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PHILIPPINE ARCHIPELAGO AND
ADJACENT REGIONS

DESCRIPTIONS AND FIGURES OF NEW FISHES OBTAINED
IN PHILIPPINE SEAS AND ADJACENT WATERS BY
THE UNITED STATES BUREAU OF FISHERIES
STEAMER "ALBATROSS"

BY

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DESCRIPTIONS AND FIGURES OF NEW FISHES OBTAINED IN PHILIPPINE SEAS AND ADJACENT WATERS BY THE UNITED STATES BUREAU OF FISHERIES STEAMER "ALBATROSS"

By HENRY W. FOWLER

THE fishes described in this paper represent the groups Isospondyli, Iniomi, Lophobranchii, Percomorphi, Cataphracti, Chromides, Jugulares, and Plectognathi. They were discovered after detailed reports on the *Albatross* fishes in these groups were prepared.¹ The explanations of the computations, sequence of characters, and other data, as well as diagnoses of the higher groupings (as orders, families, subfamilies, and genera) pertaining to the new species studied, are given in the full reports or in three supplemental papers on the collection that have been issued.²

Family ALEPOCEPHALIDAE

Genus XENODERMICHTHYS Günther

AUCHENALEPOCEPS, new subgenus

Type.—*Xenodermichthys funebris*, new species.

Occiput forms depression, very distinct in profile, with the advanced predorsal region bulging. This region of predorsal with a median groove extending back as far as gill opening.

Differs from the subgenus *Xenodermichthys* in the above characters, as well as in proportions, facies, and fins.

(ἀὐχὴν, nape + *Alepocephalus*.)

¹ Six volumes describing the fishes contained in the *Albatross* Philippine collections have now appeared in U. S. National Museum Bulletin 100—vol. 7 (1928), vol. 8 (1929), vol. 10 (1930), vol. 11 (1931), vol. 12 (1933), and vol. 13 (1941).

² Descriptions of new fishes obtained 1907 to 1910, chiefly in the Philippine Islands and adjacent seas. Proc. Acad. Nat. Sci. Philadelphia, vol. 85, pp. 233–367, figs. 1–117, 1934.

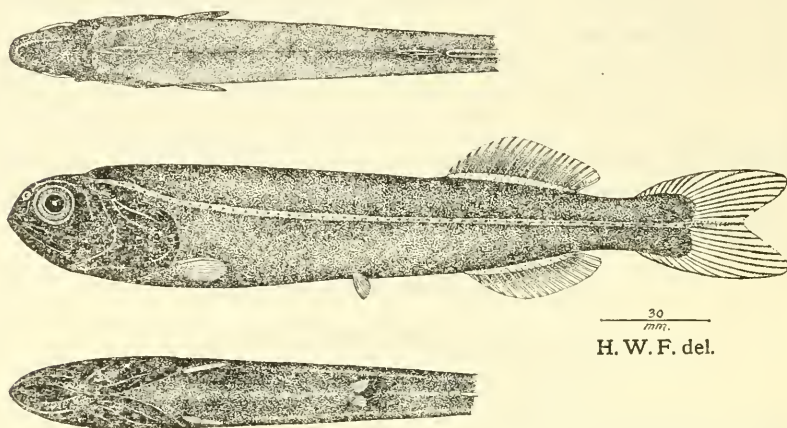
Descriptions of new fishes obtained by the United States Bureau of Fisheries steamer *Albatross*, chiefly in Philippine seas and adjacent waters. Proc. U. S. Nat. Mus., vol. 85, pp. 31–135, figs. 6–61, 1938.

New fishes of the family Callionymidae, mostly Philippine, obtained by the United States Bureau of Fisheries steamer *Albatross*. Proc. U. S. Nat. Mus., vol. 90, pp. 1–31, figs. 1–16, 1941.

XENODERMICHTHYS FUNEBRIS, new species

FIGURE 4

Depth $5\frac{1}{4}$; head $3\frac{5}{6}$, width $2\frac{1}{3}$. Snout $6\frac{1}{6}$ in head, convex, short, front end level with lower eye edge; eye $5\frac{1}{2}$, greatly exceeds snout, $1\frac{1}{3}$ in interorbital; orbit $4\frac{1}{10}$ in head; maxillary reaches below hind eye edge, length $2\frac{1}{3}$ in head, expansion $1\frac{3}{4}$ in eye; mouth moderate, little inclined from horizontal, upper jaw little protruded and with lower jaw included as closed; teeth minute, uniform, simple, along edges of jaws, those below much closer as jaws approximated rather closely; interorbital convex, moderately high, width $4\frac{1}{8}$ in head. Gill opening large, laterally cleft forward nearly midway in head length. Gill rakers $10+17$, pointed flexible lamellae, $\frac{2}{5}$ longer than gill filaments or equal pupil.

FIGURE 4.—*Xenodermichthys funebris*, new species: Type (U.S.N.M. No. 99534).

Body scaleless. Lateral line axial along side, 55 pores from preopercle to hind end of caudal squamation and 6 or more continued out on middle rays of caudal.

D. 20, 1, well postmedian, sixth ray $3\frac{4}{5}$ in head; A. 19, origin little behind dorsal origin, seventh ray 5 in head; caudal $1\frac{1}{4}$, fin forked, with broad lobes; least depth of caudal peduncle $3\frac{1}{3}$; pectoral small, short, low, rays 1, 8, fin $3\frac{2}{5}$ in head; ventral $6\frac{1}{10}$, rays 1, 5.

Color in alcohol uniform velvety black, little paler around dorsal and anal bases narrowly. Fins all blackish, like body.

Type.—U.S.N.M. No. 99534. D. 5348. Point Tabonan, S. 90° E., 33.5 miles (lat. $10^{\circ}57'45''$ N., long $118^{\circ}38'15''$ E.), Palawan Passage. In 375 fathoms. December 27, 1903. No. 3534. Length 188 mm. to end of broken caudal.

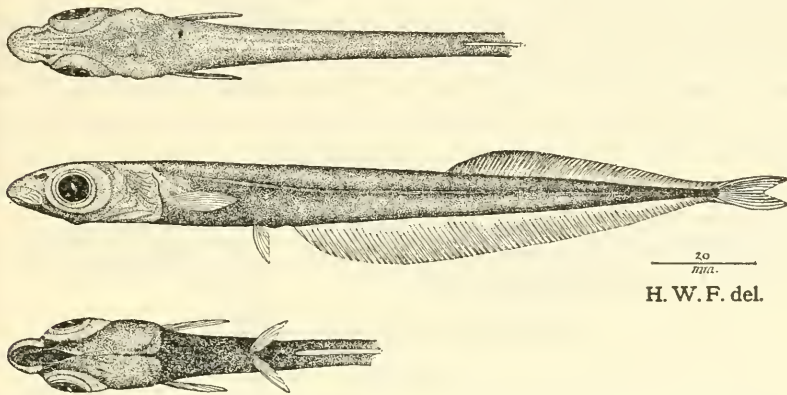
A species resembling *Xenodermichthys squamilaterus* Alcock³ but differing from that species in proportions, smaller head, deeper body, smaller vertical fins, smaller eye, and shorter maxillary.
(*funebri*s, funereal, with reference to its black color.)

Genus LEPTODERMA Vaillant

LEPTODERMA RETROPINNA, new species

FIGURE 5

Depth $10\frac{7}{8}$; head $4\frac{4}{7}$, width $2\frac{1}{10}$. Snout $3\frac{1}{2}$ in head, convex, front end forms little below middle of eye; eye $3\frac{1}{2}$, subequal with snout, greatly exceeds bony interorbital; orbit very large, diameter $2\frac{2}{7}$ in

FIGURE 5.—*Leptoderma retropinna*, new species: Type (U.S.N.M. No. 99512).

head; maxillary reaches front edge of orbit, length 4 in head; mouth small, but little inclined from horizontal, upper jaw longer and lower included; bony interorbital width 2 in eye, level or little depressed. Gill opening small, inferior.

Body scaleless. Lateral line little distinct, axial along side of body.

D. 54, fin origin postmedian in fish, fourteenth ray $4\frac{1}{6}$ in head; A. 75, fin origin at first $\frac{2}{5}$ in combined head and body without caudal, fifteenth ray $3\frac{1}{10}$ in head, and like dorsal confluent with caudal; caudal $2\frac{1}{8}$, fin forked; caudal peduncle very narrowly constricted; pectoral $2\frac{2}{5}$, rays 10; ventral rays 1, 5, fin $3\frac{1}{2}$ in head.

Color in alcohol largely blackish, with black line along base of dorsal and another along anal base. Fins blackish.

Greatly like *Leptoderma macrops* Vaillant⁴ and *Leptoderma affinis*

³ Ann. Mag. Nat. Hist., ser. 7, vol. 2, p. 148, 1898 (type locality: Off the Andamans); Illustrations of the zoology of H. M. Indian Marine surveying steamer *Investigator*, pt. 1, Fishes, pl. 25, fig. 4, 1899 (type).

⁴ Compt. Rend. Acad. Sci. Paris, vol. 103, p. 1239, 1886 (type locality: No locality given, *Talisman* dredgings).—FOWLER, Bull. Amer. Mus. Nat. Hist., vol. 70, pt. 1, p. 193, fig. 82, 1936 (compiled).

Alcock,⁵ but differs in the more posterior insertion of the dorsal, which is midway between the pectoral origin and the caudal base.

Type.—U.S.N.M. No. 99512. D. 5495. Diuata Point (N.), N. 76° E., 9.4 miles (lat. 9°06'30" N., long. 125°00'20" E.), between Leyte and Mindanao. In 976 fathoms. August 2, 1909. No. 4460. Length 147 mm.

(*retropinna*, backward fin.)

Family IPNOPIDAE

IPNOCEPS, new genus

Type.—*Ipniceps pristibrachium*, new species.

Differs from *Ipnops* chiefly in the uppermost or simple pectoral ray with its upper edge dentated or irregularly serrated. The anal fin base is greatly longer than shown by Günther and by Goode and Bean for the Atlantic *Ipnops murrayi*. The longer pectoral also reaches nearer to level with the dorsal origin in the vertical in *Ipniceps*. The luminous superocephalic organ is also broader in *Ipniceps*. The fins, proportions, and scales all differ from those of *Ipnops*.

One species in the western Pacific.

(Ἰπνός, lantern + κεφαλή, head.)

IPNOCEPS PRISTIBRACHIUM, new species

FIGURE 6

Depth $11\frac{1}{8}$; head $4\frac{1}{4}$, width $1\frac{3}{4}$. Snout broadly arched as viewed from above; large luminous cephalic organ broad as long; maxillary reaches halfway in head, expansion 7 in head; mandible $1\frac{1}{2}$; mouth but little inclined from horizontal, with mandible well protruded in front. Gill opening large, well extended forward to about first sixth in head.

Scales 47+1 in axial lateral series; 8 transversely below dorsal origin; 21 predorsal; 3 large scales between origins of ventrals; 4 scales transversely on side of caudal peduncle.

D. 1, 9, 1, first branched ray $1\frac{1}{4}$ in total head length; A. 11, 13, 1, third ray 2; caudal subequal with head, convex behind; pectoral rays 1, 12, fin $1\frac{1}{5}$ in head; ventral $1\frac{1}{8}$, rays 1, 7.

Color in alcohol uniform black. Luminous cephalic organ pearl-white. Pale or light streaks along each side of predorsal squamation down to pectoral base.

The distinctive characters are contained largely in the generic account above.

Type.—U.S.N.M. No. 99508. D. 5607. Binang Unang Island (E.) S. 36° E., 5 miles (lat. 00°04'00" S., long. 121°36'00" E.), Gulf of

⁵ Catalogue of deep-sea fishes obtained by the *Investigator*, p. 180, pl. 32, fig. 2, 1899 (type).

Tomini, Celebes, Dutch East Indies. In 761 fathoms. November 18, 1909. No. 1737. Length 158 mm. to end of broken caudal.

Paratypes.—U.S.N.M. No. 99509. D. 5606. Dodepo Island (W.) N. 3°W., 10.8 miles (lat. 0°16'28" N., long. 121°33'30" E.), Gulf of Tomini, Celebes, Dutch East Indies. In 834 fathoms. November 17, 1909. No. 4086. Length 145 mm. to end of broken caudal.

U.S.N.M. No. 99510. D. 5608. Binang Unang Island peak, S. 87° E., 19 miles (lat. 0°08'00" S., long. 121°90'00" E.), Gulf of Tomini, Celebes, Dutch East Indies. In 1,089 fathoms. November 18, 1909. No. 3838. Length 128 mm. to end of broken caudal.

(πίστις, saw + βράχιον, arm.)

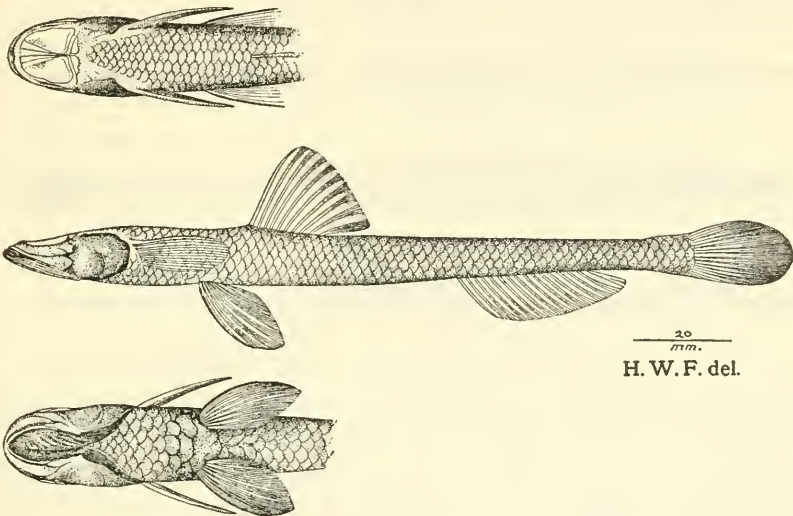


FIGURE 6.—*Ipnoceps pristibrachium*, new species: Type (U. S. N. M. No. 99508).

Family SYNGNATHIDAE

PARABELONICHTHYS, new genus

Type.—*Parabelonichthys kellersi*, new species.

Body compressed, with rather feeble cristae or keels, which smooth and on trunk; three auxiliaries along each interval longitudinally of fundamental cristae; superior cristae of head and trunk discontinuous; inferior cristae of trunk and tail discontinuous; median cristae of trunk and inferior cristae of tail continuous. Tail little longer than combined head and trunk. Vent little premedian. Dorsal begins little before middle between gill opening and vent, rays 57, on 15 rings of which 5 belong to tail. Anal present. Caudal well developed. Pectoral large, with broad base.

Related to *Belonichthys* Peters but differing chiefly in its auxiliary longitudinal trunk keels.

(πάρὰ, near + *Belonichthys*.)

PARABELONICHTHYS KELLERSI, new species

FIGURE 7

Depth $15\frac{2}{5}$, $7\frac{1}{5}$ to vent; head $3\frac{3}{7}$, $7\frac{1}{3}$ to caudal base, width $3\frac{1}{2}$ in head length. Snout $2\frac{1}{2}$ in head from snout tip; eye $6\frac{3}{4}$, $2\frac{4}{5}$ in snout, subequal with interorbital; maxillary $\frac{1}{4}$ of eye; interorbital $7\frac{2}{5}$ in head from snout tip, low, depressed. Opercle with feeble, fine, longitudinal striae.

Rings 19+26, trunk $13\frac{3}{5}$ in tail or caudal section of body. Upper trunk keel not continuous with upper caudal keel, median lateral trunk keel continuous with lower caudal keel; median ventral trunk keel feeble, though distinct to vent. Trunk with auxiliary keel in each 3 intervals on side between fundamental keels.

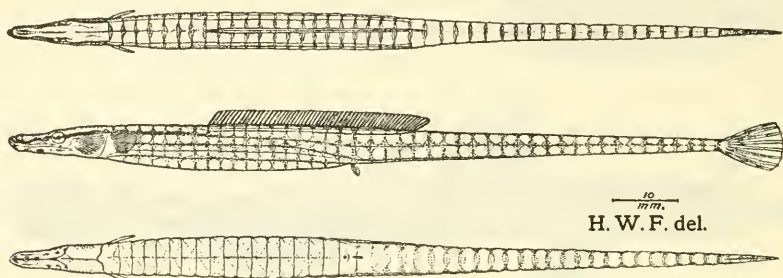


FIGURE 7.—*Parabelonichthys kellersi*, new species: Type (U.S.N.M. No. 108466).

D. 57, on 10 trunk and 5 caudal rings; A. small, about long as eye; caudal $15\frac{1}{6}$ in total head length; pectoral $3\frac{3}{4}$, rays 15.

Color in alcohol brownish, little contrasted. Dark brown longitudinal band, narrow, along side of snout, through eye and over post-ocular to gill opening. Fins largely uniform brownish. Caudal with two dark longitudinal bands, little divergent backward, and three dark spots marginally on fin above and below.

Distinctive characters largely included in the generic account above.

Type.—U.S.N.M. No. 108466. Jaro River, Panay Island. April 3–21, 1929. Lt. H. C. Kellers. Length 118 mm.

Paratypes.—U.S.N.M. No. 119443. Iloilo, Panay Island. April 17, 1929. Lt. H. C. Kellers. Length 92 mm. to end of broken tail.

U.S.N.M. No. 108468. Iloilo, Panay Island. April 19, 1929. Lt. H. C. Kellers. Length 110 to 118 mm., two examples.

(Named for Lt. Henry Clay Kellers.)

Family SERRANIDAE

RHOMBOSERRANUS, new genus

Type.—*Rhomboserranus gracilispinis*, new species.

Body elongated, compressed, rhomboid, back little elevated. Caudal peduncle rather long, well compressed, much longer than deep. Head large, well compressed, upper profile little inclined. Snout short, tip level with middle of eye. Eye large, advanced in head, not entering upper profile. Maxillary reaches below eye, free, expanded posteriorly and without supplemental bone. Preorbital very narrow. Teeth in upper jaw very minute, in narrow bands with outer in larger series similar to single row below. Premaxillaries protractile. Interorbital low, concave, less than eye. Preopercle with denticulated edge, large spine at angle, one above and three below of which front one directed forward. Two divergent opercular spines, lower larger. Lower edge of subopercle with few denticles. Suprascapula serrated. Gill rakers lanceolate, slender, lower 15. Scales ctenoid, rather large. Cheek, opercles, and occiput scaly, rest of head naked. Small scales on chest, breast, and prepectoral region. Caudal base scaly. Dorsals and anals each with distinct basal scaly sheaths. Lateral line high, arched, concurrent with back, scales above in rows parallel with its course, below in horizontal series. Two dorsals, spinous fin much higher and with 8 spines. Anal like soft dorsal and opposite, of three spines, with second spine longest. Caudal moderate, little emarginate behind. Paired fins well developed, pectoral low and reaches front of anal and ventral with spine and five rays reaching vent. Coloration dull, silvery below.

A genus unique in its combination of characters, especially the rhomboid contour of the body, rather delicate spinous development and the plain coloration.

(*ῥόμβος*, rhomb + *Serranus*.)

RHOMBOSERRANUS GRACILISPINIS, new species

FIGURE 8

Depth $2\frac{1}{2}$; head $2\frac{1}{4}$, width $2\frac{2}{7}$. Snout $4\frac{1}{4}$ in head measured from upper jaw tip; eye $3\frac{1}{3}$, exceeds snout or interorbital, close to but not entering upper profile of head; maxillary reaches halfway in eye, expansion 2 in eye, length $2\frac{2}{5}$ in head from snout tip; mouth well inclined, lower jaw protruded in front externally and directed forward; 4 very short spines at front of each premaxillary; interorbital $4\frac{3}{5}$ in head measured from snout tip, level to depressed medianly; preopercle with row of short spines along hind vertical edge, 3 on lower edge and 2 widely divergent spines at angle; opercle with 2 widely divergent spines, lower longer. Gill rakers 8+15, lanceolate, longer than gill filaments or 2 in eye.

Tubular scales 44 in lateral line to caudal base, not continued on last; 5 scales above to spinous dorsal origin, 4 above to soft dorsal origin, 14 below to anal origin, about 19 predorsal forward until opposite hind pupil edge. On head small scales on postocular, predorsal, and cheek, on last in seven transverse rows to angle of preopercle keel and scales little larger than on opercle. Spinous dorsal with basal scaly sheath at each spine and small scales on bases of all rayed vertical fins and pectoral base. Small scales also on chest and breast, and on inner ventral bases.

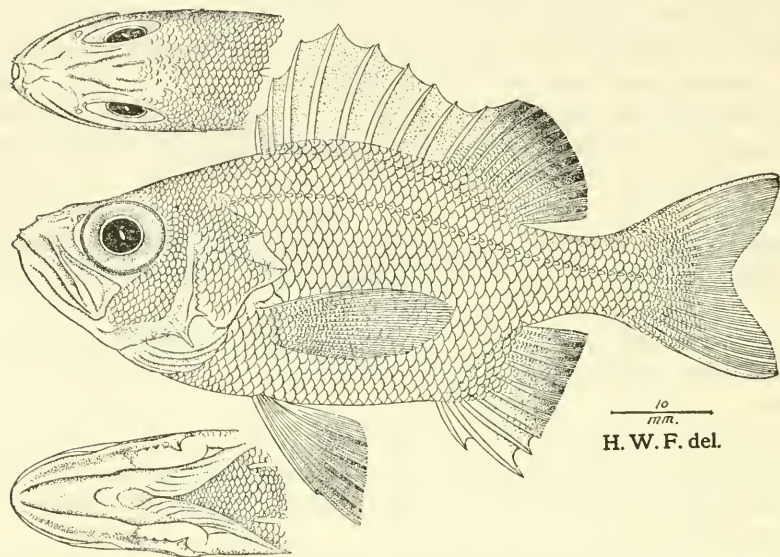


FIGURE 8.—*Rhomboserranus gracilispinis*, new species: Type (U.S.N.M. No. 99519).

D. IX, 10, 1, fourth spine $2\frac{1}{5}$ in total length of head, first branched ray $2\frac{2}{3}$; A. III, 7, 1, second spine $2\frac{2}{5}$, second ray 3; caudal $1\frac{1}{2}$, well emarginate behind; least depth of caudal peduncle $3\frac{2}{3}$; pectoral $1\frac{2}{5}$, rays 1, 15; ventral rays I, 5, fin $1\frac{2}{3}$ in total head length.

Color in alcohol largely uniform brown, little paler below. Iris pale to whitish. Soft dorsal, anal, and ventral dark to gray-black terminally. Inside gill opening and mouth cavity blackish brown.

Characters of distinction largely contained in the generic account.

Type.—U.S.N.M. No. 99519. D. 5273. Corregidor Light N. 27° E., 27.25 miles (lat. $13^{\circ}58'45''$ N., long. $120^{\circ}21'35''$ E.), China Sea, vicinity of southern Luzon. In 114 fathoms. July 14, 1908. Length 80 mm.

Paratypes.—U.S.N.M. No. 99520. D. 5273. Corregidor Light N. 27° E., 27.25 miles (lat. $13^{\circ}58'45''$ N., long. $120^{\circ}21'35''$ E.), China

Sea, vicinity of southern Luzon. In 114 fathoms. July 14, 1908. Length 41 to 61 mm. Six examples.

U.S.N.M. No. 99521. D. 5266 [665]. Matocó Point, S. 22° E. 7 miles (lat. 13°44'36" N., long. 120°59'15" E.), Verde Islands Passage and Batangas Bay. In 135 fathoms. June 8, 1908. Length 49 to 65 mm. Nine examples.

(*gracile*, slender + *spina*, spine.)

SCHISTOPERCAE, new subfamily

Type genus.—*Schistoperca*, new genus.

Known chiefly by its striking combination of characters, differing widely from all the Serranidae in its well divided and separated dorsals, spinescent scales, peculiar armature of the opercles, elongated pectorals, and long robust caudal peduncle.

SCHISTOPERCA, new genus

Type.—*Schistoperca macrobrachium*, new species.

Body rather oblong-elongate, well compressed. Caudal peduncle long, compressed, depth but little over half its length. Head moderate, well compressed, upper and lower profiles equally oblique and upper little undulated. Snout convex, rounded, broad. Eye moderate, advanced in head, close to but not entering upper profile. Maxillary reaches below eye, expansion free posteriorly and without supplemental bone. Premaxillaries protractile. Teeth very minute, in narrow band or row in jaws, not evident on palate. Preorbital very narrow. Interorbital low, level, subequal with eye. Preopercle with few small denticles along hind vertical edge and lower edge entire. Upper edge of antero-orbital and postero-orbital rim each with spine. Opercle with 3 backwardly directed spines, lowest largest and extends farther posteriorly. Lower edge of gill opening with 3 moderately curved spines, directed down and back. Suprascapula finely serrated. Gill rakers lanceolate, slender, rather numerous, longer than gill filaments. Scales ctenoid, large, very small on fins. Most of head scaly. Scales little smaller around gill opening below, on chest and breast. Lateral line highly arched, slopes much lower along side of caudal peduncle. Scale rows horizontal. Two distinct and well separated dorsal fins, second little higher. Anal like soft dorsal and opposite, preceded by 3 small slender graduated spines and third or last longest. Caudal moderate, forked. Pectoral greatly elongated, reaches beyond anal base. Ventral inserted below pectoral base, short, with spine and five rays. Coloration uniformly pale.

Characters of the genus included above, though the genus especially distinguishable by the greatly elongated pectorals.

(*σχιστός*, split, or divided, with reference to the dorsals + *Perca*.)

SCHISTOPERCA MACROBRACHIUM, new species

FIGURE 9

Depth $3\frac{1}{2}$; head 3, width 2. Snout $5\frac{1}{6}$ in head measured from snout tip; eye $3\frac{2}{5}$, greater than snout, subequal with interorbital, snout tip level with middle of eye; maxillary reaches below first third in eye, expansion 2, length 3 in head from snout tip; lips rather broad, fleshy, smooth; mouth well inclined, lower jaw well protruding in front; teeth in jaws barely perceptible, very minute, feeble, inconspicuous; interorbital $3\frac{1}{5}$ in head measured from snout tip, moderate, convex; suborbital very narrow, ensheaths maxillary anteriorly; preopercle with hind edge furnished with row of few spinules. Lower edge of gill opening with 3 short backwardly curved spines. Gill opening large, extends forward below until opposite eye. Gill rakers $10+20$, slender, lanceolate.

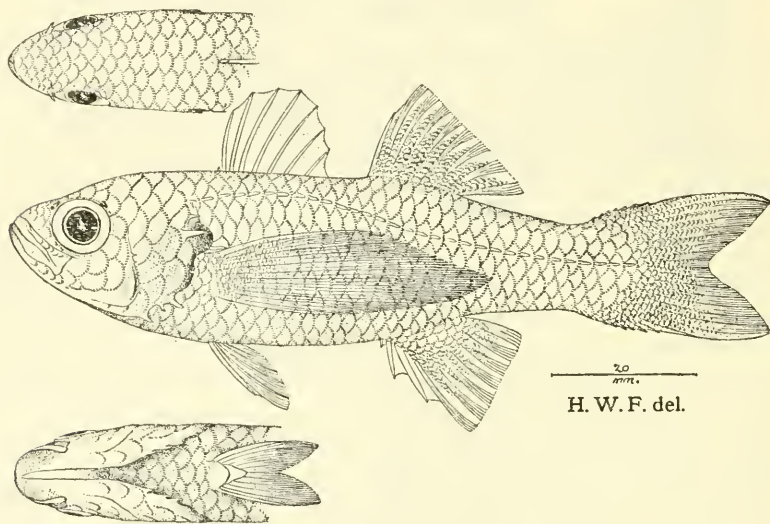


FIGURE 9.—*Schistoperca macrobrachium*, new species: Paratype (U.S.N.M No. 99531).

Scales $28+2$ in lateral line; 3 above to second dorsal origin, 7 below to anal origin, 14 predorsal forward nearly to front of snout tip. Head well scaled, 2 rows on cheek. Vertical fins well covered with small scales over basal portions. Prepectoral region with scales smaller than on body and pectoral fins covered with small scales basally. Flap between ventrals formed of 2 large scales.

D. VIII—I, 8, I, fourth spine $2\frac{1}{8}$ in total head length, first branched ray 2; A. III, 7, I, third spine $2\frac{9}{10}$, first branched ray $1\frac{3}{4}$; caudal $1\frac{1}{10}$, moderately forked, with broad pointed lobes and fulcra series of distinct graduated spines; least depth of caudal peduncle

2 $\frac{2}{5}$; pectoral greatly extended, lower median rays longest, fin 2 $\frac{1}{10}$ in fish without caudal, rays 12; ventral rays I, 5, fin 2 in total head length.

Color in alcohol largely uniform pale brownish, little paler below. Iris slate. Hind edge of gill opening rather broadly blackish brown. Fins uniformly pale. Inside gill opening and mandibular fold blackish.

Characters contained in the generic account above.

Type.—U.S.N.M. No. 99489. Tataán Pass, Simulac Island (south end of Basún Channel), Sulu Archipelago, Tawi Tawi Group. Shore collection. No. 4917. Length 100 mm.

Paratypes.—U.S.N.M. No. 99531. Tataán Pass, Simulac Island (south end of Basún Channel), Sulu Archipelago, Tawi Tawi Group. Shore collection. No. 4916. February 19, 1908. Length 99 mm.

U.S.N.M. No. 99533. D. 5216. Anima Sola Island, N. 44° W., 29.50 miles (lat. 12°52' N., long. 123°23'30" E.), between Burias and Luzon. In 215 fathoms. April 22, 1908. No. 2102. Length 95 mm.

U.S.N.M. No. 99529. D. 5423. Cagayan Island (S.), S. 11° E., 4.8 miles (lat. 9°38'30" N., long. 121°11' E.), Jolo Sea. In 508 fathoms. March 31, 1909. No. 3205. Length 86 mm.

U.S.N.M. No. 99532. D. 5296. Matocó Point, S. 63° E., 4.563 miles (lat. 13°40'09" N., long. 120°57'45" E.), China Sea, vicinity southern Luzon. In 210 fathoms. July 24, 1908. Nos. 2474, 2475. Length 68 to 77 mm. Two examples.

U.S.N.M. No. 99530. D. 5624. Makyan Island (S.), N. 67° W., 8.9 miles (lat. 0°12'15" N., long. 127°29'30" E.), between Gillolo and Makyan Islands, Dutch East Indies. In 288 fathoms. November 29, 1909. Nos. 4105, 4106. Length 89 to 90 mm. Two examples.

(μακρός, long+βραχίων, arm, or pectoral.)

Family SPARIDAE

Genus PENTAPODUS Cuvier

PENTAPODUS LINEOSCAPULARIS, new species

FIGURE 10

Depth 3 $\frac{1}{2}$; head 3 $\frac{1}{2}$, width 1 $\frac{7}{8}$. Snout conic, pointed, tip in front level with lower edge of pupil, length 3 $\frac{1}{2}$ in head; eye 3 $\frac{1}{2}$, subequal with snout or interorbital, not entering upper profile of head; maxillary reaches opposite front eye edge, length 3 $\frac{1}{4}$ in head; mouth moderate, little inclined from horizontal, jaws equal in front; teeth uniserial in jaws, upper lateral uniform and small, lower laterals little enlarged medially and pair of canines in front of each jaw; interorbital 3 $\frac{1}{3}$ in head, low, broadly convex. Gill rakers 2+6, short, de-

pressed, flaplike, terminally spinescent, equal $\frac{2}{3}$ of gill filaments, which are half of eye.

Scales 41 in lateral line to caudal base; 3 above to first dorsal origin, 2 above to second dorsal origin; 15 predorsal scales; four rows of large scales over check to preopercle ridge, besides row of small ones along suborbital edge and three rows on preopercle flange. Basal half of caudal scaly, also pectoral base scaly.

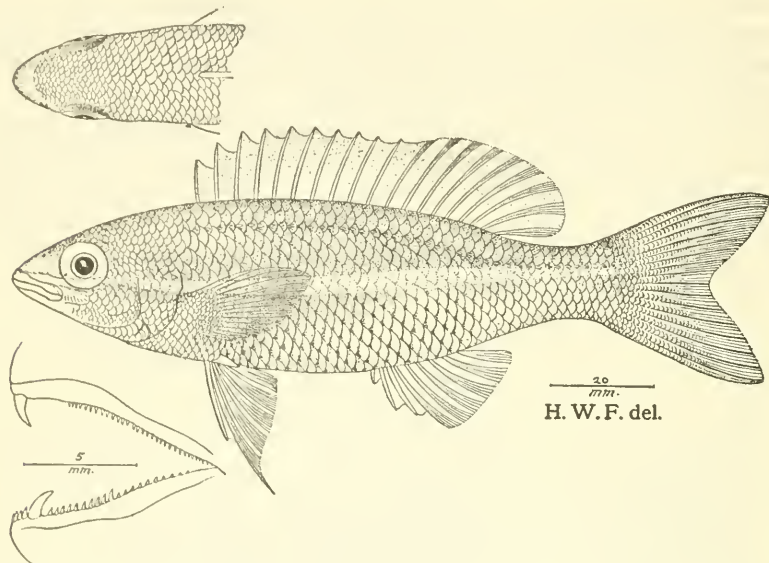


FIGURE 10.—*Pentapodus lineoscapularis*, new species: Type (U.S.N.M. No. 108465).

D. X, 9, 1, first spine 4 in head, fourth spine $2\frac{1}{3}$, third ray $1\frac{2}{10}$; A. III, 6, 1, third spine $3\frac{1}{8}$, first ray 2; caudal 1, emarginate behind; least depth of caudal peduncle $2\frac{2}{5}$; pectoral $1\frac{1}{3}$, rays 15; ventral rays I, 5, fin $1\frac{1}{6}$ in head.

Color in alcohol with back pale olive-brown and lower surfaces uniformly pale. Whitish longitudinal band from side of snout, including lower fourth of eye, back over pectoral origin and base of upper caudal lobe.

A species apparently unique in its coloration as a white band extends from the side of the preorbital, including the lower edge of the eye, and then back along the middle of the side to the caudal peduncle. Also a gray white bar or line from the beginning of the lateral line and vertically above the origin of the pectoral, which has a blackish spot.

Type.—U.S.N.M. No. 108465. Iloilo, Panay Island. May 9, 1929. Lt. H. C. Kellers. Length 135 mm.

(*linea*, line + *scapula*, scapula.)

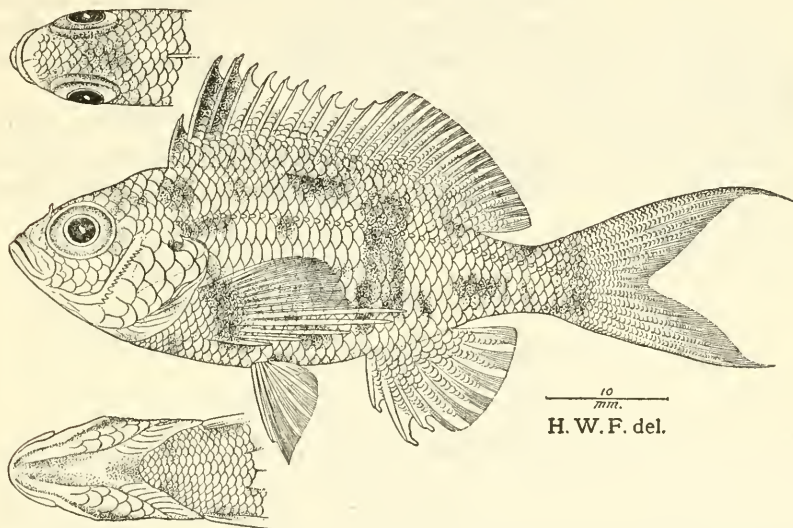
Family CIRRHITIDAE

Genus CYPRINOCIRRHITES Tanaka

CYPRINOCIRRHITES STIGMA, new species

FIGURE 11

Depth $2\frac{4}{5}$; head $2\frac{4}{5}$, width $2\frac{1}{10}$. Snout short, broad, convex, length $6\frac{1}{4}$ in head measured from snout tip, which is level with lower edge of pupil; eye $3\frac{1}{6}$, greatly exceeds snout or interorbital but not invading upper profile of head; orbit $2\frac{3}{4}$ in head as measured from snout tip; maxillary reaches below front eye edge, expansion $2\frac{7}{8}$ in eye, length $3\frac{2}{3}$ in head from snout tip; teeth minute, simple, in narrow bands in jaws, uniform or without enlarged canines; no teeth evident on palate; interorbital $5\frac{1}{2}$, low, broadly convex; hind preopercle edge well inclined forward, with 14 uniform strong close-set denticles; suborbitals narrow, entire. Gill rakers 4+10, slender, lanceolate, long as gill filaments or longer.

FIGURE 11.—*Cyprinocirrhites stigma*, new species: Type (U.S.N.M. No. 99505).

Scales 38 in lateral line to caudal base; 4 scales above to first dorsal origin, 9 below to anal origin; 14 predorsal forward to front of snout; 3 rows of scales on cheek; large scales on opercles. Small scales on chest, breast, and prepectoral region. Bases of vertical fins all finely scaled, also small scales on pectoral basally.

D. XI, 17, 1, first spine 4 in total head length, third spine $1\frac{3}{4}$; A. III, 6, 1, second spine 2, second ray 2, caudal $2\frac{2}{5}$ in rest of fish,

deeply forked and each lobe ending in sharp slender point; pectoral $2\frac{2}{3}$, rays 9, v; least depth of caudal peduncle 3 in total head length; ventral $1\frac{7}{8}$, rays I, 5.

Color in alcohol brown, becoming whitish on under surfaces. Six large, irregular blackish brown blotches on back and below fourth two dark vertical bands. Two dark blotches on trunk along lateral line. Row of five or six dark blotches along side of tail. Blackish transverse band at caudal base and another at pectoral base. Small dark spot on opercle above. Black on first three membranes of spinous dorsal terminally. Fins otherwise pale or light brown.

Differs from *Cyprinocirrhites ui* Tanaka⁶ in the larger eye, shorter maxillary, large subterminal black blotch on second and third membranes of first dorsal, tip of snout on level with lower edge of pupil, lower edge of preopercle entire, fins all more or less scaly basally, long pectoral reaching over halfway to caudal base and a dark bar on caudal and pectoral bases. Quite likely the imperfectly described and figured *Cirrhichthys polyactis* Bleeker⁷ may belong in *Cyprinocirrhites* as it has D. X, 16 or 17 and the caudal ends in a filament above and another below. Although its scalation is unknown it differs in proportions, smaller eye, larger maxillary, smaller pectoral and different fins.

Type.—U.S.N.M. No. 99505. D. 5640. Labuan Blanda Island, N. 88° E., 1 mile (lat. 4°27'00" S., long. 122°55'40" E.), Buton Strait, Dutch East Indies. In 24 fathoms. December 13, 1909. No. 22920. Length 62 mm.

(στίγμα, blotch.)

Family SCORPAENIDAE

Subfamily SCORPAENINAE

Genus SCORPAENA Linnaeus

SCORPAENA TAENIOPHRYS, new species

FIGURE 12

Depth $2\frac{1}{2}$; head $2\frac{1}{5}$, width $1\frac{1}{2}$. Snout very broad, depressed, front end level with lower eye edge, length $4\frac{1}{2}$ in head measured from snout tip; eye $3\frac{3}{4}$, greater than snout or interorbital, close to but not entering upper profile of head; maxillary reaches below hind eye edge, expansion $1\frac{7}{8}$ in eye, length 2 in head from snout tip; mouth little inclined from horizontal, lower jaw slightly pro-

⁶ Zool. Mag. Tokyo, vol. 29, No. 347, p. 268, 1917 (type locality: Tanabe, Province of Kii); Figures and descriptions of the fishes of Japan, ed. 2, p. 507, pl. 137, fig. 384, 1935 (type).

⁷ Nat. Verh. Kon. Akad. Wetens. Amsterdam (Cirrhit.), vol. 15, p. 16, 1875 (type locality: Amboina); Atlas ichthyologique des Indes orientales Néerlandaises, vol. 8, p. 147, pl. 76, fig. 1, 1876-77 (type).

truding in front; teeth in villiform bands in jaws, also present on palatines; bony interorbital width $6\frac{4}{5}$ in head measured from snout tip, concave. Gill rakers $5+10$, robust, short, clavate, $\frac{2}{3}$ long as gill filaments, which about equal pupil.

Pair of small nasal spines; short and low antero-supraorbital spine up and backward, and 2 broad low and rather large postero-supraorbitals each side, closely set, with finely serrated edges all more or less directed back; pair of similar strong nuchal spines close behind last postero-supraorbital; parietal and occipital spines form strong keel, slightly divergent backward with rather deeply concave

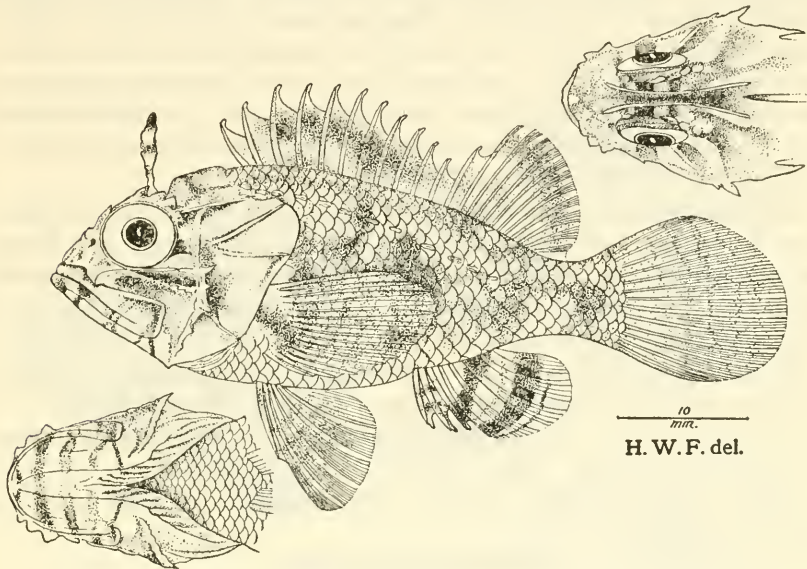


FIGURE 12.—*Scorpaena taeniophrys*, new species: Type (U.S.N.M. No. 99522).

median depression; row of three broad, short and rather large pre-orbital spines, posterior still little larger and directed down; sub-orbital stay with two very small spines; five spines along hind edge of preopercle, uppermost extending back from hind edge of sub-orbital stay; two very small little-developed postocular spines; two widely divergent opercular spines; humeral spine broad, obtuse.

Scales $37+2$ in lateral line; 13 developed tubes form lateral line followed by 3 pores and last pore on caudal base; 4 scales above lateral line to second dorsal origin, 10 below to anal origin. Head, predorsal, and prepectoral region naked. Chest and breast with small scales. On fins only caudal base scaly. Lateral line complete, slopes obliquely down to caudal peduncle. Long supraorbital flap little longer than eye and no other flaps on head or body.

D. XII, 11, first spine $5\frac{1}{4}$ in total head length, fifth spine $2\frac{3}{4}$, second ray $2\frac{1}{3}$; A. III, 5, third spine $3\frac{3}{5}$, third ray $2\frac{1}{6}$; caudal $1\frac{2}{7}$, convexly rounded behind; least depth of caudal peduncle $3\frac{3}{7}$; pectoral $1\frac{1}{2}$, all 15 rays simple; ventral rays I, 5, fin $1\frac{2}{3}$ in total head length, spine $3\frac{1}{5}$.

Color in alcohol brown, variegated with darker on head and body. Three rather conspicuous, irregular, blackish-brown blotches along lateral line. On lower surface of head, inclusive of maxillary and mandible five dark transverse bands, all much narrower than interspaces. Dark band across interorbital and reflected down below eye on suborbital. Another narrower one connects postero-supraorbital spines. Fins all largely pale. Spinous dorsal with median longitudinal dark band. Soft dorsal with broad submarginal dark band. Anal with two broad dark inclined bands, also several small dark spots on spinous fin. Caudal with broad dark transverse band on outer half of fin. Paired fins with dark transverse narrow or wavy bands and small inclined dark blotch on pectoral base.

Belongs in the subgenus *Osoorioia* Fowler⁸ but differs from its genotype *Scorpaena hemilepidota* Fowler in its greatly larger eye, longer maxillary reaching opposite the hind eye edge, moderate scales, naked predorsal, more dorsal spines and rays, variegated coloration, and a large black blotch on first dorsal.

Type.—U.S.N.M. No. 99522. Cammahana Bay, Luzon Island, Philippines. Taken in beach seine. March 11, 1909. Length 27 mm.

Paratype.—U.S.N.M. No. 99523. Cammahana Bay, Luzon Island. Taken in beach seine. March 11, 1909. Length 25 mm.

(*ταβία*, ribbon + *ὄφρυς*, eyebrow, with reference to the large supraorbital flaps.)

Subfamily MINOINAE

PARAMINOUS, new genus

Type.—*Paraminous quincarinatus*, new species.

Greatly like *Minous* Cuvier superficially, though without the long preopercular spine, much smaller and different preorbital spine, different sculpturing on the head, more numerous cutaneous flaps as those on supraorbital and mandible, shorter body, longer pectoral and different coloration.

Minous inermis Alcock⁹ apparently belongs in this genus as *Paraminous inermis* (Alcock), showing a similar armature, a greatly longer pectoral and a much longer detached pectoral ray, details doubtless of specific value.

(*παρά*, near + *Minous*.)

⁸ Proc. U. S. Nat. Mus., vol. 85, p. 63, 1938.

⁹ Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, p. 299, pl. 22, fig. 4, 1889 (type locality: Bay of Bengal).

PARAMINOUS QUINCARINATUS, new species

FIGURE 13

Depth 3; head $2\frac{1}{4}$, width $1\frac{1}{2}$. Snout broad, depressed forward with front snout end forming well below level of eye or orbit, length to eye (in profile) $2\frac{7}{8}$ in head measured from snout tip; eye 5, $1\frac{7}{8}$ in snout, $1\frac{3}{7}$ in interorbital, close to but not entering upper profile of head; orbit $3\frac{1}{2}$ in head measured from upper jaw tip; maxillary reaches halfway below eye, expansion equals eye, length $2\frac{2}{5}$ in head measured from snout tip; mouth large, broad, little inclined from horizontal, lower jaw slightly protruding in front; teeth in villiform bands in jaws, band above much broader; similar band transversely

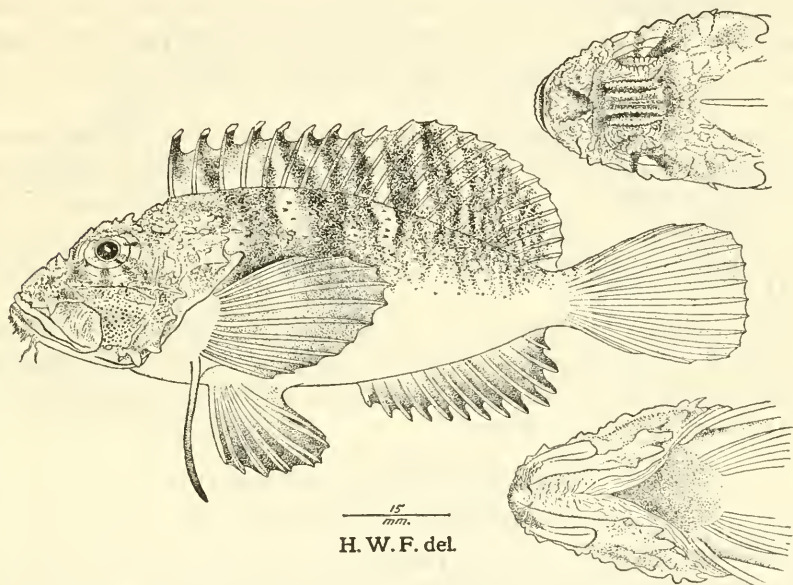


FIGURE 13.—*Paraminous quincarinatus*, new species: Type (U.S.N.M. No. 99515).

across vomer, constricted medially; interorbital $3\frac{2}{5}$, concavely depressed. Gill opening large, extends forward opposite middle of eye. Gill rakers 4+9, clavate, robust, long as gill filaments, which are $\frac{1}{3}$ of orbit.

Armature of head quite robust, with many ridges finely serrate or rugose and spines broad, low and strong; pair of broad low nasal spines; supraorbital spines little differentiated as antero-preorbital pair and two close-set postero-supraorbital pairs; nuchal and supra-occipital pairs low, with last better developed; three or four pre-orbitals, last best developed and directed downward; spines on sub-orbital stay irregular and low; preopercle with five spines, first below

smallest and directed down; two small rather closely set short opercular spines, directed back.

Body scaleless. On back small, inconspicuous, scattered, short filamentous points. Along lower front edge of mandible uneven fringe of cutaneous filaments, posterior longest.

D. IX, 13, first spine $3\frac{3}{5}$ in total head length, third ray $2\frac{1}{4}$; A. II, 11, second spine $5\frac{3}{4}$, eighth ray $2\frac{7}{8}$; caudal $1\frac{2}{5}$, hind edge convexly rounded; least depth of caudal peduncle $4\frac{2}{5}$; pectoral $1\frac{1}{3}$, rays I, 11; ventral rays I, 5, fin $1\frac{4}{5}$ in total head length.

Color in alcohol brown, variegated with darker on back, forming two broad vertical blotchlike bands below first dorsal and five bands transversely on second dorsal. Six dark brown bands radiate from eye. Caudal pale, uniform. Anal dark gray terminally on lower border of fin. Pectoral dark terminally and two transverse gray bars basally, with lower end of free ray blackish. Ventral dark gray on lower border.

A very distinct species and easily distinguished from *Minous monodactylus* (Schneider) by its armature. Especially characteristic are the five parallel longitudinal keels within the whole extent of the interorbital space. Comparison made with two examples of *Minous monodactylus*, 114 to 117 mm. long from Kagoshima, Japan (U.S. N.M. No. 71667).

Type.—U.S.N.M. No. 99515. D. 4930. NE. point Yaku Shima, N. 19° W., 10.7 miles (lat. $30^{\circ}12'N.$, long. $130^{\circ}44'E.$), in Colnett or Vincennes Strait. In 84 fathoms. August 15, 1906. Length 103 mm. (*quintus*, five + *carina*, keel.)

Genus OCOSIA Jordan and Starks

OCOSIA GRACILE, new species

FIGURE 14

Depth $3\frac{1}{4}$; head $2\frac{2}{5}$, width $1\frac{7}{8}$. Snout long, broad, rather pointed front end forms well below level of eye, length $1\frac{7}{8}$ in head measured from snout tip; eye $4\frac{1}{10}$, $1\frac{1}{2}$ in snout, greatly exceeds interorbital, high but not entering upper profile of head; orbit $3\frac{1}{5}$ in head as measured from snout tip; maxillary reaches below first third of eye, expansion 2 in eye, length $2\frac{2}{3}$ in head measured from snout tip; mouth large, little inclined from horizontal, lower jaw little protruded in front; lips broad, fleshy, smooth; teeth in villiform bands in jaws, upper band little broader; broad bands of villiform teeth on vomer and palatines; bony interorbital width $\frac{3}{7}$ of eye or $8\frac{2}{3}$ in head as measured from snout tip; preorbital with 2 spines, both directed backward and upper much longer; 4 spines along hind edge of preopercle, uppermost largest. Gill opening large, deeply cleft and extends forward opposite middle of eye. Gill rakers 3 + 6, rather robust, tuberculiform, barely half long as gill filaments which are $2\frac{2}{3}$ in eye.

No scales. Skin smooth, entire, without any flaps or filaments. Lateral line complete, high, mostly concurrent with upper profile of body.

D. XV, 9, edge of spinous fin deeply notched terminally behind each spine, first spine 6 in total head length, second spine $2\frac{1}{8}$, last spine $3\frac{1}{3}$, third ray $2\frac{1}{4}$; A. 8, first ray $6\frac{1}{5}$, fifth ray $2\frac{1}{6}$; caudal $1\frac{2}{3}$, convex behind; least depth of caudal peduncle 5; pectoral $1\frac{1}{2}$, with 13 simple rays; ventral rays I, 5, rays bifid, fin $1\frac{7}{8}$ in total head length.

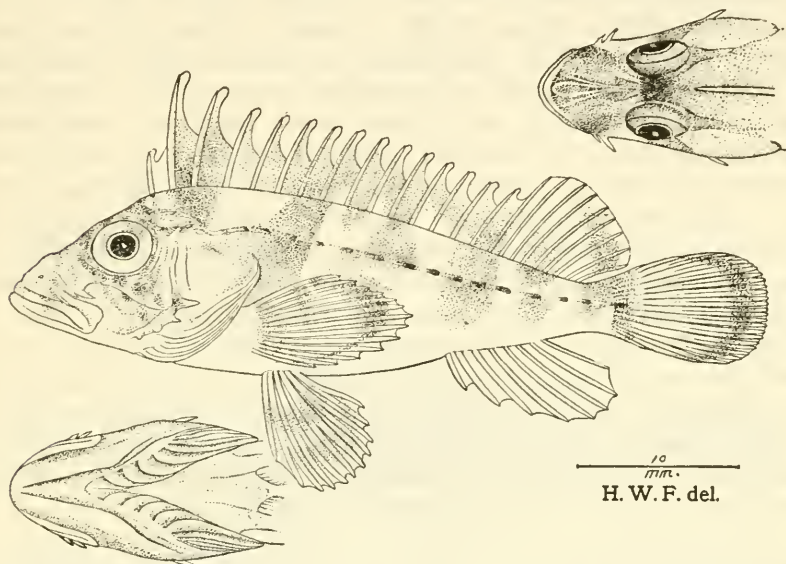


FIGURE 14.—*Ocosia gracile*, new species: Type (U.S.N.M. No. 99513).

Color in alcohol pale gray above, whitish below. Six large dark gray blotches on back, of which five extend on vertical fins and sixth reflected on upper posterior part of second dorsal. Caudal with dark basal bar and dark submarginal band concurrent with hind edge. Pectoral with large dark basal blotch, two small spots above and broad hind submarginal band. Two dark transverse bands on ventral. Head with variable dark spots on side.

Differs from *Ocosia vespa* Jordan and Starks¹⁰ in the lower body, lower dorsal, longer maxillary and different coloration.

Type.—U.S.N.M. No. 99513. D. 4903. Ose Saki Light, N. 22° E., 6 miles (lat. 32°31'10" N., long. 128°33'20" E.), 10 to 20 miles SW. of Goto Islands, Eastern Sea. In 139 fathoms. August 10, 1906. Length 46 mm.

Paratype.—U.S.N.M. No. 99514. D. 4903. Ose Saki Light, N. 22° E., 6 miles (lat. 32°31'10" N., long. 128°33'20" E.), 10 to 20 miles SW.

¹⁰ Proc. U. S. Nat. Mus., vol. 27, p. 162, fig. 17, 1904 (type locality: Sagami Bay.)

of Goto Islands, Eastern Sea. In 139 fathoms. August 10, 1906.
Length 39 mm.

(*gracile*, slender.)

Family OPLICHTHYIDAE

ACANTHOPLICHTHYS, new genus

Type.—*Acanthoplichthys pectoralis*, new species.

Body well elongated and depressed, depth less than half of greatest width. Head large, broadly depressed. Snout broad, long, broadly obtuse in front. Eye small, supralateral, median in length of head and close to but not invading upper profile. Maxillary reaches below front of eye. Mouth broad, terminal, closed lower jaw slightly shorter or included. Teeth, if present, very minute, not evident, and jaws and palate smooth. Interorbital greatly wider than eye. Gill opening very large, extends forward below eye. Gill rakers small low tubercles, rather few. Skin largely smooth, scaleless. Ridges of head above and edges of suborbital stay spinescent, though all spines on head small and little differentiated. Row of rather large spines all along lateral line. Two dorsals, well separated, first small and lower than second. Anal like second dorsal, opposite, its rays all little longer. Caudal small, rounded convexly behind. Caudal peduncle small, slender, free. Pectoral greatly elongated, reaches halfway to hind edge of caudal and lower 3 rays detached. Ventral short, not reaching anal.

Approaches *Rhinoplichthys* Fowler in the large smooth elongate areas on the head before the eyes and the broad interorbital width. It differs at once in the greatly extended pectorals.

(ἄκανθα, spine + *Hoplichthys*, with reference to its spinescent armature.)

ACANTHOPLICHTHYS PECTORALIS, new species

FIGURE 15

Depth $8\frac{3}{4}$; head $2\frac{3}{5}$, width $1\frac{1}{3}$. Snout $2\frac{2}{5}$ in head; eye 8, $3\frac{1}{3}$ in snout, $1\frac{2}{3}$ in bony interorbital width; maxillary reaches front eye edge, length $2\frac{2}{5}$ in head; mouth width $2\frac{4}{5}$, lower jaw shorter than upper and included when closed; teeth not made out, jaws and palate smooth; bony interorbital width 5 in head, low, level. Gill rakers 3 + 5, short, low tuberclelike knobs, greatly lower than gill filaments.

Frontal ridges, also parietal, occipital and postocular with rows of small spines or spinules. Two divergent spinescent ridges on opercle. Suborbital stay with spinescent edges and two long spines at angle

of preopercle. Lateral line with 26 large spines, much larger than those on head.

D. VI—15, 1, third $3\frac{3}{4}$ in head, first ray of second fin $3\frac{1}{8}$, last ray $6\frac{1}{8}$; A. 16, 1, second ray 3, last ray $6\frac{3}{4}$; caudal $2\frac{2}{3}$, elongate, convex behind; least depth of caudal peduncle $10\frac{1}{2}$; pectoral 1, rays 11, III; ventral I, 4, fin 2 in head.

Color in alcohol pale to light brown, largely whitish below. Back with four large dark blotches, all reflected on bases of dorsals. Some dark-gray diffuse spots on head. First dorsal largely gray black, its upper border whitish. Second dorsal with submarginal dark band. Caudal with two dark basal blotches, one above the other, and hind border of fin blackish. Fins otherwise pale to whitish.

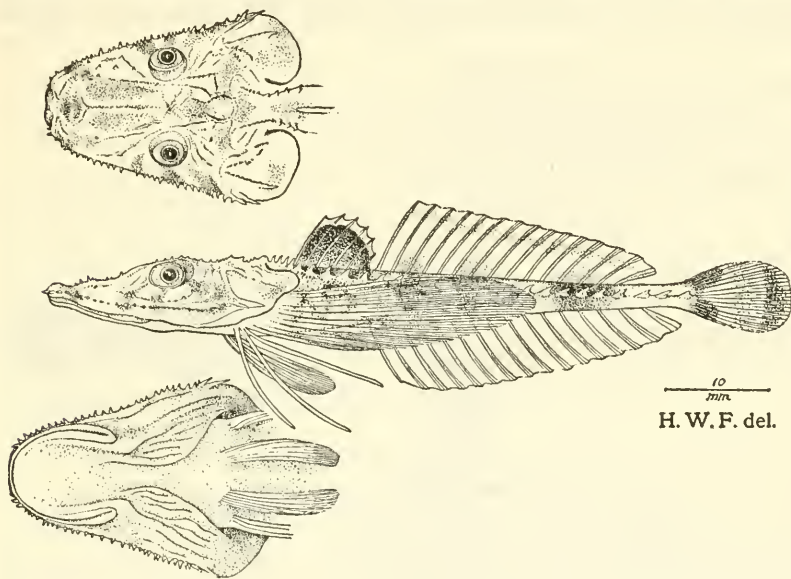


FIGURE 15.—*Acanthoplichthys pectoralis*, new species: Type (U.S.N.M. No. 99503).

Greatly suggestive of the Australian *Rhinoplichthys haswelli* (McCulloch) and the Hawaiian *Rhinoplichthys platophrys* (Gilbert) but differs from both in the greatly longer pectorals and the first dorsal rays.

Type.—U.S.N.M. No. 99503. D. 5440. San Fernando Point Light, N. 82° E., 23.1 miles (lat. $16^{\circ}33'52''$ N., long. $119^{\circ}52'54''$ E.), west coast of Luzon. In 172 fathoms. May 10, 1909. No. 3547. Length 73 mm.

(*pectoralis*, pectoral, with reference to the greatly developed pectoral fins.)

Family PERISTEDIIDAE

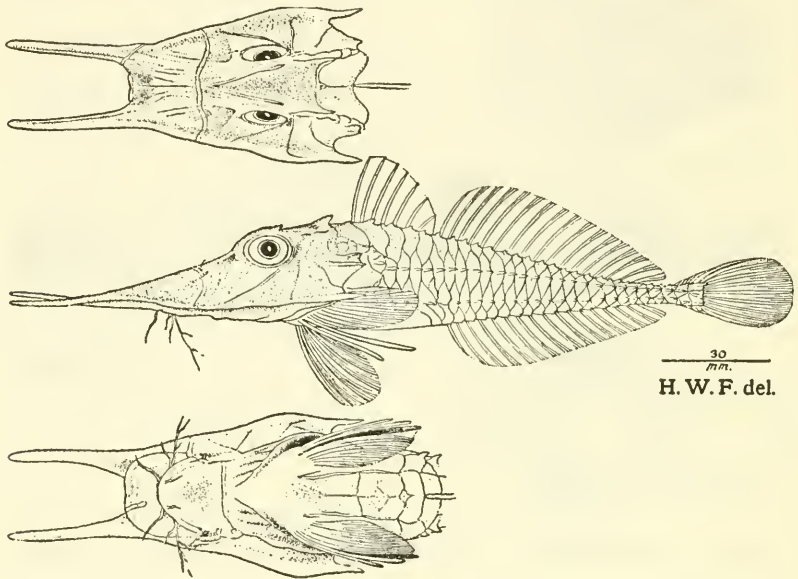
Subfamily PERISTEDIINAE

Genus PERISTEDION Lacepède

PERISTEDION LONGICEPS, new species

FIGURE 16

Depth $5\frac{2}{5}$ in body measured from snout tip inside rostral extensions; head $2\frac{1}{2}$, width $1\frac{1}{2}$. Snout 2 in head; eye $5\frac{7}{8}$, 3 in snout, $1\frac{1}{6}$ in interorbital; orbit 5 in head measured from snout tip inside rostral extensions; maxillary length $5\frac{1}{6}$, reaches $\frac{3}{4}$ in snout length as measured to eye; 3 pairs of barbels, front pair simple and longer posterior pair with several filaments, its length 2 in snout and mandibular pair shortest; teeth not evident, edges of jaws smooth; interor-

FIGURE 16.—*Peristedion longiceps*, new species: Type (U.S.N.M. No. 99516).

bital $4\frac{4}{7}$ in head measured from snout tip inside rostral extensions, broadly concave. Gill rakers 7+22, lanceolate, longer than gill filaments or $2\frac{1}{2}$ in orbit; several upper gill filaments rudimentary.

Pair of very slender, slightly diverging rostral extensions, each little longer than snout, separated by broad interspace with narrowest part of contraction much wider than either of extensions; single low, strong, backwardly directed supraorbital spine each side;

large occipital spine with rather long base each side; postocular keel ends in blunt suprascapular spine; opercle with 2 keels diverging backward, lower horizontal and longer or long as eye, both ending in short spine; keel of suborbital stay entire, nearly straight or but little undulous; preopercle ends in long strong spine $1\frac{1}{3}$ in eye.

From above gill opening 30+1 bony lateral plates; 4 rows of diminishing spiniferous plates on trunk; spines all large, strong, erect and with surfaces finely rugose or striate; hind pair of plates on belly before vent $1\frac{1}{3}$ length of front pair; arc of 5 small scutes from over gill opening downward.

D. VII—17, first spine $3\frac{2}{5}$ in head, fifth ray $3\frac{1}{8}$; A. 17, fifth ray 4; caudal $2\frac{1}{2}$, convex behind; least depth of caudal peduncle $2\frac{1}{4}$ in eye; pectoral $3\frac{1}{8}$ in head, rays I, 10—II, upper detached ray 2 in head and reaches $1\frac{1}{4}$ to anal origin; ventral rays I, 5, fin $2\frac{1}{10}$ in head.

Color in alcohol largely pale or light uniform brownish, paler below. Iris pale. Fins immaculate like body.

Known among all the representatives of its family by the very long head, longer than the rest of the body, the armature and the long pectoral filaments longer than the pectoral fin.

Type.—U.S.N.M. No. 99516. D. 5374. Tayabas Light (outer), N. 9° E., 7.4 miles (lat. $13^{\circ}46'45''$ N., long. $121^{\circ}35'08''$ E.), Marinduque Island and vicinity. In 190 fathoms. March 2, 1909. No. 24281. Length 195 mm. from end of broken frontal projections to hind end of broken caudal.

(*longiceps*, long head.)

ACANTHOSTEDION, new genus

Type.—*Acanthostedion rugosum*, new species.

Head as seen from above rather elongately hexagonal. Pair of rather long rostral extensions in form of isosceles triangle, subequal with or slightly less than snout in length. Eye large, supralateral, in posterior half of head. Maxillary short. Mouth small. Two pairs of rather small barbels, posterior longer branched. Interorbital concave. Preopercular spine very long, reaches well posterior in pectoral fin or close before anal fin origin, greatly posterior to end of small opercular spine. Large, though short and strong postero-supraorbital spine. Pair of very long, inclined, and prominent occipital spines, reaching far into first dorsal fin. Dorsal with five spines, fin subequal in height with second dorsal. Anal opposite and similar to second dorsal. Caudal slightly emarginate behind. Pectoral moderate, reaches into front of anal, two lower detached rays subequal in length with upper rays. Ventral longer than pectoral, reaches anal. Coloration uniform.

A genus of peristediids known by its greatly developed spines, as frontal, supraorbital, occipital, opercular and preopercular pairs, besides the spiny series on the body and all more or less rugose striate. Also all the barbels small and anterior simple. Very conspicuous and distinctive are the exceptionally long pair of occipital spines, well-inclined back.

(ἀκανθα, spine + στῆθιον, from *Peristedion*.)

ACANTHOSTEDION RUGOSUM, new species

FIGURE 17

Depth 5 in body as measured from snout tip inside rostral extensions; head $1\frac{7}{8}$, width $1\frac{1}{3}$. Snout $2\frac{1}{2}$ in head; eye 5, 2 in snout, 1 in interorbital; maxillary extends halfway to eye, length $7\frac{3}{5}$ in head; mouth width $3\frac{1}{8}$; anterior mandibular barbel 7, posterior $2\frac{2}{5}$, front pair simple; mouth edentulous; interorbital $4\frac{3}{4}$, concavely depressed. Gill rakers $8+20?$, finely lanceolate, over twice gill filaments or 2 in eye.

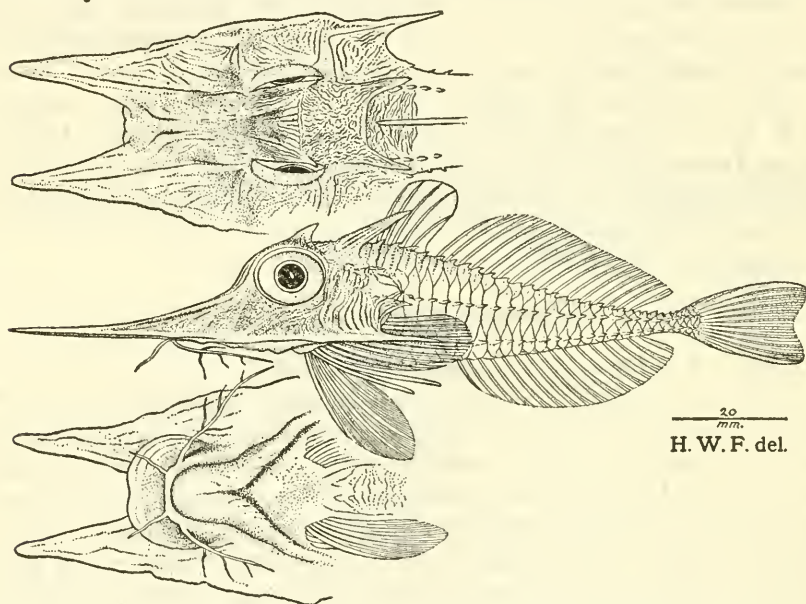


FIGURE 17.—*Acanthostedion rugosum*, new species: Type (U.S.N.M. No. 99501).

Pair of long isosceles triangular extensions, flat or depressed, moderately wide interspace about $\frac{3}{4}$ to $\frac{4}{5}$ of basal width of either extension; large postero-supraorbital spine half of eye diameter in length, its front edge finely serrated; very long, strong, inclined occipital spine $1+\frac{1}{8}$ times eye diameter, extends back to base of last dorsal spine; opercular spine moderate or small, without distinct keel for-

ward; keel of suborbital stay with undulous and very finely serrated edge and ends behind in long extended spine nearly long as eye.

Beginning over gill opening 29+1 bony lateral plates; 4 rows of diminishing spiniferous plates on trunk; spines all quite large, strong, well erected, and surfaces of plates finely rugose; bones of head all well striate on upper surfaces, rugose on cranium and most of bony ridges of head minutely serrate; arc of five small and little-developed scutes formed over gill opening and down posteriorly.

D. V—16, third spine $3\frac{9}{10}$ in head, fifth ray $3\frac{7}{8}$, last ray 7; A. 16, seventh ray $4\frac{2}{5}$; caudal $2\frac{3}{4}$, slightly emarginate behind; least depth of caudal peduncle 16; pectoral $3\frac{2}{5}$, rays II, 11; ventral rays I, 5, fin $2\frac{1}{10}$ in head.

Color in alcohol largely uniform pale or light brown, no markings. Characters contained in the generic account.

Type.—U.S.N.M. No. 99501. D. 5121. Malabrigo Light, N. 14° W., 9 miles (lat. $13^{\circ}27'20''$ N., long. $121^{\circ}17'45''$ E.), east coast of Mindoro. In 108 fathoms. February 2, 1908. Length 67 mm.

Paratype.—U.S.N.M. No. 99502. D. 5121. Malabrigo Light, N. 14° W., 9 miles (lat. $13^{\circ}27'20''$ N., long. $121^{\circ}17'45''$ E.), east coast of Mindoro. In 108 fathoms. February 2, 1908. Length 55 to 63 mm. [33.] Seven examples.

(*rugosum*, roughly granular.)

Family POMACENTRIDAE

Subfamily CHROMINAE

SERRICHROMIS, new genus

Type.—*Dascyllus pomacentroides* Kendall and Goldsborough.

Body elongately ovoid, back little elevated. Head moderate, deep, compressed. Snout short, broad, blunt. Eye large, supralateral. Mouth cleft short, terminal, with lower jaw slightly protruded and snout tip level with lower edge of pupil. Lips narrow, entire. Teeth in jaws firmly erect, conic, pointed, strong, outer row little enlarged and also strong inner irregular band of one to three variable rows, outer row extending well down along lower edge of maxillary; below inner small teeth best developed in front part of jaws. Maxillary reaches eye. Preorbital and infraorbitals narrow, only edge of former free as mouth opens and edges nowhere with serrae. Preopercular edge serrate around angle. Interorbital convex. Gill rakers about 10+20, finely lanceolate, slender, slightly shorter than gill filaments, which are $\frac{1}{2}$ of eye. Scales moderate, on head without basal auxiliaries and very compact over head, on snout extending forward to its front edge and covering mandible. Tiers of scales extend up over membranes of spinous dorsal and all soft vertical fins well and

finely scaled basally. Ventral with pointed axillary scale half length of fin spine. Lateral line with long exposed simple tubes in upper section. First dorsal lower than second, with 12 spines and edge of each membrane notched, rays 11. Anal with 2 spines and 11 rays. Caudal emarginate. Pectoral shorter than ventral.

Though the genotype was originally included in *Dascyllus* it has little in common with the Dascyllinae. It seems to me more closely related to the various genera of the Chrominae, and is especially distinguished by its serrated preopercle, strong dentition and combination with other characters.

(*serra*, saw + *Chromis*.)

SERRICHRONIS POMACENTROIDES (Kendall and Goldsborough)

Dascyllus pomacentroides KENDALL and GOLDSBOROUGH, Mem. Mus. Comp. Zool., vol. 26, p. 298, pl. 5, fig. 1, 1911 (type locality: Taritari, Gilbert Islands).

Pomacentrus pomacentroides FOWLER, Mem. B. P. Bishop Mus., vol. 10, p. 315, 1928 (type).

The type (U.S.N.M. No. 65812) examined.

LEPICEPHALOCHROMIS, new genus

Type.—*Chromis cupreus* Fowler and Bean.

Teeth with main row of large simple conic ones in each jaw; inside a band of irregular small ones, one to three transverse series for almost whole of upper jaw and in lower jaw similar band only anteriorly. Head with many small scales around eye on chin, along edge of preopercle flange, lower inner edges of head forming gill opening and at bases of all of scales on top of head. Each tube of lateral line well exposed, with several very short anal tubes or branches both above and below. Gill rakers 9+25, lanceolate, little shorter than gill filaments, which are $\frac{3}{4}$ of eye. Preorbital edge not free. Preopercle edge well free, distinct and entire. Pectoral axil dark brown.

Apparently related to *Chromis* in its largely uniform coloration, without the blue spots of *Heliases*, though agreeing with the latter in the possession of 13 dorsal spines. It also appears to be distinguished by the small scales on the cheek in 8 rows, besides the very small and crowded scales elsewhere on the head.

(*λεπίς*, scale + *κεφαλή*, head + *Chromis*.)

LEPICEPHALOCHROMIS CUPREUS (Fowler and Bean)

FIGURE 18

Chromis cupreus FOWLER and BEAN, Proc. U. S. Nat. Mus., vol. 63, p. 22, 1923 (type locality: Fiji or Samoa).—FOWLER, Mem. B. P. Bishop Mus., vol. 10, p. 309, 1928 (type); Proc. Amer. Philos. Sec., vol. 82, No. 5, p. 784, 1940 (type).

The type (U.S.N.M. No. 83108) examined.

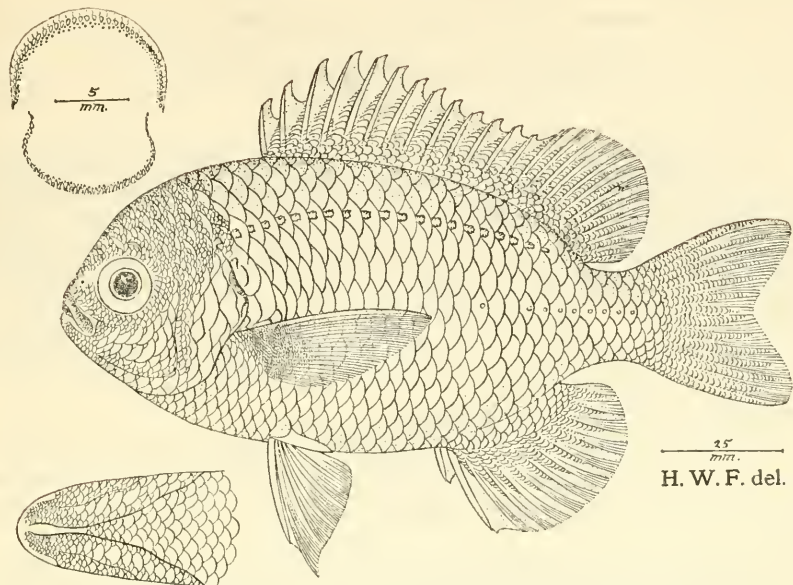


FIGURE 18.—*Lepicephalochromis cupreus* (Fowler and Bean): Type (U.S.N.M. No. 83108).

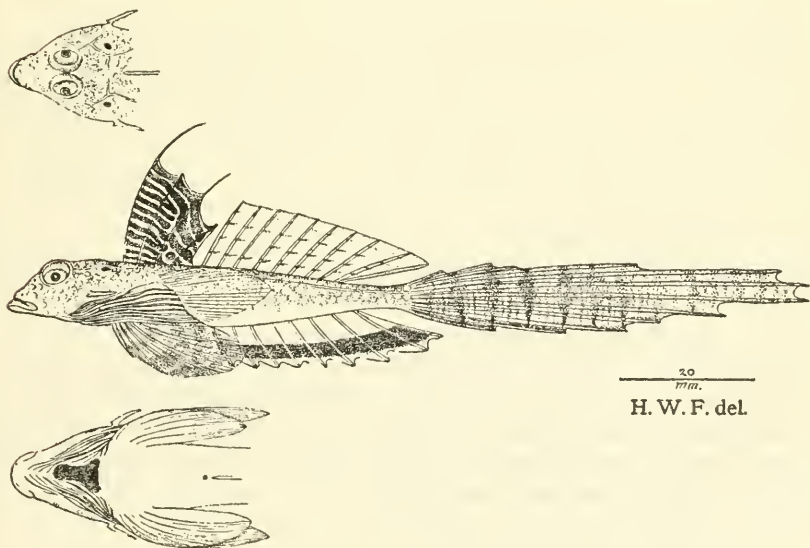


FIGURE 19.—*Calliurichthys linea-thorax*, new species: Type (U.S.N.M. No. 99504)

Family CALLIONYMIDAE

Genus CALLIURICHTHYS Jordan and Fowler

CALLIURICHTHYS LINEA-THORAX, new species

FIGURE 19

Depth $6\frac{2}{5}$; head 4, width 1. Snout $2\frac{1}{4}$ in head; eye $3\frac{2}{3}$, $1\frac{3}{4}$ in snout; maxillary not quite reaching to eye, entire, length (in profile) 3 in head; orbit $2\frac{7}{8}$, separated from its fellow only by narrow bony ridge; mouth cleft short, lower jaw very slightly shorter and included in upper jaw; lips narrow, smooth, entire; teeth fine, minute, villiform, in narrow bands in both jaws. Preopercular spine long as orbit, ends in backwardly directed point and along inner edge row of about a dozen very fine uniform denticles and small subbasal denticle in front pointing forward.

Lateral line complete, high along side of back, simple, connecting intersection on predorsal before first dorsal and two intersections rather closely set on caudal peduncle posteriorly a little before caudal base.

D. IV—9, 1, first spine $2\frac{1}{3}$ in fish without caudal, third spine $3\frac{1}{2}$, first ray of second dorsal fin $1\frac{1}{3}$ in head, last ray 1; A. 8, 1, first ray $2\frac{1}{4}$, last ray $1\frac{1}{10}$; least depth of caudal peduncle $4\frac{1}{8}$; caudal fin nearly long as rest of fish; pectoral $3\frac{2}{3}$ in fish without caudal, rays 1, 18; ventral rays I, 5, fin length 3 in fish without caudal.

Color in alcohol light brown to pale mauve above, marked with very numerous and variable dark rings, arcs, and spots. About 10 rather large dark brown blotches along each side of back above. All under surfaces of body largely white. On head above many dark rings, closely set and variable. On head below large black blotch, more or less triangular on throat or chest, and on each side extended up on prepectoral region many or numerous dark brown parallel lines, separated by narrow pale to whitish lines. First dorsal largely blackish with numerous more or less longitudinal parallel white lines on first half of fin and fusing or giving place to greatly fewer on last half of fin. Second dorsal with four dark longitudinal streaks, most distinct or darker on fin rays. Anal pale, with broad blackish submarginal band. Caudal with 10 dark blotches on upper half of fin and broader intervals with dark circles and arcs; lower half of fin with edge of each ray terminally dark. Pectoral pale. Ventral whitish, with five transverse dark bars.

Known by its very distinctive coloration, the branchiostegal and prepectoral region with many parallel close-set longitudinal bands,

separated on chest and throat by a large blackish triangular blotch. First dorsal with first and third spines ending in short filaments and fin crossed by numerous parallel white lines. The caudal long as rest of fish. Preopercular spine with seven antrorse spinules along its upper edge, besides the terminal point and subbasal spine directed forward. This species approaches *Calliurichthys japonicus* (Houttuyn) as described and figured by Jordan and Fowler, though differing markedly in its coloration of the thorax and first dorsal.

Apparently resembles *Calliurichthys gardineri* (Regan)¹¹ differing chiefly in coloration, especially the more lined thorax and throat.

Type.—U.S.N.M. No. 99504. D. 5174. Jolo Light, E. 2.60 miles (lat. 6°03'45" N., long. 120°57' E.), vicinity of Jolo. March 5, 1908. In 20 fathoms. No. 1813 [403]. Length 115 mm.

(*linea*, line + *thorax*.)

Genus SYNCHIROPUS Gill

SYNCHIROPUS DELANDI, new species

FIGURE 20

Depth $5\frac{1}{3}$; head $3\frac{1}{4}$, wide as long. Snout $4\frac{1}{8}$ (in profile) to gill opening; eye $3\frac{3}{4}$, exceeds snout, greater than interorbital; orbit $2\frac{1}{2}$ in head; maxillary reaches below front of eye, length $3\frac{3}{5}$ in head to gill opening, entire; mouth cleft reaches about $\frac{7}{8}$ in snout, lower jaw little shorter than upper; teeth in villiform bands in jaws, none on palate; bony interorbital moderately narrow, width $1\frac{7}{8}$ in eye, low; preopercle spine slightly less than eye, curved, ends in slender up-curved spine and rather large forward curved denticle on inner upper edge; no basal spinule in front.

Lateral line complete, high at first, falls median along side of caudal peduncle.

D. IV—8, 1, first spine $1\frac{1}{15}$ in head, first ray 1; A. 7, 1, first ray $\frac{3}{8}$, last ray $1\frac{1}{8}$; least depth of caudal peduncle $4\frac{1}{8}$; pectoral $1\frac{1}{15}$, rays 1, 22; ventral rays I, 5, fin $3\frac{1}{6}$ in fish without caudal; caudal $1\frac{4}{5}$, lower rays longest.

Color in alcohol pale brown above, paler to whitish below. About 5 large gray brown blotches on back, mostly wider than paler interspaces and all more or less with rather large arcs or rings of darker. All along lower half of side of body parallel dark or gray bars. Head variegated with diffuse brown blotches above. First dorsal with five slightly darker brown blotches along first spine. Second dorsal pale, with two white longitudinal bands and upper anterior

¹¹ *Callionymus gardineri* Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, p. 248, pl. 30, fig. 5, 1908 (type locality: Cargados Carajos, Indian Ocean).

edge of fin narrowly black. Anal pale, with broad dark submarginal band. Caudal with five inclined, narrow, whitish bars along upper rays, hind edge of fin dark all around besides dark semitransverse basal band. Paired fins pale, dark blotch at upper base of pectoral.

Differs from *Synchiropus pallidus* in having the end of the preopercle spine upturned or vertical, the second dorsal with three horizontal white stripes and the female with a dark blotch on the third membrane of first dorsal.

Type.—U.S.N.M. No. 99524. D. 5589. Mabul Island (NW.), N. 3° W., 2.8 miles (lat. 4°12'10" N., long. 118°38'08" E.), Sibuko Bay, Borneo and vicinity. In 260 fathoms. September 29, 1909. No. 1959. Length 189 mm.

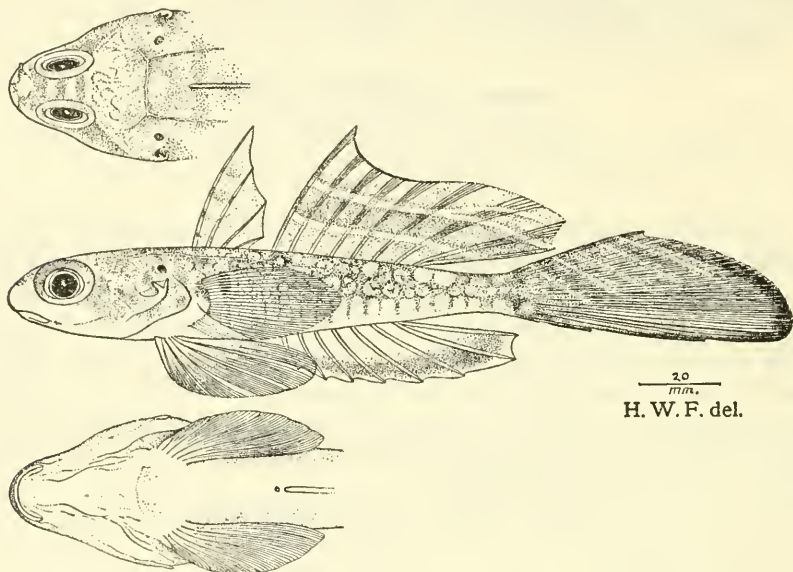


FIGURE 20.—*Synchiropus delandi*, new species: Type (U.S.N.M.No. 99524).

Paratypes.—U.S.N.M. No. 99525. D. 5516. Point Tagolo Light (Mindanao), S. 80° W., 9.7 miles (lat. 8°46' N., long. 123°32'30" E.), northern Mindanao and vicinity. In 175 fathoms. August 9, 1909. No. 1610. Length 148 mm.

U.S.N.M. No. 99526. D. 5518. Point Tagolo Light, S. 64° W., 8.7 miles (lat. 8°48' N., long. 123°31' E.), northern Mindanao and vicinity. In 200 fathoms. August 9, 1909. No. 1960. Length 170 mm.

U.S.N.M. No. 99527. No data. No. 2511. Length 130 mm.

(Named for the late Dr. Judson de Land, of Philadelphia, to whom I am indebted for American fishes.)

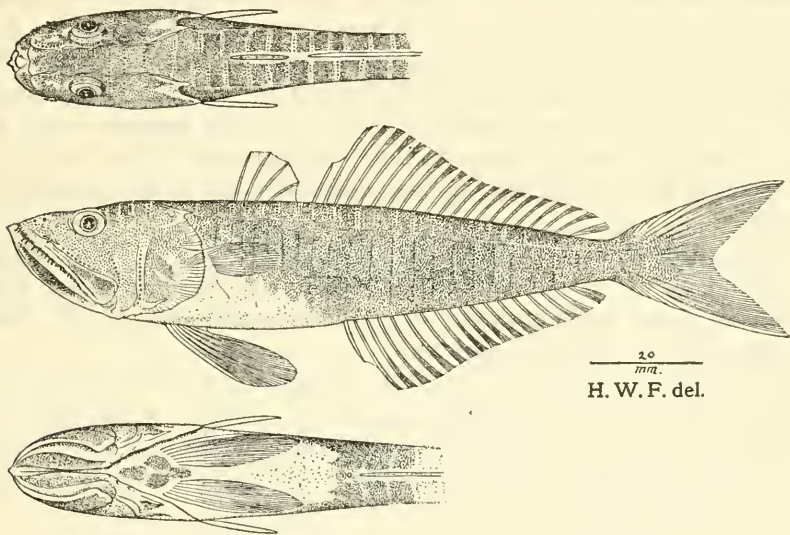
Family CHAMPSODONTIDAE

Genus CHAMPSODON Günther

CHAMPSODON CURTIPES, new species

FIGURE 21

Depth $4\frac{7}{8}$; head 3, width 2. Snout $3\frac{1}{2}$ in head measured from snout tip, which is level with middle of eye; eye $5\frac{3}{4}$, $1\frac{2}{3}$ in snout, $1\frac{1}{10}$ in interorbital; maxillary reaches behind eye space about equal to $\frac{1}{3}$ of eye diameter, expansion $1\frac{1}{8}$ in eye, length $1\frac{1}{2}$ in head measured from snout tip; mouth well oblique, lower jaw well protruded in front and with conic point directed forward at symphysis; teeth in narrow band above, with inner larger row of fangs, depressible inward; two rows of teeth below, inner long fangs and depressible; cluster of few teeth, depressible, variable, each side of vomer; on top of head two bony keels forming wide set pair as prefrontal, frontal, parietal

FIGURE 21.—*Champsodon curtipes*, new species: Type (U.S.N.M. No. 99506).

and occipital, last diverging to distinct suprascapular spine; edge of gill opening with elements of preopercle, subopercle, and interopercle forming marginal series of short equidistant denticles; preopercle with bent or crooked spine at angle, length $1\frac{1}{5}$ in eye and three forward-directed spines along its lower edge; preorbital with three divergent short spines, first directed forward, median downward and last backward; two short postocular ridges. Gill rakers 1+11, lanceolate, subequal with gill filaments or 2 in eye.

Scales all very small, irregular, closely set. On cranium, trunk, and tail transverse series of distinct lines of small scales, separated, about 30 such lines above, and on each side of body intersected by 2

parallel well-spaced lateral lines. On head row of large scales close above and along upper edge of maxillary, besides vertical row on preopercle flange. Maxillary and side of mandible very minutely scaled. Belly and sides of abdomen naked and on breast four close-set finely scaly areas. Of fins only caudal basally covered with small scales.

D. IV—I, 20, 1, second spine $3\frac{1}{2}$ in total head length, second ray 2; A. 1, 17, 1, spine $4\frac{1}{4}$, second ray $2\frac{2}{5}$; least depth of caudal peduncle $5\frac{1}{8}$; caudal $1\frac{1}{2}$, deeply forked, lobes sharply pointed; pectoral $2\frac{1}{2}$, rays 12; ventral rays I, 5, fin $1\frac{1}{2}$, reaches $1\frac{3}{4}$ to anal.

Color in alcohol brown above, paler to whitish below. Fins all pale or uniform brownish.

Apparently very closely related to *Champsodon arafurensis* Regan,¹² though that species would differ at once in having the "ventrals a little shorter than the head, extending to the origin of the anal," in specimens 50 to 75 mm. long. In all my specimens the ventrals fall well short of the anal in the larger ones and not even reaching opposite to them in the smallest. Regan has stated his *Champsodon arafurensis* "seems to be nearest to the one figured by Alcock¹³ and may be the same." If this is true Alcock's figure would further differ from my material in showing the posterior end or tip of the preopercular spine falling well forward of the origin of the ventral fin. In all my specimens it distinctly extends until opposite it.

Type.—U.S.N.M. No. 99506. D. 5396. Panalangan Point, Talájit Island, S. 78° E., 4.5 miles (lat. 11°57' N., long. 124°12'24" E.), between Sámar and Masbate. In 137 fathoms. March 15, 1909. Length 133 mm. Female with ova.

Paratypes.—U.S.N.M. No. 99507. D. 5396 (same data as above). Length 58 to 130 mm. Sixteen specimens. Males with upper $\frac{2}{3}$ of dorsal black and the fin uniformly pale in female. End of each caudal lobe dark brown, also upper border of second dorsal. Supra-orbital cirrus present.

Additional specimens.—One example. D. 5557. Cabalian Point, N. 70° W., 5.2 miles (lat. 5°51'30" N., long. 121°01'00" E.), Jolo Island and vicinity. In 13 fathoms. September 18, 1909. Length 35 mm.

Two examples. D. 5193. Chocolate Island, N. 77° E., 8 miles (lat. 11°16'45" N., long. 123°55'45" E.), off northern Cebu Island, in 71 fathoms. April 3, 1908. Length 37 to 53 mm.

One example. D. 5098. Corregidor Light, N. 21° E., 4.30 miles (lat. 14°80'40" N., long. 120°32'40" E.), China Sea off southern Luzon. In 38 fathoms. January 2, 1908. Length 70 mm.

¹² Trans. Linn. Soc. London, ser. 2, vol. 12, pt. 2, p. 245, 1908 (type locality: Arafura Sea; Ki Islands; 129 fathoms).

¹³ *Champsodon vorax* Alcock, Illustrations of the zoology of H. M. S. *Investigator*, Fishes, pl. 28, 1899.

Seven examples. D. 5100. Corregidor Light, N. 16° E., 5.70 miles (lat. $14^{\circ}17'15''$ N., long. $120^{\circ}32'40''$ E.), China Sea off southern Luzon. In 35 fathoms. January 2, 1908. Length 61 to 78 mm.

Three examples. D. 5454. Legaspi Light, S. 64° W., 5.7 miles (lat. $13^{\circ}12'$ N., long. $123^{\circ}50'30''$ E.) east coast of Luzon. In 153 fathoms. June 7, 1909. Length 45 to 54 mm.

One example. D. 5183. Lúsarín Light, S. 29° E., 4 miles (lat. $10^{\circ}32'48''$ N., long. $122^{\circ}26'$ E.), between Panay and Negros. In 96 fathoms. March 30, 1908. Length 38 mm.

One example. D. 5644. Makasser Island (E.), N. 4° E., 1.3 miles (lat. $5^{\circ}27'24''$ S., long. $122^{\circ}38'00''$ E.), Buton Strait, Dutch East Indies. In 22 fathoms. December 16, 1909. No. 22931. Length 60 mm.

One example. D. 5278. Malavatúan Island (N.), S. 23° E., 8.50 miles (lat. $14^{\circ}00'10''$ N., long. $120^{\circ}17'15''$ E.), China Sea vicinity of southern Luzon. In 102 fathoms. July 17, 1908. No. 10022. Length 58 mm.

Four examples. D. 5369. Tayabas Light (outer), No. 50° W., 8.8 miles (lat. $13^{\circ}48'$ N., long. $121^{\circ}43'$ E.), Marinduque Island and vicinity. In 106 fathoms. February 24, 1909. Length 56 to 104 mm.

Nineteen examples. D. 5376. Tayabas Light (outer), N. 53° W., 18.7 miles (lat. $13^{\circ}42'50''$ N., long. $121^{\circ}51'30''$ E.), Marinduque Island and vicinity. In 90 fathoms. March 2, 1909. Length 43 to 90 mm.

One example. D. 5391. Tobig Point (Destacada Island), N. 31° E., 3 miles (lat. $12^{\circ}13'15''$ N., long. $124^{\circ}05'03''$ E.), between Sámar and Masbate. In 118 fathoms. March 13, 1909. Length 36 mm.

One example. D. 5257. Utara Point, Bongo Island, N. 88° W., 7.70 miles (lat. $7^{\circ}22'12''$ N., long. $124^{\circ}12'15''$ E.), southern Mindanao, eastern Illana Bay. In 28 fathoms. May 22, 1908. Length 65 mm.

(*curtus*, short + *pes*, foot, with reference to the ventral fins.)

Family TRICHINOTIDAE

Subfamily KRAEMERINAE

GOBITRICHINOTUS, new genus

Type.—*Gobitrichinotus radiocularis*, new species.

Body elongate, slender, compressed, with tail little tapering. Head elongate, $1\frac{1}{2}$ in trunk, attenuated, wider than deep at occiput. Snout short, depressed. Eye very small, near first fourth in head, closely set

to one another and superior. Mouth large, superior. Maxillary extends below eye. Mandible large, well protruded forward, with fleshy end in front. Two pairs of nostrils anteriorly on snout. Interorbital very narrow. Gill opening very low, rather small. No scales. Myomeres distinct. Two dorsals. Origin of first dorsal opposite depressed pectoral and ventral tips, of five spines. Second dorsal origin midway between depressed pectoral tip and anal origin, which last little nearer gill opening than caudal base. Caudal small. Paired fins small, with ventral little larger than pectoral. Several dark lines radiate down and back from eye.

Related to *Kraemeria* Steindachner but differing chiefly in its greatly longer trunk which is but little shorter than the tail, longer pectoral, and more variegated coloration.

(*Gobius* + *Trichinotus*.)

GOBITRICHINOTUS RADIOULARIS, new species

FIGURE 22

Depth $12\frac{1}{4}$; head $4\frac{1}{5}$, width $2\frac{3}{4}$. Snout $4\frac{7}{8}$ in head measured from snout tip; eye $4\frac{3}{4}$ in snout, slightly greater than interorbital, small and superior; maxillary oblique, extends down and little beyond eye, length $3\frac{3}{4}$ in head measured from snout tip; teeth minute, conic, simple, apparently uniserial in jaws; tongue with slender median notch in front; interorbital level. Gill opening extends forward not quite halfway in head.

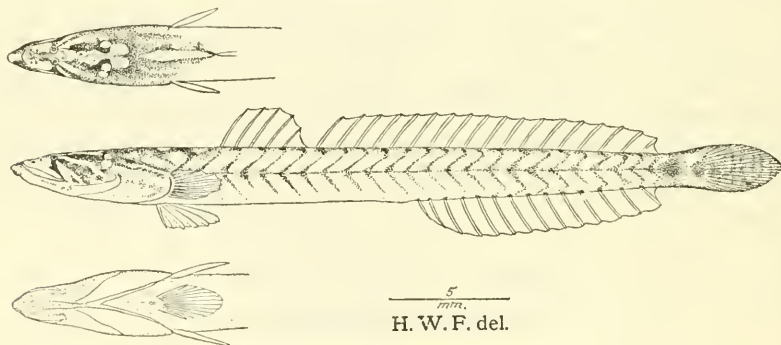


FIGURE 22.—*Gobitrichinotus radiocularis*, new species: Type (U.S.N.M. No. 99549).

Skin smooth, scaleless. Myomeres 11 + 13.

D. V—18, height of either fin less than greatest body depth and last ray like last anal ray connected with caudal peduncle by low membrane; A. I, 13, last ray opposite last dorsal ray; least depth of caudal

peduncle $4\frac{3}{4}$ in total head length; pectoral 3, rays 9; ventral I, 5, fins joined, length $2\frac{1}{2}$ in total head length.

Color in alcohol brown, limit of each myomere slightly darkened. On top of head dark bar down from eye to hind part of maxillary, and two others radiate back from hind part of each eye, expanding backward. Uppermost of each band in hind part of its expansion with two pale or whitish spots, one above the other and below and before median large pale occipital blotch. Dark diffuse shade on free part of caudal peduncle. Caudal with about six obscure transverse median dark parallel bars. Fins otherwise all uniformly pale.

Type.—U.S.N.M. No. 99549. Malabang River, southern Mindanao. Caught by hand. May 21, 1908. Length 32 mm.

Paratype.—U.S.N.M. No. 99550. Same data as type. Length 21 mm.

Characters largely in the generic account above.

(*radius*, ray + *ocularis*, of the eye, with reference to the markings.)

Family PTEROPSARIDAE

ROXASELLA, new genus

Type.—*Roxasella fusiforme*, new species.

Body subcylindrical, elongately ovoid in lateral contour, with long tapering tail. Caudal peduncle short, free, compressed. Head attenuated, depressed. Snout long, pointed, depressed. Eye small, superior, enters upper profile of head. Maxillary long, extends back well below eye. Mouth moderate, lower jaw the shorter. Teeth very small, in jaws and on palate.

Interorbital narrow bony frenum. Scales large, cycloid. Head largely scaled, muzzle naked. Lateral line present, complete, tubes large and simple. Two dorsals, well separated, first fin small with 13 graduated spines. Second dorsal long, little higher in front. Anal little longer than second dorsal, with notched edge. Caudal small, shorter than head. Pectoral moderate, reaches into front of anal. Ventrals small, widely set, inserted close behind preopercle.

Known chiefly by its small first dorsal, subequal jaws or the lower shorter, the small wide-set ventrals, and the large scales.

(Named for Hilario A. Roxas, in appreciation of his work in Philippine ichthyology.)

ROXASELLA FUSIFORME, new species

FIGURE 23

Depth $8\frac{1}{2}$; head $3\frac{1}{3}$, width $2\frac{1}{5}$. Snout $3\frac{7}{8}$ in head; eye $7\frac{1}{8}$, $1\frac{7}{8}$ in snout; maxillary reaches below hind eye edge, length $2\frac{2}{5}$ in head; mouth little inclined from horizontal, lower jaw little shorter as

closed; teeth minute, in narrow bands in jaws, above cluster each side in front followed by narrow band or line on each palatine; bony interorbital narrow frenum, its width $2\frac{1}{2}$ in eye. Gill opening ex-

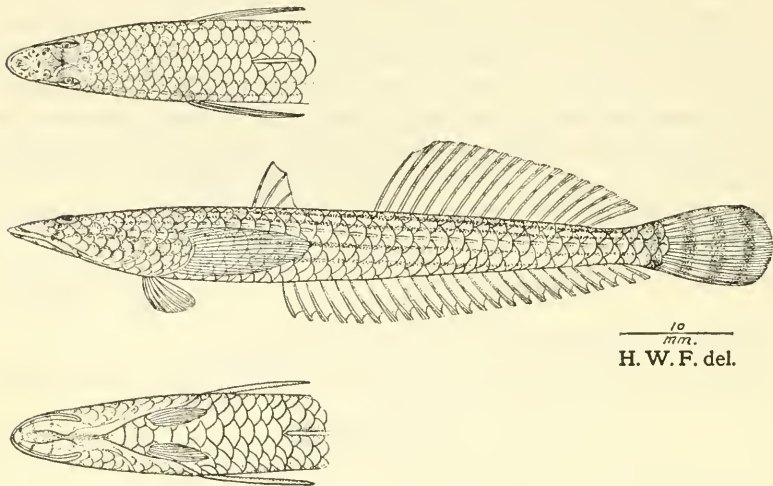


FIGURE 23.—*Roxasella fusiforme*, new species: Type (U.S.N.M. No. 99517).

tends forward halfway in head. Gill rakers not developed, merely as several groups of low minute asperities.

Scales $29+1$ in lateral line; 2 above, 4 below, 15 predorsal forward to eyes; 9 postocular scales on head; row of 12 median scales before ventrals to isthmus. Head scaly, except muzzle and narrow median branchial space. Except for basal row of caudal scales fins scaleless. Lateral line axial along side of body.

D. III—16, first spine $3\frac{3}{5}$ in head, third ray $2\frac{1}{8}$, last ray $4\frac{1}{4}$; A. 24, first ray 5, seventh ray $3\frac{4}{5}$, last ray 6; least depth of caudal peduncle $5\frac{1}{5}$; caudal $1\frac{1}{2}$, hind edge convex; pectoral $1\frac{1}{2}$, rays 15; ventral I, 5, fin $3\frac{1}{6}$ in head.

Color in alcohol pale brown, above variegated with three dark longitudinal streaks on body as 2 above lateral line and 1 below. Also three longitudinal streaks on each side of head. Iris grayish. Fins pale. First dorsal with 2 or 3 brown spots on each spine. Second dorsal with same on each ray. Caudal with 4 dark transverse bands.

Distinctions embodied in the generic account above.

Type.—U.S.N.M. No. 99517. Aparri, Luzon. November 19, 1908. Length 63 mm.

Paratype.—U.S.N.M. No. 99518. Aparri, Luzon. November 19, 1908. Length 44 mm.

(*fusiformis*, fusiform or spindlelike.)

Family ZOARCIDAE

Genus LYCENCHELYS Gill

LYCENCHELYS SPILOTUS, new species

FIGURE 24.

Depth $11 \frac{2}{5}$; head 6, width $2 \frac{7}{8}$. Snout $5 \frac{1}{5}$ in head, convex, front end or tip falling slightly below level of lower eye edge; eye $3 \frac{4}{7}$, greater than snout or interorbital, entering upper profile of head; mouth low, little inclined from horizontal and jaws even; maxillary reaches halfway in eye, length 3 in head; interorbital narrow, width 4 in eye, concave. Gill opening subvertical, length $3 \frac{1}{6}$ in head.

Scales present only on trunk and tail, on front of back along base of dorsal fin and median strip on belly naked, also head. Fins scaleless.

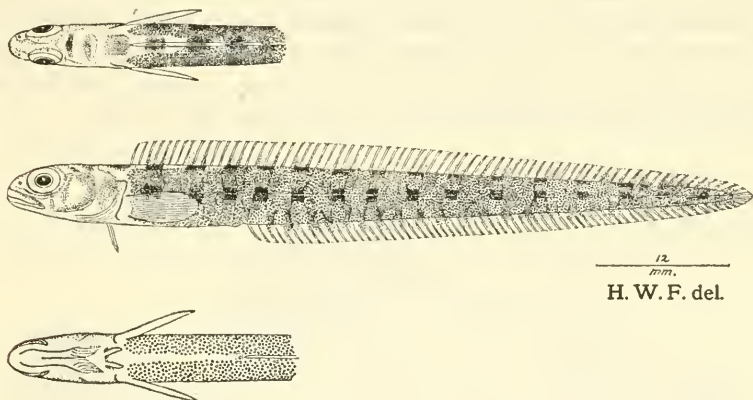


FIGURE 24.—*Lycenchelys spilotus*, new species: Type (U.S.N.M. No. 99511).

Dorsal rays about 70, fin height $4 \frac{1}{8}$, fin origin close behind head or nearly over pectoral; anal rays about 64, fin height $4 \frac{1}{2}$; caudal length $5 \frac{2}{3}$; pectoral $1 \frac{2}{3}$, rays 17; ventral length $3 \frac{3}{4}$.

Color in alcohol light brown, variegated with 16 dark brown quadrate blotches axially along side of body, each giving 2 dark lines above to dorsal base in interval opposite dark quadrate blotch dark bar; on tail each quadrate blotch gives off pair of dark vertical bars or blotches below which are reflected on base of anal fin. Dark blotch on predorsal close before dorsal origin. On head several dark bars on occiput, 1 on postocular, another from lower hind eye edge down over cheek. Two dark bars on opercle. Under surface of head and trunk whitish.

Approaches *Lycenchelys poccilimon* Jordan and Fowler¹⁴ appearing to differ in proportions, much smaller and shorter mouth, larger eye, apparently fewer dorsal and anal rays and the coloration.

Type.—U.S.N.M. No. 99511. D. 4817. Niigata Light, S. 29° E., 18 miles (lat. 38°12' N., long. 138°52' E.). In 61 fathoms. July 18, 1906. Length 70 mm.

(σπίλωτός, spotted.)

Family MONACANTHIDAE

Genus STEPHANOLEPIS Gill

STEPHANOLEPIS RETROSPINIS, new species

FIGURE 25

Depth $1\frac{3}{4}$; head 3, width $2\frac{2}{5}$. Snout $1\frac{1}{3}$ in head, tip in front well below level of eye or opposite upper part of gill opening; eye $2\frac{4}{5}$ in head, 2 in snout, slightly greater than interorbital; mouth small, terminal; teeth little exposed, front pair in each jaw largest; interorbital $3\frac{1}{2}$ in head, convex. Gill opening $1\frac{2}{3}$ in eye.

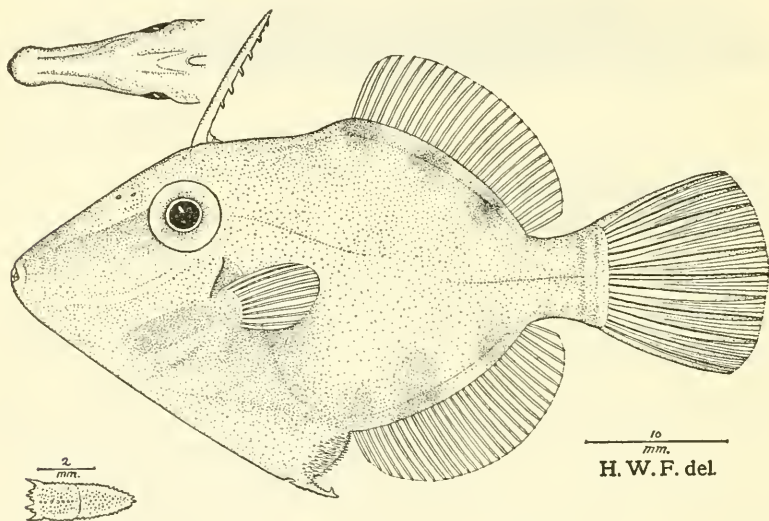


FIGURE 25.—*Stephanolepis retrospinis*, new species: Type (U.S.N.M. No. 108467).

Skin rough velvety. No armature on caudal peduncle or on side of tail. Pelvic flap little developed, with feeble slender spines. Pelvic spine hinged, hind section freely movable, edges spinescent all around.

¹⁴ Proc. U. S. Nat. Mus., vol. 25, p. 748, fig. 2, 1903 (type locality: Off Kuikwazan in Matsushima Bay, Japan).

D. I—25, spine $1\frac{1}{4}$ in head, reaches second dorsal when depressed, with row of 5 recurved large spinules each side and directed downward, second dorsal height $2\frac{3}{5}$ in head; A. 28, fin height $4\frac{2}{5}$; least depth of caudal peduncle $2\frac{3}{5}$; caudal $1\frac{1}{4}$, convex behind; pectoral 2, rays 10.

Color in alcohol brown, little paler below eye and on under surface of body. On body below second dorsal base three diffuse dark gray blotches and 2 along base of anal. Iris gray white. Fins all pale to whitish.

Type.—U.S.N.M. No. 108467. Cebu Island, Philippines. April 24, 1929. Lt. H. C. Kellers. Length 51 mm.

Closely resembles *Stephanolepis cryptodon* as described by Herre¹⁵ especially in its dorsal spine, which is said to have on either side of posterior part a row of six or eight feebly developed downward-pointing prickles. In my specimen they are not feeble and they are well developed denticles or spinules. Moreover the coloration is quite different from that shown in Bleeker's figure of *Paramonacanthus cryptodon*.¹⁶

(*retro*, turned back + *spina*, spine, with reference to the large denticles on the dorsal spine.)

¹⁵ Philippine Journ. Sci., vol. 25, No. 4, p. 455, 1924 (Balayan Bay, Batangas; specimen 56 mm long).

¹⁶ Atlas ichthyologique des Indes orientales Néerlandaises, vol. 5, p. 131, pl. (11) 225, fig. 1, 1865 (Celebes; Amboina; based on two specimens, 84 to 88 mm).

