific region: — *A. tetradactylus* (BLEEKER), *A. heteroptera* (BLEEKER) and *A. reyi* (SAUVAGE). *A. pacifica* is allied to *tetradactylus* and *heteroptera*. From *tetradactylus*, this species is distinguished by the 2nd dorsal spine, which is not elongated and about equal to $2/5$ the length of the head** in the female at least, and by the absence of small white spots on the head and the body; from *heteroptera*, by the larger number of dorsal spines and the smaller number of dorsal articulate rays*** and by the absence of the median groove on the top of the head.

* BEAUFORT'S The fishes of the Indo-Australian Archipelago, ix, 1951, pp. 257-264.

** According to CHAPMAN (*ibid.*, p. 259), the 2nd dorsal spine of *tetradactylus* is elongated in both sexes, being twice the length of the head in the male, and a little longer than the head in the female.

*** CHAPMAN (*ibid.*, p. 261) counted D. XIV-19 to 21; A. II-24 to 25.