

More Ichthyological Snippets

By G. P. WHITLEY.

(Contribution from The Australian Museum)

Family ALOPIIDAE.

Genus ALOPIAS Rafinesque, 1810.

ALOPIAS VULPINUS (Bonaterre).

A male thresher shark, 12 ft. 4 in. long and weighing 315 lb., was caught by Mr. L. Downie off Bluefish Point, Manly, New South Wales, on 24th August, 1958.

It had the following characters:—

Dimensions in inches.

Length from snout to upper caudal pit	....	....	....	....	73"
Caudal pit to end of tail (incomplete)	....	....	....	....	75"+
Upper lobe of tail (incomplete)	....	....	....	....	72"+
Preoral length	....	....	....	....	5"
Nostrils	....	....	....	....	$\frac{1}{2}$ "
Internarial	....	....	....	....	1 $\frac{1}{2}$ "
Level of nostrils to upper lip	....	....	....	....	1 $\frac{1}{2}$ "
Diameter of eye	....	....	....	....	1"
Orbit	....	....	....	....	1 $\frac{1}{2}$ "
First gill-slit	....	....	....	....	3"
Interorbital width	....	....	....	....	5"
Distance from eye to first gill-slit	....	....	....	....	12"
Length of pectoral fin	....	....	....	....	24 $\frac{1}{2}$ "
Greatest width of pectoral	....	....	....	....	13 $\frac{1}{8}$ "
Length of dorsal fin	....	....	....	....	13 $\frac{5}{8}$ "
Base of dorsal fin	....	....	....	....	11 $\frac{1}{4}$ "
Length of ventral fin	....	....	....	....	10"
Greatest breadth of ventral fin	....	....	....	....	11"
Clasper	....	....	....	....	12"
Depth of caudal peduncle	....	....	....	....	7 $\frac{1}{2}$ "

No nictitating membrane. Spiracle minute. Teeth with central cusp slightly oblique, without marginal denticles. Lower caudal pit present. Anterior margin of first dorsal fin strongly convex. Rear tip of first dorsal fin terminates considerably anterior to origin of ventrals. No interdorsal ridge. Area of ventrals less than that of first dorsal. Anal fin entirely posterior to levels of second dorsal fin. Anterior margin of pectoral fin nearly straight.

Colour originally blue above, now grey; white and pink below with blotches at junction of the two colours. Pectorals dark greyish-blue above and below. Some green in slime on body.

Stomach Contents: Apart from the bait (forequarters of Bonito, *Sarda australis*) there was a fair-sized, digested mackerel in the stomach, probably *Auxis thynnoides*.

This specimen is about the sixth caught by game-fishermen in N.S.W., other Threshers having been taken by Zane Grey, Errol Bullen, Max Lawson and Mrs. R. Duncan.

Family ANTIGONIIDAE.

Genus ANTIGONIA Lowe, 1843.

ANTIGONIA RHOMBOIDEA McCulloch

Antigonia rhomboidea McCulloch, Biol. Res. Endeavour iii, 3, April 21, 1915, p. 111, pl. xviii, fig. 1. Victoria.

One small specimen trawled by M.V. "Challenge" north-east of Newcastle in 75 to 85 fathoms on 6 July 1959.

Australian Museum regd. No. IB.4400.

New record for New South Wales.

Colours from life, according to Dr. A. A. Racek, in lit., 5 Aug., 1959:—
"On a grey-blue background there are orange to golden vertical bands (I think altogether 3). There is a large band just behind the operculum, a more narrow one in the middle, and a narrow one along the caudal peduncle. All fins light grey, no visible colour pattern. Eyes bright orange-red."

ANTIGONIA BENHALATATE (Bleeker)

Hypsinotus benhalatate Bleeker, Verh. Bat. Gen. xxv, 1853, Nalez. Ichth. Japan, p. 13. New name for *Hypsinotus* Temminck and Schlegel, genus caelebs, from Japan.

Hypsinotus rubescens Gunther, Cat. Fish. Brit. Mus. ii, 1860, p. 63. New name for *Hypsinotus* from Japan. New synonym.

Antigonia benhatatate (sic) Berry, Bull. Florida State Mus. Biol. Sci. iv, 7, 1959, p. 227.

This species should be called by Bleeker's name which is earlier than Gunther's.

Antigonia mulleri Klunzinger is the young of *Capromimus abbreviatus* (Hector).

Family APOGONIDAE

Genus APOGON Lacepede, 1802, s.l.

APOGON DARNLEYENSIS (Alleyne & Macleay).

(Figure 1.)

? *Apogon melas* Bleeker, Journ. Ind. Arch. ii, 1848, p. 635. Sumbawa, Indonesia.

Apogonichthys darnleyensis Alleyne & Macleay, Proc. Linn. Soc. N.S. Wales i, Feb. 1877, p. 268, pl. v, fig. 3. Darnley Island, Queensland. Holotype in Macleay Museum, University of Sydney. And of lists.

Amia melas Fowler, Proc. Acad. Nat. Sci. Philad. 1918, p. 17, fig. 8. Philippine Islands.

Apogon darnleyensis Whitley, Proc. Roy. Zool. Soc. N.S. Wales 1949-50 (1951), p. 64, fig. 9 (synon.).

Here illustrated from the holotype of *darnleyensis*, kindly made available by the Curator of the Macleay Museum. It has the following characters:

D. vii/1, 9; A. ii, 8; P. 15. L. lat 25 to hypural. Tr. 1½/1/6. Predorsal scales 3. Eye, 7 mm.; postorbital, 9; interorbital, 5; standard length, 47.5.

Maxillary keeled, not reaching posterior orbital margin. Anterior preopercular edge entire; posterior serrate near angle. Villiform teeth on jaws, in a boomerang-shaped patch on vomer and apparently present on palatines. Fourth dorsal spine longest. Ventral fin reaching anal.

May be a synonym of *melas* Bleeker.

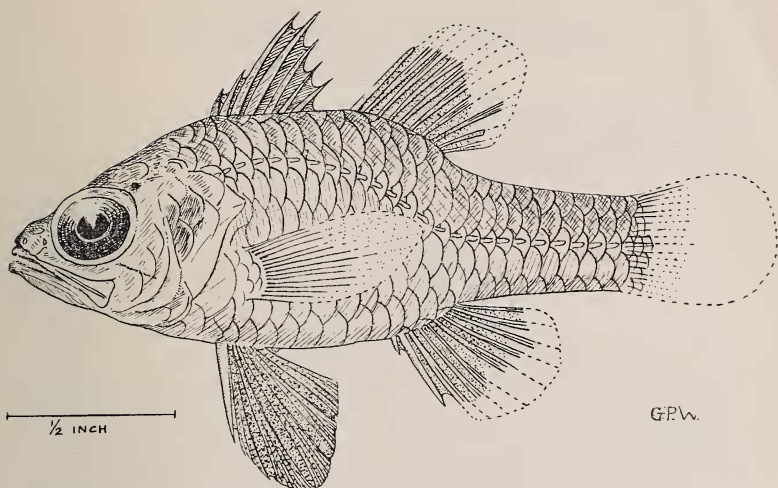


Figure 1.—Torres Strait Soldier Fish, *Apogon darnleyensis* (? = *melas*).
Holotype. Queensland.

G. P. Whitley del.

APOGON NOUMEAE Whitley.
(Figure 2.)

Apogon noumeae Whitley, Proc. Roy. Zool. Soc. N. S. Wales 1956-57 (1958), p. 33, Noumea, New Caledonia. *Id.* Catala, France australe (Noumea) 19th Nov. 1958, figure. Type-loc. "Isoles" islets, Magenta Bay, New Caledonia.

Here figured from the holotype. A second (duplicate) example of this species has been presented by Dr. R. Catala to the Australian Museum (regd. No. IB.4142).

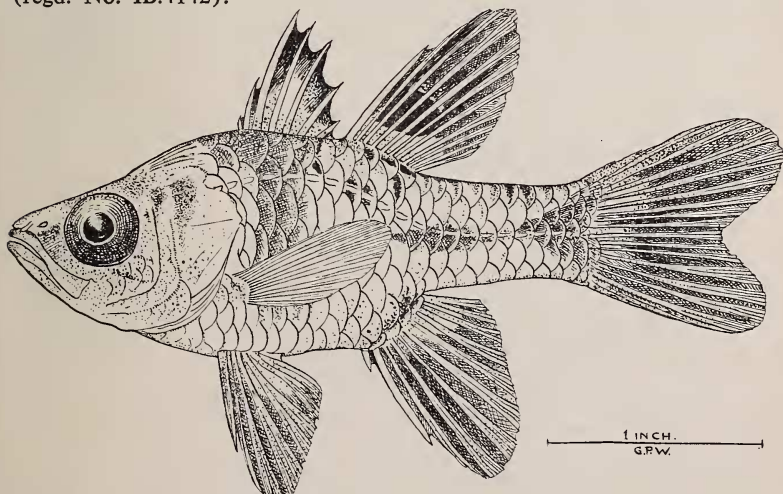


Figure 2.—Noumea Soldier Fish *Apogon noumeae*. Holotype. New Caledonia.

G. P. Whitley del.

Genus APOGONICHTHYS Bleeker, 1854.
APOGONICHTHYS AHIMSA Whitley.
(Figure 3.)

Apogonichthys ahimsa Whitley, Austr. Zool. xii, 1959, p. 314. Heron Island, Queensland.
Here figured from the holotype of the species.

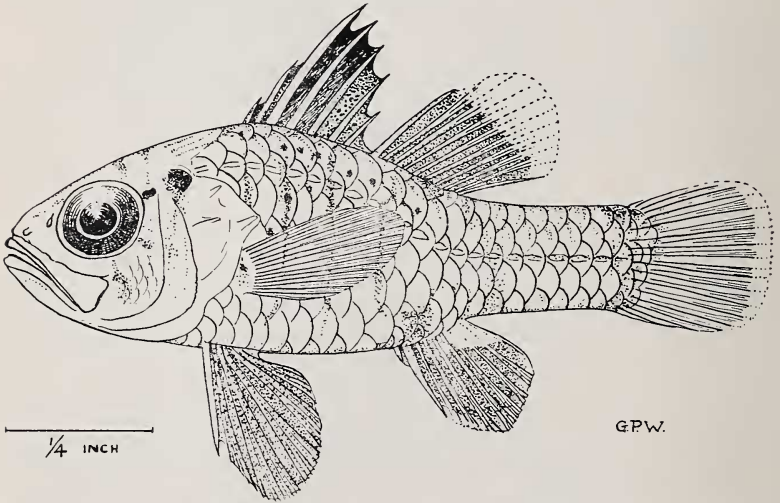


Figure 3.—Gentle Gobbleguts, *Apogonichthys ahimsa*. Holotype. Queensland.
G. P. Whitley del.

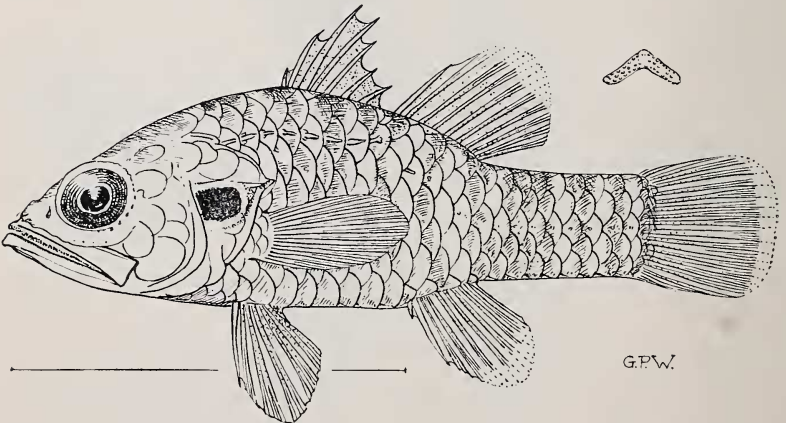


Figure 4.—Eared Soldier Fish, *Fowleria marmorata*. Lectotype. Queensland.
Inset: Vomerine teeth.

G. P. Whitley del.

Genus FOWLERIA Jordan & Evermann, 1903.
FOWLERIA MARMORATA (Alleyne & Macleay).

(Figure 4.)

Apogonichthys marmoratus Alleyne & Macleay, Proc. Linn. Soc. N.S. Wales i, Feb., 1877, p. 268, pl. v, fig. 2. Cape Grenville, Queensland. Cotypes in Macleay Museum. *Id.* Jordan & Seale, Bull. U.S. Bur. Fisher. xxv, 1905 (1906), p. 250, fig. 44 (Samoa).

Fowleria marmoratus McCulloch & Whitley, Mem. Qld. Mus. viii, 1925, p. 146.

Fowleria marmorata McCulloch, Austr. Mus. Mem. v, 1929, p. 173.

Apogon marmoratus Lachner, Bull. U.S. Nat. Mus. 202, 1953, pp. 432, 433, 442, 474 & 476.

Here figured from the lectotype of the species, the larger of two cotypes which I have been privileged to examine in the Macleay Museum, University of Sydney. The coloration has faded after more than 80 years in alcohol, so the pattern has been copied from the small 1877 figure.

D. vii/i, 9; A. ii, 8; P. 14; C. 15 main rays. L. lat. 8 tubes. Sc. 20. Tr. $1\frac{1}{2}/1/5$; predorsal scales 6.

Head, 17 mm.; depth of body, 14; its width, 8; predorsal length, 19; snout to origin of anal fin, 26; eye, 5; interorbital, 2.5; snout, 3; postorbital, 9; maxillary, 8; depth of caudal peduncle, 7; its length, 10.

Chin terminal. Maxillary reaching below posterior border of eye. Both edges of preoperculum entire. Anterior nostril in short tube. Coarse villiform teeth in jaws, vomerine teeth in three rows on broad, V-shaped patch; apparently no palatine teeth. Third dorsal spine longest. General facies as figured. No silvery gland. Lateral line tubes ceasing by second dorsal's origin; thence a few pits along middle of peduncle.

"Coloration reddish-yellow, transversely marbled with brown. There is a broad yellow patch on the praeoperculum, and a large blue white-edged spot on the operculum. All the fins except the pectoral are marked with several small wavy fasciae formed of minute spots." (Alleyne & Macleay.)

Described and figured from the lectotype of the species, 41 mm. in standard length or about two inches overall.

Loc.—Cape Grenville, Queensland.

Some authors regard *marmoratus* as a synonym of *aurita* (Cuv. & Val.), but Lachner distinguishes them.

Genus SIPHAMIA Weber, 1909.

SIPHAMIA ZARIBAE Whitley.

(Figure 5.)

Siphamia zaribae Whitley, Austr. Zool. xii, 1959, p. 323. Heron Island, Queensland.

D. vi/i, 9; A. ii, 8; P. 15. Sc. c. 21. Tr. about 2/6.

Dimensions in millimetres: Head, 8; depth of body, 8 (both 40% of standard length); depth of head nearly 8, its width 5; interorbital, 2.5; eye, nearly 3; snout, about 1; maxilla, 5; predorsal length, 9 (45% of s.l.); dorsal bases, 8; anal base, 2.6; middle caudal rays, 5; depth of caudal peduncle, 2.3. Standard length, 20; total length, 26 mm.

Profile convexly rounded, chin bulging. Nostrils porelike, circular. Maxilla truncate, reaching below middle of pupil. Head mostly naked with few rows of papillae. Preoperculum entire except for about three very inconspicuous denticles at posterior angle. Tongue acute, white at tip, otherwise with thick black glandular tissue. Isthmus very narrow.

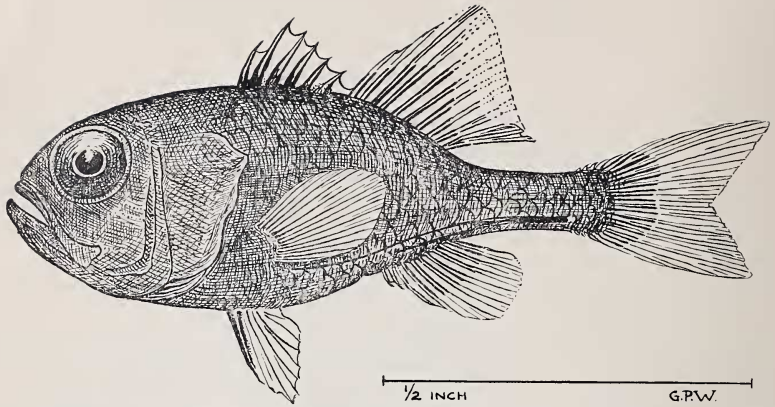


Figure 5.—Zariba Fish, *Siphamia zaribae*. Holotype. Queensland.

G. P. Whitley del.

Body compressed. Scales deciduous, 1. lat. inconspicuous. A black glandular area extends back above anal fin on each side to near procurrent caudal rays. Vent a little distance before anal fin. Caudal peduncle long and shallow.

Spinous dorsal fin originating over opercular flap, its second spine longest (nearly 3 mm.). Anal fin smaller than second dorsal. Pectorals rounded 5 mm. long. Ventrals small. Caudal forked.

Colour in formalin black with the fins white, but the proximal parts of fin rays of unpaired fins have black pigmentation. In life, the fish is said to have green iridescence, imitating the shining areas of the sea-urchins amongst whose spines it lives in numbers. Notes on this inquilinism are being prepared by Queensland colleagues for separate publication.

Loc.—Heron Island, Queensland; Mr. K. Gillett, 1958.

Described and figured from the holotype (Australian Museum regd. No. IB.4129), about one inch long; there is a slightly larger paratype (IB.4132) measuring $1\frac{3}{8}$ inches overall.

Near *Siphamia cuprea* Lachner (Bull. U.S. Nat. Mus. 202, 1953, pp. 415, 418, 423 & 424, fig. 72) from the Philippines but differs in having the second dorsal spine longest of the six in that fin and in its longer, slenderer caudal peduncle.

Siphamia zaribae is evidently closely related to *S. majimai* Matsubara & Iwai (Ann. Mag. Nat. Hist. (13) i, 9, 1958, p. 603, figs. 1-3) from the Amami Islands, China Sea, but differs in having larger eye, higher second dorsal fin, slenderer caudal peduncle, and nostrils not one above the other.

Apart from the holotype and paratype of *zaribae*, the Australian Museum now has 15 specimens from Heron Island (up to $1\frac{1}{2}$ inches long, a ripe female) collected by Mr. Donald Francois amongst spines of the sea-urchin, *Diadema setosa*; also 6 more which Mr. R. Slack Smith collected from "*Echinothrix*" *calmaris* on Heron Island, Queensland, on 25th August 1958. Registered numbers IB.4206-4208 and 4242-4243.

Do the luminescent glands of *Siphamia* imitate or blend with parts of the urchins?

Other fishes associated with the spines of sea-urchins are the razor-fish (*Æolisus*) and the clingfish (*Diademichthys*), but there is a similarly dark and light striped shrimp which takes up the same habitation.

Notes on protectionism*—

Mr. F. A. McNeill, of the Australian Museum, has identified a shrimp, found amongst the spines of the sea-urchin, *Diadema setosa*, from 15 feet of water off Heron Island, Queensland, as *Stegopontonia commensalis* Nobili (Bull. Mus. Hist. Nat. Paris xii, 1906, pp. 258 & 644), a species originally described as "commensal de *Echinothrix turcarum*" in the Hao Lagoon, Tuamotus, but since (1940) recorded by Mortensen from Mauritius. Mr. McNeill kindly suggested that I publish the Heron Island occurrence, a new record for Australia, here. The Australian Museum has a male and a female shrimp, the female being twice the bulk of the male and ovigerous. The colour in life was dense purple, appearing almost black, with a white stripe along the middle of each side. This coloration is strikingly like that of the clingfish, *Diademichthys*, which occurs in a similar situation.

Lovamia fasciata swims amongst the spines of sea-urchins, but, as far as I know, does not hide amongst them as *Siphamia zaribae* does (the trivial name refers to this thorny or palisaded enclosure). Gudger (Zoologica ix, 1927, p. 2) discussed inquilinism between *Apogonichthys puncticulatus* and the univalve mollusc, *Strombus bituberculatus*. Various kinds of fishes have been found associated with the spiny sea-urchin, *Diadema*, according to Mortensen, whose records were elaborated upon by Pfaff (Vidensk. Medd. fra Dansk. nat. Foren. cv, 1942, p. 419), one of the identifiable cases being "commensalism" in Madagascar between *Diadema savignyi* and *Apogon endekatoenia*, recorded by Decary in 1921. More recently, Lachner (Copeia 1955, 1, p. 53) reported inquilinism between *Paramia bipunctata* and sea-urchins.

In October 1958, Dr. R. Catala sent from New Caledonia a fish which he called a "vicious Apogon" for identification and wrote, "By a pure hazard, we put this Apogon some day in the small tank where a deep sea (35 metres) anemone was still alive after many months. After about ten days this Apogon was spending all his time in the anemone, rubbing himself against it with an extreme ardour (more intensively than the most active *Amphiprion* do). He kept up this peculiar habit for eight months and this continual friction caused an inflammation on his belly." The fish was classified as a variety of *Lovamia novemfasciata*. Dr. Catala continued, "In nature we never observed any symbiosis between Apogon and anemone (only certain species of *Apogon* live close to or among sea-urchins, *Diadema*). In this case, it was of course an accidental adaptation and I would be very interested to see if other specimens of this species of *Apogon* will find the same 'pleasure' with this anemone."

SIPHAMIA TUBIFER Weber, 1909.

Siphamia tubifer Weber, Notes Leyden Mus. xxxi, April 6, 1909, p. 168. Timor. Id. Weber, Siboga Exped., Fische, 1913, pp. 235, 243 & 672, pl. x, figs. 9 a-b and text-fig. 61. Id. Weber & Beaufort, Fish. Indo-Austr. Archip. v, 1929, p. 356, fig. 84. Id. Koumans, Temminckia ix, 1953, p. 217 (scales are *cycloid*). Id. Lachner, U.S. Nat. Mus. Bull. 202, 1953, pp. 414 and 418. Id. Smith, Ann. Mag. Nat. Hist. (12) viii, 1955, p. 61.

? *Siphamia fuscolineata* Lachner, U.S. Nat. Mus. Bull. 202, 1953, pp. 415, 418, 425 and 427, fig. 73. Bikini.

D. vi-vii/i, 8-9; A. ii, 8; P. 13. L. lat. about 20 to 22. Tr. 1/1/5. Four or five keeled predorsal scales.

Head 2.3 in or 42% of standard length. Depth 2.6 and 38%. Head-depth 34 to 40% s.l. Eye 43-44% of head-depth, or about 2.7 to 3 in head-length. Snout = interorbital. Predorsal length 42-44% s.l.

* The name for this phenomenon coined by Pfaff (Vidensk. Medd. fra Dansk. nat. Foren. cv. 1942, p. 421).

Free edge of preoperculum slopes slightly ventrocaudally. Preoperculum strongly serrated on both limbs. Operculum with two spines (upper sometimes obsolete) and several large scales, its posterior border concave above. Lower jaw projecting. Mouth oblique, maxillary concave, reaching half-way below eye. Angle between line of upper jaw and horizontal between middle of eye and midbase of caudal fin about 35°. Teeth in coarse villiform bands on jaws, along palatines, and on V-shaped vomer. Tongue scoop-shaped with acute rounded tip. Eight slender gill-rakers on lower part of first gill-arch.

Scales thin, deciduous, cycloid. Lateral line complete, with simple tubes. Peritoneal tubes from mouth to lower part of caudal peduncle, splitting before vent and levelling off at lowest pectoral ray.

First dorsal spines weak and short, sometimes obsolete or lacking. Third dorsal spine longest, about twice length of second and almost as long as height of soft dorsal. Caudal moderately forked or deeply incised.

Colour, after long preservation in alcohol: Dark brown, sprinkled with blackish chromatophores, darkest around dorsal bases. A few small, photophore-like blue spangles on myomeres of back or below soft dorsal base. Three faint, coppery lateral bands; the median one, just behind the head, is about equal in depth to the silvery band above it. Peritoneal tubes silvery, cross-hatched by crescentic or wavy black lines. Fins mostly plain whitish but rays and spines brown basally or brown spotted as is also the membrane to some extent. Caudal root generally dusky or with two dark spots. Base of ventrals blackish. Snout and chin with scattered brown spots, just visible to naked eye.

Larger males practise buccal incubation, eyed larvae being distinguishable in their mouths.

Described from a selection of 53 specimens, $\frac{3}{4}$ to 1 $\frac{3}{8}$ inches long.

Locality: Mallicolo, New Hebrides; collected by Commander Cross of H.M.S. "Undine" many years ago. Australian Museum registered Nos. IB.4244-7.

Very close to *S. fuscolineata* Lachner, but fins with dark marks, scales cycloid, angle of mouth less oblique and operculum usually with two spines. *Apogonichthys guttulatus* Alleyne & Macleay, 1877, is also a *Siphamia* but has stouter build, ciliated (frayed ctenoid) scales, about 6 gill-rakers on lower portion of first gill-arch, and dark-dotted coloration.

Family PLECTROPLITIDAE.

Genus PLECTROPLITES Gill, 1863.

PLECTROPLITES AMBIGUUS (Richardson).

(Figure 6.)

Datnia? ambigua Richardson, Zool. Erebus & Terror, Fish., 1845, p. 25, pl. xix. "Western Australia."

A young specimen of the Callop is here figured from Hillston, Lachlan River, New South Wales; presented by Mr. J. Facey (Austr. Mus. reg. No. IB.2505, part). This fish is distinguishable from the Macquarie Perch (*Macquaria*) by its much smaller scales and the maxillary extends to about middle of eye. The figured example has the following features: D. x, 10; A. iii, 7; P. 15; total length, 26 mm.; standard length, 21; head, 8; depth of body, 7; depth of caudal peduncle, 3; eye, 2.3; maxillary, 4; length of pectoral, 5; of ventral, 4; second anal spine, 3 mm. Pectoral reaching vent. The pores on the head are smaller and rounder than in adults and those of the chin are shown as an inset.

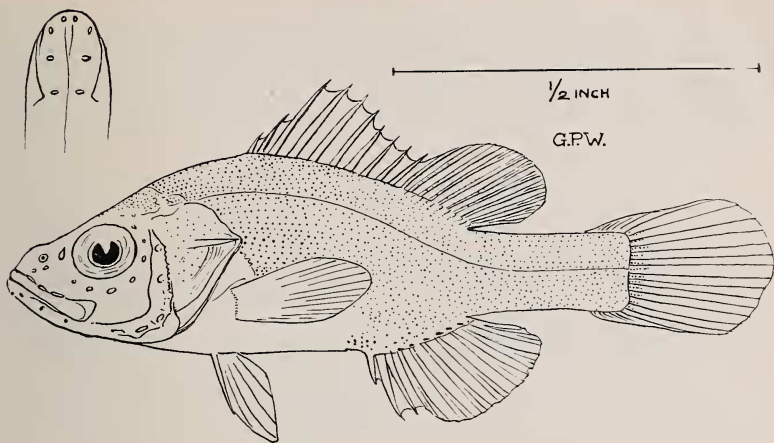


Figure 6.— Callop, *Plectroplites ambiguus*. Juvenile from Hillston, Lachlan River, New South Wales. Inset: Pores on chin.

G. P. Whitley del.

Family ANTHIIDAE

Genus LEPIDOPERCA Regan, 1913.

LEPIDOPERCA OCCIDENTALIS Whitley

Lepidoperca occidentalis Whitley, Rec. Austr. Mus. xxii, 1951, p. 398. Western Australia.

I have found twelve more specimens of this species in the "Endeavour" collection which show that it reaches $7\frac{1}{2}$ inches in length and that its range extends into South Australia.

One, $4\frac{1}{4}$ inches long (No. E.2443) was trawled in 74 fathoms, at $33^{\circ}50'$ S. lat. by $137^{\circ}30'$ long; new record for South Australia.

Eleven (E.2362, 2363, and 2435; I.12341, 12342 and 12399) up to $7\frac{1}{2}$ inches long were taken in between 70 and 120 fathoms, about 80 miles west of the meridian of Eucla, Western Australia in March, 1912.

The colours of I.12341-2 were noted as "Pink above, white below. Lateral line yellow. Eye pink and gold. Dorsal fin yellow. Caudal yellow exteriorly, pink medianly. Pectoral pale yellow. Ventral colourless. Outer half of anterior rays and spines of anal bright orange, rest colourless."

Family LABRIDAE.

Genus THALASSOMA Swainson, 1839.

THALASSOMA STUCKIAE, sp. nov.

(Figure 7.)

D. viii, 10; A. 11; P. i, 14; V. i, 5; C. 15 main rays. L. lat. 21. Tr. 2/1/5.

Head (9 mm.) 3, depth of body (7) 3.8 in standard length (27). Eye (3) 3 in head. Snout 2.3 mm.; postorbital, 4; length of pectoral fin = depth of caudal peduncle, 5; greatest width of fish (at head), 4.

Head naked. Interorbital convex, 2 mm. across. Snout subconic. Front canines small, conic; no posterior canines. General facies as figured. Body oblong, compressed. L. lat. complete, tubes of front scales bifid. Scales on thorax smaller than those on lower parts of sides. Slight scaly sheaths to dorsal and caudal bases. Fins all rounded. Anal spines concealed. Ventrals small.

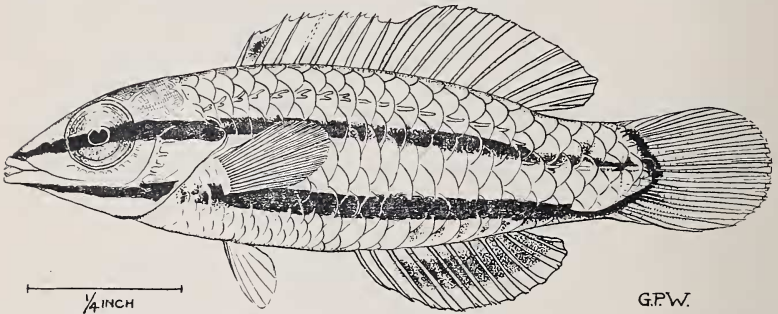


Figure 7.—Madame Catala's Wrasse, *Thalassoma stuckiae*. Holotype, New Caledonia.

G. P. Whitley del.

Colour in formalin, pale sea-green with a blackish stripe from nose to tail and another from chin to tail. Both stripes meet their fellows of the other side to form V-shaped marks on nose and chin. Across the base of the caudal fin the two longitudinal bands are united by an irregular black crescent. A small blackish blotch on anterior membrane of first dorsal fin. Anal fin mostly dusky. Pectorals white.

Described and figured from the unique holotype of the species, a specimen 27 mm. in standard length or 31 mm. (nearly 1¼ inches) overall. Australian Museum regd. No. IB.4151.

Loc.—Noumea, New Caledonia. Presented by Dr. Rene Catala, after whose wife, Madame Ida Catala-Stucki, I have pleasure in naming this elegant species.

The new species differs from others in the genus in having fewer than 25 scales in the lateral line and in its black-banded coloration. A few other species are dark-banded but there is no band from the chin to the tail as in *T. stuckiae*.

The colour-pattern of *Thalassoma stuckiae* is similar to that figured for young *Gomphosus varius* in Gunther's *Fische der Sudsee*, pl. 147, fig. B, which has lower dorsal spines and more numerous scales.

The coloration of this small fish suggests the deduction that it might have some association with other fishes such as that dealt with by Randall (*Pacific Science* xii, 1958, p. 333) concerning young *Thalassoma bifasciatum* and other striped fishes (*Elacatinus*, *Labroides*, etc.) which are believed to feed on the ectoparasites of larger fishes.

Family PENTAPODIDAE.

Genus PENTAPODUS Quoy & Gaimard, 1824.

PENTAPODUS MICRODON (Bleeker).

Heterognathodon microdon Bleeker, *Nat. Tijdschr. Ned. Ind.* iv, 1853, p. 464. Batavia.

Pentapus microdon Bleeker, *Atlas Ichth.* vii, 1872, Pl. ccxcviii, fig. 1 and viii, 1877, p. 101. *Id.* Weber and Beaufort, *Fish. Indo-Austr. Archip.* vii, 1936, pp. 382 and 389.

Pentapodus microdon Marshall, Ichth. Notes i, 3, 1957, p. 122.

There are three specimens, up to 7 inches long, in the "Endeavour" collection, trawled 3 to 7 miles N.W. Hervey Bay, Fairway Buoy, Queensland; 9 to 11 fathoms, 27 July 1910. The Australian Museum has also one of Mr. T. C. Marshall's specimens from North Palm Island, Queensland; coll. George Coates, 15 August 1952.

Family AMPHIPRIONIDAE.

Genus ACTINICOLA Fowler, 1904.

ACTINICOLA NOLAN, sp. nov.

Actinicola sp. nov. Whitley, Mem. Queensland Mus. ix, 1929, p. 214.

D. xi, 17; A. ii, 12; P. i, 16; C. 16. L. lat. 42 tubes. Sc. 60 to hypural joint. Tr. 9/1/29. Predorsal sc. 12.

Head (18 mm.) 3.3, depth (26) 2.3 in standard length (60). Eye (5) 3.6, interorbital (6), 3, and longest pectoral ray (14) 1.2 in head.

General characters as in my description and figure of *Actinicola bicolor* (Whitley, loc. cit., p. 215, pl. xxvii, fig. 2) but differing in formulae, as above, and has the profile sloping, not gibbous, before the dorsal spines. Four or five preorbital and 12 suborbital spines. Predorsal scales reach the back of the white nuchal band.

Colour, after long preservation, dark chocolate-brown, lighter on front of head. Eye blue. Three thick, white-edged cream bands. The first almost encircles head from posterior edge of orbit and is bent like a horseshoe over opercles to be interrupted by the isthmus. The second extends from posterior dorsal spines, crossing 10 or 11 lateral line tubes to descend to first anal spine and vent and is extended forward as a V whose angle is covered by the adpressed pectoral fin. Third band around caudal peduncle. Fins all dark brown and all except ventrals with white margins.

Described from the holotype, 76 mm. or nearly 3 inches overall. Australian Museum registered No. IB.4269.

An "old collection" specimen, unlocalised, so named after Philip Nolan.

Family CHAETODONTIDAE.

Genus CHAETODONTOPLUS Bleeker, 1876.

CHAETODONTOPLUS BALLINAE, sp. nov.

(Figure 8.)

D. xiii, 18; A. iii, 18; P. 2, 14; V. i, 5; C. 13 main rays. About 90 transverse scale-rows between head and hypural joint. Head (41 mm.) 3.8, depth of body (81) 1.9 in standard length (159). Interorbital width (15) greater than eye (12). Pectoral fin (31) shorter than head. Depth of caudal peduncle, 19 mm.

General facies as figured. Profile arcuate, chin prominent. Teeth movable, long, compressed and curved with pointed tips; teeth of upper and lower jaw subequal. Posterior nostril the larger. Cheek as broad as deep. Preoperculum with about 12 to 15 serrae posteriorly and one large spine at its angle. Preorbital smooth, its anterior margin forming an obtuse angle with its lower margin which is slightly convex; hind margin of preorbital concealed by scales. Interoperculum with regular outline, not emarginate, large and without spines, covered with scales and agreeing with Fraser-Brunner's figure 1E (Proc. Zool. Soc. London 1933, p. 544).



Figure 8.—Arrow-backed Angel Fish, *Chaetodontoplus ballinae* Whitley. Holotype. New South Wales.

G. P. Whitley del.

Scales all small, of regular size, strongly ctenoid and with ridges corresponding with the ctenii. They are without auxiliaries and have only a couple of radii. Scales of head similar to those on body, not minute or velvety. Lateral line indistinct, following contour of body to caudal peduncle.

No recumbent dorsal spine. Fifth to last dorsal spines longest. Fins not produced. Pectorals, dorsal and anal lobes rounded. Ventrals pointed, reaching vent. Caudal truncate.

Colours, when fresh: mostly pearly grey. Lips and sides of jaws black. Teeth brown, purple towards their bases. Pupil bluish-black; iris bright yellow. A very dark grey patch uniting the eyes across top of head; not continued down cheek as an ocular band. Pectoral base black. A black area reaching from pectoral axil up to shoulder, running forwards to predorsal scales and first two dorsal spines, is united to the black area of the back and lower parts of the dorsal fins which ceases abruptly over the caudal peduncle and as a sinuate curve over top of flanks. Looked at from above, the dark area appears arrow-shaped. Distal third to half of dorsal fins pearl-grey. No mottling or vermiculations. Pectoral and caudal fins yellow, also most of caudal peduncle. Ventrals and anal pearly.

Described and figured from the unique holotype (Australian Museum registered No. IB.4233), a specimen 159 mm. in standard length or 19 cm. ($7\frac{1}{2}$ inches) overall.

Loc.—Caught in a trap off Ballina bar, northern New South Wales, in deep water in March 1959 and presented by Mr. J. C. Woore.

Easily distinguished from its congeners by its colour-pattern and squamation. The species of this genus seem to be as rare, beautiful and localised as volute shells.

CHAETODONTOPLUS CONSPICILLATUS (Waite)

Holacanthus conspicillatus Waite, Rec. Austr. Mus. iii, June 15, 1900, p. 203, pl. xxxv. Lord Howe Island. *Id.* Fowler and Bean, Bull. U.S. Nat. Mus. 100, viii, 1929, p. 194 (excluding *personifer*).

Chaetodontoplus conspicillatus Fraser-Brunner, Proc. Zool. Soc. London 1933, pp. 549 and 552. NOT of Ogilby, Mem. Q'ld. Mus. iii, 1915, p. 114, which was *personifer*.

Holacanthus (Chaetodontoplus) conspicillatus McCulloch, Mem. Q'ld. Mus. vii, 1922, p. 242.

A six-inch specimen from the aquarium at Noumea, presented by Dr. R. Catala, constitutes a new record for New Caledonia (Austr. Mus. Regd. no. IB. 4433).

Family URANOSCOPIDAE.

Genus URANOSCOPIUS Linnaeus 1758, s.l.

URANOSCOPIUS TERRAEREGINAE Ogilby.

Uranoscopus terraereginae Ogilby, New Fish. Q'ld. Coast, Dec. 20, 1910, p. 131. Trawled in South Queensland. Type in Queensland Museum; cotypes in "Endeavour" collection housed in Australian Museum.

One specimen, 110 mm. long, trawled by M/V "Challenge" at Station 337, off Newcastle in 72 fathoms, 6 July 1959.

Australian Museum regd. No. IB.4382.

New record for New South Wales.

Colours from life, according to Dr. A. A. Racek, in lit, 5 Aug., 1959:— Upper side bluish-grey, with occasional and irregular dark grey spots, widely interspaced. Projecting spines reddish brown. Ventral side light grey. Caudal fin with yellow tinge. Eyes light blue.

FAMILY GOBIOMORIDAE.

Genus OPHIOCARA Gill, 1863.

Subgenus OPHIELEOTRIS Aurich, 1938.

OPHIOCARA APOROS ALEXIS, subsp. nov.

D. vi/i, 8-10; A. i, 9-10; P. i, 13-14; V. i, 5.

Sc. 26-28 (head to hypural). Tr. 10 to $\frac{1}{2}/4/\frac{1}{2}$ or $\frac{1}{2}/5/\frac{1}{2}$ on caudal peduncle. Predorsal sc. (18) 20-21.

Head (13 mm.) 3.4, depth (10) 4.5 in standard length (45) or 4.1 and 5.4 in total length (54). Eye (4) 4.2 in head. Interorbital slightly more than, and snout less than eye-diameter.

Tip of snout before middle of eye. Profile gently convex. Few rows of papillae on scaly sides of head, not in grooves. A groove behind eye and over operculum. Couple of pores at edge of preoperculum. Supraciliary scales present. Most of head scaly, including interorbital and top of snout. Interorbital flat, without crests. Nostrils well separated, with low rims.

Mouth small, not reaching eye; teeth minute, ones in front of jaw slightly enlarged and spaced. No canines. Chin terminal. Opercles unarmed. Gill-membranes not extending far forward and separated by broad isthmus.

Body rather elongate, moderately compressed. Scales smooth but becoming ctenoid posteriorly. A shield-shaped genital papilla.

Dorsal fins separate, first about half as high as body, 3rd and 4th spines longest. Second dorsal higher than first and similar to anal. Pectoral about equal to distance from middle of eye to upper opening of gill. Ventral fins separate. Fourth ventral ray longest, reaching vent. Caudal truncate, slightly shorter than head.

General colour in formalin, pale greenish (bronze-green in life) to grey or dark greyish brown. A bluish-grey spot, surrounded by a lighter area, just before middle of tail. Head generally dusky brown and darker than body. Fins either plain (except for the caudal which is grey mottled) or the dorsal and anal fins are black with white spots and borders and the ventrals are infuscated, with white margins. No dark bars on cheeks or pectoral base.

Described from the holotype (Austr. Mus. regd. No. IB.4171) and six paratypes (IB.4172-6) about 2 to 2½ inches overall.

Loc.—A freshwater lake at Alexishafen, near Madang, New Guinea; Mr. Ned Blood, 1958.

Differs from *O. aporos* (Bleeker, 1854) in having fewer transverse rows of scales and more predorsal scales and maxillary does not reach eye. *O. aporos rignonis* = *guntheri* Koumans, 1937, has fewer predorsal scales and broader interorbital besides different coloration.

Family SCORPAENIDAE.

Genus SCORPAENOPSIS Heckel, 1837.

SCORPAENOPSIS PALMERI FURNEAUXI, subsp. nov.

D. xii, 9 (10); A. iii, 5; P. 17 (1 simple + 6 divided + 10 simple). L. lat. 26 tubes. Sc. c. 35 above l. lat. L. tr. 5 to 9/1/16 to 18. Predorsal sc. 5, reaching to between nuchal spines.

Head (40) 2.3, depth (37) 2.5, length of caudal (24) 3.8, of pectoral (25) 3.7, of ventral (23) 4 in standard length (93). Eye (9) 4.4, interorbital (6) 6.6, snout (14) 2.8, maxillary (21) 1.9, longest (4th) dorsal spine (19) 2.1, second anal spine (18) 2.2 in head. Postocular length of head (21) greater than longest dorsal spine.

A naked pit below anterior border of the eye. Two coronal ridges (not connected posteriorly by a transverse ridge as in typical *S. palmeri* Ogilby). Lower jaw the longer, without symphyseal knob. Maxillary extending almost to below hinder margin of the eye, the width of its distal extremity (8) greater than that of interorbital. Cardiform teeth on jaws and vomer, none on palatines. Nine hooked, short spiny gillrakers on lower part of first branchial arch.

Apart from coronal and postfrontal ridges, the following head-spines are present:—Nasal, preocular, supraocular, postocular, tympanic, several sphenotic, parietal and nuchal united by ridge, pterotic, posttemporal, humeral, postorbital (few, very small), suborbital (3), preorbital (anterior pointing forward, posterior pointing back, and a third low median spine or ridge), 2 over 4 preopercular, and 2 opercular spines.

Occipital groove deep and transversely oblong, not bordered anteriorly by a low arcuate ridge as in *palmeri* and *macrochir*. Head and body with cirrhi.

Fringed tentacles at anterior nostrils and over eyes, between parietal and nuchal spines, at preorbital spines, below chin and lower jaw, each side of snout, around and across preoperculum and along lateral line. A series of lappets around iris of eye. Postocular region and most of operculum scaly (the lower half of the operculum in typical *palmeri* and *macrochir* is naked).

Body scales imbricate, in ascending rows, ctenoid, with 7 to 9 radiating striae. They cover the body and breast and basal portion of pectoral fin; other fins naked.

Dorsal fin originating over operculum. No produced fin-rays. Length of base of soft dorsal fin (18 mm.) 2 in that of spinous dorsal (37). First dorsal spine (10) longer than the eleventh (4); last spine, 11.5 mm. Soft dorsal fin lower than longest dorsal spines. Anal origin below that of soft dorsal. Pectoral reaching beyond vent, its base 15 mm. Ventrals reaching vent. Caudal rounded.

Colour, after long preservation, brown with irregular darker marblings on body and fins. A couple of dark grey spots in pectoral axil.

Described from the holotype of the subspecies, a specimen 93 mm. in standard length, or $4\frac{3}{4}$ inches overall. Smaller paratypes show no important variation.

Localities.— Trawled eleven to fourteen miles N.W. of Pine Peak, Queensland; 24-26 fathoms, 1 August 1910; F.I.V. "Endeavour" (Holotype and paratype, both registered no. E.2896).

Trawled north of Hayman Island, Queensland; 20 fathoms; 1957. Mr. K. De Witte (two paratypes, IB.3978 and 3983).

Near typical *S. palmeri* Ogilby (Proc. Roy. Soc. Qld. xxiii, 1910, p. 27) but with deeper, less elongate form, larger scales, lower half of operculum scaly, coronal ridges not connected by a raised transverse arcuate ridge, and nine gillrakers on lower part of first branchial arch instead of 11. *S. macrochir* Ogilby 1910 is said to have interorbital width 3.9 in head, pectoral 2.7 in length, width of distal extremity of maxillary 1.5 in interorbital, and pectoral base more than 2 in its longest ray. The only other Australian species is *S. diabolus* (Cuv. and Val.) which has a hunched back, broader and less concave interorbital, etc.

Named in honour of Captain Tobias Furneaux, of whom a biography has recently been given by F. S. Blight, Ann. Rept. Trans. Plymouth Instit. and Devon and Cornwall Nat. Hist. Soc. xxii, 1956, p. 70.

Family TRIGLIDAE

HATHA, gen. nov.

Orthotype, *Lepidotrigla mulhalli* Macleay (Proc. Linn. Soc. N.S. Wales viii, 4, Feb. 21, 1884, p. 460, from 40 fathoms off Port Jackson) = *Hatha mulhalli*.

The gurnard named *mulhalli* by Macleay differs from other species of *Lepidotrigla* in having the interorbital space only slightly concave and has the profile convex before the eyes. The new name *Hatha* is supplied for it. The lateral line is without armature and the dorsal fin has no black spot as in *Paratrigla* and *Aoyagichthys*. There is a row of spines along bases of both dorsal fins and the scales are larger than in *Currupiscis*. The genotype and only known species of *Hatha* was hitherto known only from New South Wales, where it is commonly trawled, up to 9 inches in length and is known as Cock Gurnard. It has been described and figured by Waite, Austr. Mus. Mem. iv, 1899, p. 105, pl. xxii.

Hatha mulhalli may now be added to the Victorian fauna, as the "Endeavour" trawled a specimen (E.5458), $7\frac{1}{2}$ inches long, off Gabo Island in 160 fathoms on 28 August 1914, and another (E.1195), $8\frac{3}{4}$ inches long, 25 miles S.W. from Cape Everard.

Genus LEPIDOTRIGLA Gunther, 1860.

LEPIDOTRIGLA CALODACTYLA Ogilby.

(Figure 9.)

Lepidotrigla calodactyla Ogilby, New Fish. Qld. Coast, Dec. 20, 1910, p. 125. North Reef, Capricorn Group, Queensland. And of lists. *Id.* Whitley, Austr. Mus. Mag. xi, 1953, p. 27, fig. of co-type.

Lepidotrigla kanagashira Kamohara, Zool. Mag. (Japan) xlvi, 12, 1936, p. 1007, fig. 2; Fish. Tosa, 1938, p. 54, fig. 29; Rept. Kochi Univ. iii, 1952, p. 74, fig. 73. Mimase, Japan.

Two specimens (No. E.1790), 7 to $7\frac{1}{4}$ inches overall, were trawled by the F.I.V. "Endeavour" eleven miles S. by E. from Ballina, in 28 fathoms on 25 June 1910, are not only of record length but show that this species must now be added to the New South Wales list.

L. kanagashira appears to be a new synonym.

The accompanying figure was drawn from one of Ogilby's co-types. Mr. T. C. Marshall noted the life-colours of a Queensland specimen (Dept. Harb. Mar., Brisbane, No. 1718) as "General colour bright tomato-red, passing into pink below; head bright red; spinous dorsal pinkish-red with a dark red blotch as large as eye on terminal half of 4th and 5th spine, extending to the ends of the 3rd and 6th spines; soft dorsal pink with red spots along the rays; pectorals blackish with wavy markings of pale blue and with a large jet-black patch on the basal half on which are superimposed a few small white spots; ventrals pale yellowish; anal hyaline, the rays pinkish; caudal red, with a wide pink vertical band across its centre, widest at the upper and lower edges of the fin."

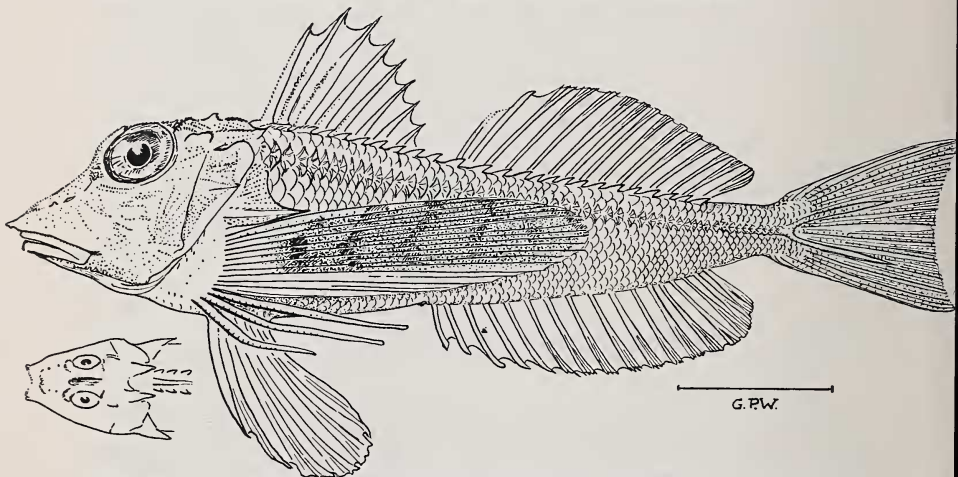


Figure 9.— Gurnard, *Lepidotrigla calodactyla* Cotype from Queensland. Block by courtesy of the Australian Museum, Sydney.

G. P. Whitley del.

Family CHAUNACIDAE.

Genus CHAUNAX Lowe, 1846.

Chaunax Lowe, Proc. Zool. Soc. Lond. xiv, Nov. 1846, pp. 81 and 339. Haplotype, *C. pictus* Lowe.

CHAUNAX PENICILLATUS McCulloch.

Chaunax penicillatus McCulloch, Biol. Res. Endeavour, iii, 3, Apr. 21, 1915, p. 167, pl. xxxiii, fig. 2. Off Cape Everard, Victoria. Type, on deposit, in Austr. Mus.

One specimen, 130 mm. long, trawled by M/V "Challenge" east of Newcastle in 100-160 fathoms on 2 July, 1959. Presented by Dr. A. A. Racek. Rosy pink with greenish spots.

Australian Mus. regd. No. IB.4378.

New record for New South Wales.

Colours from life, according to Dr. A. A. Racek, in lit., 5 Aug., 1959:— Upper part of body, about down to "lateral" line nearly uniformly pinkish brown, with numerous irregularly shaped and arranged blotches of conspicuously light green colour. These blotches in life appear to change colour, but this is not quite so. Seen from above the blotches reflect the light as green, seen from below they appear orange to bright yellow. These blotches appeared to "glow" at night, but this could have been also caused by adhering phosphorescing plankton, as in the case of a starfish taken at the same time. Eyes dull pink.