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STUDIES IN ICHTHYOLOGY.¹

No. 2.

By

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(Plates xvi-xviii and Figures 1-2.)

Family DASYATIDÆ.

HIMANTURA GRANULATA (Macleay).

(Figures 1-2.)

Trygon granulata Macleay, Proc. Linn. Soc. N. S. Wales, vii, pt. 4, April, 1883, p. 598. New Guinea. *Idem*, Garman, Mem. Mus. Comp. Zool. Harvard, xxxvi, 1913, p. 377. Wrongly inserted in synonymy of *Dasybatus gerrardi* (Gray).

Himantura granulata Jordan and Seale, Bull. U.S. Bur. Fish. xxv, 1906, p. 185. *Ex* Macleay. *Id.* Whitley, Journ. Pan-Pacif. Res. Inst., iii, 1, 1927, p. 11.

Re-description of holotype (Fig. 1).—Eye (25 mm.) 2.48 in interorbital (62), and equal in length to the spiracle. Length from snout to dorsal insertion of tail (313) 1.7 in length of tail (557). Width of jaw (27) 2.8 in distance from mouth opening to tip of snout (78). Distance between outer angles of first branchial slits (95) 3.5 in width of disc (335) which is less than length from tip of snout to end of pectoral (357). The distance between the lower gill-openings is equal to the distance from the first slit to the fifth. Ventral fins slightly longer than the interorbital is wide.

Body strongly depressed, the highest point just over the pectoral arch. Margins of fins rounded. Snout ending in a rounded obtuse angle.

Eyes large, twice as long as deep. A concave median area between and before eyes, the interorbital region having apparently collapsed in preservation. A series of posteriorly branching sensory canals visible at the surface on each side immediately before the pectoral arch. Skin thrown into convolutions forming papillæ around mouth; a row of pores in the papillæ over teeth in upper jaw. Teeth lozenge-shaped, close-set in oblique series, each with a cusp over its long axis. Upper buccal flap serrated like a cock's-comb with about 21 points. Two fairly large buccal papillæ with rounded but somewhat frayed edges. The fronto-nasal processes and naso-

¹For No. 1, see "Records," xv, No. 5, 1927, p. 289

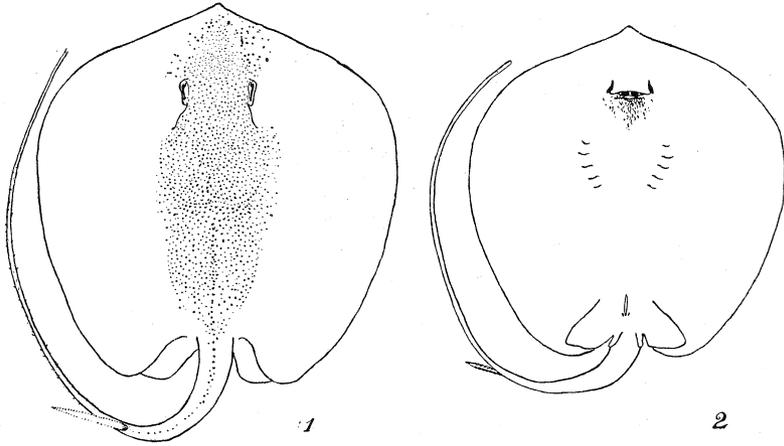


Fig. 1.—*Himantura granulata* (Macleay). Holotype female from Port Moresby district, Papua. Dorsal surface.

Fig. 2.—*Himantura granulata* (Macleay). Allotype male from Vanikoro, Santa Cruz Group. Ventral surface. Drawn to same scale as fig. 1.

G. P. Whitley, del.

buccal grooves have been distorted in preservation; there is a broad median septum. Margins of branchial slits somewhat S-shaped, their edges minutely frayed. The specimen is a female, but has been gutted in a way that obliterates the cloacal aperture. No prepelvic spines. Base of tail fleshy, without folds. The caudal spine has been removed; its base had been overlapped by a piece of papery brown skin. Scattered prickles stud the long tail, becoming smaller as they near the end, and disappearing before the tip, which is blunt, is reached. Head, back, and median line of tail to root of caudal spine evenly covered with thorny granules which are largest near the median line, but do not form a median row or differ amongst themselves except in size. Similar but minute granules extend over the snout and on the sides of the pectorals; they probably extended over the entire disc, but the sides of the type have been rubbed smooth. Ventral fins, ventral surface of disc, and sides and ventral surface of base of tail smooth.

Colour, after long preservation in formalin, brown, lighter below. Margins of ventral surface smoky brown. At least nine ill-defined, crescentic brownish markings along sides, now difficult to trace, but resembling those in Jordan and Starks' figure of the Samoan *Himantura fai*.²

Described and figured from the holotype of *Trygon granulata* Macleay, a female specimen, 34 inches long including the tail, and

² Jordan and Starks.—Bull. U.S. Bur. Fish. xxv, 1906, p. 184, fig. 2.

13 inches wide. Australian Museum regd. No. I.9763. It was collected in the early 'eighties by Andrew Goldie in the Port Moresby district, Papua.

Description of male allotype (Fig. 2).—A second specimen of *Himantura granulata* (1A.2867) was secured by E. Le G. Troughton and A. A. Livingstone from the reef off Sunday River, Vanikoro. It is a male, slightly smaller than the holotype, as may be seen from the figures, which are drawn to the same scale. In outline, it is rounder than the female, and the distal part of the tail is thicker. The entire disc is covered with granules dorsally; these become larger and spiny on the back and extend first in two rows, then in one, along the top of the tail to the origin of the caudal spine. Small prickles are scattered over the surfaces of the tail posterior to the spine as far as the tip. Ventrals fins smooth, their length slightly less than the interorbital width. The highest part of the body is over the back of the skull, the back and interorbital being evenly and convexly rounded. The mouth is tightly shut, so that examination of its internal features may not be made. The width of the fronto-nasal process is over twice its depth; a fine fringe extends along the posterior edge. The nostrils are wide, protected by a slightly twisted, rounded lobe which bears a small inwardly projecting process.

Length, without the tail, 11 inches. Tail $19\frac{1}{2}$ inches. Width of disc $11\frac{1}{2}$ inches. Length of cloacal aperture 21 mm. Abdominal pores distinct. Caudal spine 77 mm. long, barbs extend along the distal halves of the sides almost to the tip. Claspers small, unequal, grooved dorsally. Tail 29 mm. wide at base, originating about on a level with the insertions of the pectorals.

Colour in spirits light greyish-brown above, whitish below. Edges of snout and fins blackish ventrally. Claspers whitish, ventrals greyish. No ocelli.

Remarks.—The Museum collectors were singularly fortunate in securing a specimen of this little-known species at Vanikoro. Their example, further, is well preserved, and its colours and nasal characters are more easily studied than those of Macleay's type. The specimens described above, all that are known of this species, are evidently immature, and it is probable that *Himantura granulata* grows to a large size. I am unable to unite it with any other species of the genus known to me, and disagree with Garman,³ who regarded *Trygon granulata* Macleay as a synonym of *T. gerrardi* Gray⁴ from India.

Range.—Papua; Santa Cruz Archipelago, Melanesia.

³ Garman.—Mem. Mus. Comp. Zool. Harvard, xxxvi, 1913, p. 377.

⁴ Cray.—List. Specim. Fish. Brit. Mus., i, Chondropt., 1851, p. 116.

Family CLUPEIDÆ.*Sub-family* PRISTIGASTERINÆ.*Genus* NEOSTEUS *Norman*, 1923.

Neosteus Norman, Ann. Mag. Nat. Hist. (9) xi, 1, Jan., 1923, p. 17.

Genotype.—*Pellona ditchela* Cuvier and Valenciennes⁵ has been selected as the logotype of this genus in the "Zoological Record." This species is the only *Neosteus* known from Australian waters. It was recorded from between Cairns and Rockhampton as *Ilisha hævenii* by McCulloch; Dr. W. E. J. Paradiçe, whose recent death was a great blow to marine biology in Australia, has collected it in the Edward Pellew Group, Gulf of Carpentaria.

Family PLOTOSIDÆ.COPIDOGLANIS RENDAHLI, *nom. nov.*

Copidoglanis obscurus Rendahl, Medd. Zool. Mus. Krist. No. 5, 1922, p. 173. Glencoe and Hermit Hill, N.W. Australia.

The above name is preoccupied by *Copidoglanis obscurus* Günther,⁶ so I propose *Copidoglanis rendahli* as a substitute.

Family HEMIRAMPHIDÆ.*Genus* HEMIRAMPHUS *Cuvier*, 1816.

Hemi-Ramphus Cuvier, Règne Anim., ed. 1, ii, "1817" = Dec., 1816, p. 186. Haplotype, *Esox brasiliensis* Linnæus. *Id.* Schinz, Das Thierreich (Cuvier), ii, 1822, p. 313. *Id.* Cuvier, Règne Anim. ed. 2, ii, 1829, p. 285.

Hemirhamphus Voigt, Das Thierreich (Cuvier), ii, 1832, p. 383.

The original spelling is adhered to here.

HEMIRAMPHUS QUOYI *Cuv. and Val.*

Hemiramphus quoyi Cuvier and Valenciennes, Hist. Nat. Poiss. xix, 1846, p. 26. Port Dorey, New Guinea.

Hemirhamphus quoyi Bleeker, Atl. Ichth. vi, 1871, pp. 53 and 57, pl. cclii, Fig. 1. *Id.* Weber and Beaufort, Fish. Indo-Austr. Archip. iv, 1922, p. 154. *Id.* McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 138. *Id.* Paradiçe and Whitley, Mem. Qld. Mus., ix, 1, 1927, p. 80, pl. xi, fig. 2.

Hemirhamphus quoyii Schmeltz, Cat. Mus. Godeff. vii, 1879, p. 57.

⁵ Cuvier and Valenciennes.—Hist. Nat. Poiss. xx, 1847, p. 314; ed. 2, p. 228. Based on Russell's "Ditchelee." Coromandel.

⁶ Günther.—Cat. Fish. Brit. Mus., v, 1864, p. 26.

Belone quoyi Klunzinger, Sitzb. Akad. Wiss. Wien, lxxx, 1, 1879, p. 415 (91 of reprint). *Lapsus pro Hemiramphus quoyi*.

Tylosurus quoyi McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 138. *Errore pro Hemiramphus quoyi*.

The species called *Belone quoyi* by Klunzinger and *Tylosurus quoyi* by McCulloch and Whitley belongs to the genus *Hemiramphus*. Schmeltz's record of *H. quoyi* from Bowen, Queensland (*loc. cit.*, supra), has been generally overlooked. The species is represented in the Australian Museum by specimens from Port Darwin, Gulf of Carpentaria, and several Queensland localities.

Family SOLEIDÆ.

SYNAPTURA SETIFER *Paradice*.

Synaptura setifer *Paradice*, Mem. Qld. Mus., ix, 1, 1927, p. 101, fig. 3. Port Darwin, Northern Territory of Australia. Holotype in Austr. Museum.

Mr. D. G. Stead collected one specimen, 196 mm. long, at Clyde Terrace Market, Singapore, on the 25th January, 1923 (Australian Museum registered number 1A.3189), so that the known range of this species is now considerably extended.

Family LUTJANIDÆ.

LUTJANUS CASTELNAUI, *nom nov.*

Genyoroge unicolor Alleyne and Macleay, Proc. Linn. Soc. N.S. Wales, i, 3, Feb., 1877, p. 266, pl. iv, fig. 1. Percy Is., N. Queensland. Not *Neomesoprion unicolor* Castelnau, Viet. Offic. Rec. Philad. Exhib., 1875, Intercol. Exhib. Essays No. ii, p. 8, from Cape York.

Lutjanus unicolor Jordan and Seale, Bull. U.S. Fish. Bur., xxv (1905), 15 Dec., 1906, p. 263. *Id.* McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 151 (ref. to Alleyne and Macleay only).

Since *Neomesoprion unicolor* Castelnau 1875 and *Genyoroge unicolor* Alleyne and Macleay 1877 are evidently both referable to the genus *Lutjanus* Bloch, a new name is required for the latter species, for which *Lutjanus castelnaui* is proposed.

Family APOGONIDÆ.

APOGONICHTHYS ISOSTIGMA *Jordan and Seale*.

Apogonichthys isostigma Jordan and Seale, Bull. U.S. Bur. Fish. xxv, 1906, p. 251, fig. 45. Samoa.

A specimen, 54 mm. long from snout to hypural joint, from Hook Island, Whitsunday Passage, Queensland, agrees excellently

with the description and figure quoted above. Mr. E. H. Rainford collected the specimen, which is registered number 1A.917 in the Australian Museum. New record for Australia.

Family LETHRINIDÆ.

Genus PENTAPODUS Quoy and Gaimard, 1824.

1824. *Pentapodus* Quoy and Gaimard, Voy. Uran. Physic, 1824, p. 294 [*ex* Cuvier MS.]. Haplotype, *P. vitta* Q. and G.
1829. "Les *Pentapodes*" Cuvier, Règn. Anim. ed. 2, ii, April, 1829, p. 184. Vernac. only. Haplotype, *Sparus vittatus* Bloch.
1830. *Leiopsis* Raffles, Mem. Life Stamford Raffles, Feb., 1830 (*vide* Sherborn), p. 688 [*ex* Bennett MS.]. Haplotype *L. rafflesii* (Bennett) Raffles.
1830. *Pentapus* Cuvier and Valenciennes, Hist. Nat. Poiss. vi, Sept., 1830 (*vide* Sherborn), p. 258. Latinized form of "Les *Pentapodes*." Logotype, *Sparus vittatus* Bloch.
1832. *Pentapus* Voigt, Das Thierreich (Cuvier), ii, 1832, p. 253.
1834. "Pentapoda" Griffith, Anim. Kingd. (Cuvier), x, 1834, p. 166. Used only as a vernacular.
1842. *Pentapodus* Agassiz, Nomencl. Zool., 1842, Pisces, p. 47. Latinized form of "Les *Pentapodes*" Cuvier. Logotype, by present designation, *Sparus vittatus* Bloch.
1843. *Mænoides* Richardson, Icon. Piscium, 1843, p. 8. Logotype fixed by Jordan (Classif. Fish., 1923, p. 197) as *M. aurofrenata* Rich. = *Pentapus vitta* Cuv. and Val.
1873. *Gnathodentex* Bleeker, Versl. Akad. Amsterd. (2), vii, 1873, p. 41. Orthotype, *Pentapus aurilineatus* Bleeker (*vide* Jordan, Gen. Fish. iii, 1919, p. 367).

Note on priority.—*Pentapodus* Quoy and Gaimard, 1824, has precedence over *Leiopsis* Raffles, Feb., 1830 (*vide* Sherborn, Index Anim. ii, 1, 1922, p. civ) and *Pentapus* Cuvier and Valenciennes, Sept., 1830 (*vide* Sherborn, Ann. Mag. Nat. Hist. (9), xv, 1925, p. 600). In a letter, Mr. Sherborn informs me to the effect that Quoy and Gaimard's use of *Pentapodus* in 1824 is earlier than any publication of *Pentapus* or its variants as a genus of fishes, and that *Leiopsis* does not appear in literature before February, 1830.

PENTAPODUS SETOSUS (*Cuvier and Valenciennes.*)

- Pentapus setosus* Cuvier and Valenciennes, Hist. Nat. Poiss. vi, 1830, p. 270. Batavia. *Id.* Bleeker, Atl. Ichth. viii, 1877, pp. 100-101, pl. cccxxiv, fig. 1.
- Labrus? iris* Richardson, Ann. Mag. Nat. Hist., xi, 1843, p. 357 [*ex* Solander MS.]. Not "Le Labre iris" = *Labrus irideus* Lacépède, 1802, and not *Pentapus iris* C. and V., 1830. Off Bustard Bay, New Holland (Queensland).

Two specimens collected by Surgeon-Lieutenant L. Lockwood, H.M.A.S. "Moresby," in the Hervey Bay district. One, 225 mm. long, has a caudal filament of 91 mm.

Synonymy.—*Labrus? iris* was the manuscript name given by Solander to a fish caught on May 24, 1770, off Bustard Bay. Richardson published Solander's name and notes in 1843, since when this species has been listed as an unknown Labroid. Solander's description applies perfectly to *Pentapus setosus*, however, and the fish is probably the first described from Queensland.

Family SCATOPHAGIDÆ.

SCATOPHAGUS *sp. juv.*

(Plate xviii, fig. 2.)

D.x/18, preceded by 2 recumbent spines; A.iii/15. P.15? V.i/5; C.16.

Height of body (7 mm.) 1.7 in length from snout to end of middle caudal rays (12).

Forehead covered by a very strong bony protuberance, 3 mm. wide, with a slight median crest. Similar bony protuberances over and in front of eyes, and two over the operculum, of which the posterior forms a thick spine. A median callosity on the top of the head ends in a backwardly projecting spine just before the recumbent spines preceding the first dorsal. Other bony excrescences occur above and below the mouth, along the preopercular limbs, and over the shoulder. All are smooth and roundly elevated; the skin between them resembles that of the body.

Body strongly compressed, without scales, but covered with close-set minute papillæ except along the continuous lateral line. Margins of fins rounded; caudal emarginate.

Colour uniformly dark brown after preservation in alcohol; the soft dorsal, anal, caudal, and pectorals hyaline.

Described and figured from a single larva, 12 mm. long, in the Australian Museum; regd. No. 1A.1811. It was collected at Port Denison, Queensland, by Mr. E. H. Rainford.

I refrain from suggesting the specific identity of this specimen as it does not agree exactly with the figures and descriptions of young *Scatophagus* available to me.⁷ Our knowledge of the Australian species is not sound at present, and further material is required before the various nominal species can be satisfactorily determined; those recorded from Queensland have been listed by McCulloch and Whitley.⁸

⁷ Vide Lütken.—*Spolia Atlantica* (Vidensk. Selsk. Skr., 5 Række, naturv. og math. xii, 6), 1830, pl. v, fig. 7.

Weber.—*Siboga Exp.*, Monogr. lvii, 1913, pl. x, figs. 1-5.

Johnstone.—*Rept. Pearl Oyster Fisher. G. of Manaar*, pt. ii, 1904, Suppl. Rept. xv, p. 220, pl. 1, fig. 1.

Hora.—*Mem. Asiat. Soc. Bengal*, vi, 1924.

Seale and Bean.—*Proc. U.S. Nat. Mus.*, xxxiii, 1907, p. 246, fig. 8.

⁸ McCulloch and Whitley.—*Mem. Qld. Mus.* viii, 2, 1925, p. 159.

Family POMACENTRIDÆ.AMPHIPRION PAPUENSIS *Macleay*.

(Plate xvii, fig. 2.)

Amphiprion papuensis Macleay, Proc. Linn. Soc. N.S. Wales, viii, 2, July, 1883, p. 271. D'Entrecasteaux Group, New Guinea. *Id.* McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 166.

A young specimen, 8.8 mm. in total length, has the following characters. Two nostrils on each side of snout. A row of about six pores along limb of preoperculum, which is denticulated at its angle. Operculum subvertical, with a superior flap, and two denticulations at its angle. The opercular serrations characteristic of the genus have not yet appeared. A notch between the transparent interoperculum and the suboperculum; under the former may be seen the branchiostegal rays. Eye very large, about 2.5 in head, its diameter subequal to interorbital. Minute teeth in jaws. Tongue well developed. Gill-rakers slender.

Body long, compressed, scaleless. Depth a little greater than length of head. Pectorals rounded, shorter than head. Fins well developed, though their spines and rays may not be counted with accuracy; there appear to be fifteen principal rays in the caudal. About 23 myomeres.

Colour, in spirit, brownish, with four creamy-yellow irregular transverse bands; the first embraces the head in advance of the eyes and has an indistinct margin; the second tapers from the nape to the bottom of the gill-covers; the third joins the anterior portions of the soft dorsal and anal, and the last includes the whole of the tail. The fins are also creamy-yellow, but, where they are adjacent to the brown parts of the body, a small amount of dark pigment invades them.

This specimen is probably the smallest *Amphiprion* known. It was collected by Mr. E. H. Rainford at Holbourne Island, off Port Denison, Queensland. Australian Museum, regd. No. 1A.621.

The specimen is evidently the young of *Amphiprion papuensis* Macleay, the type of which, in the Australian Museum, I have examined. This species is characterized by having a light coloured snout, breast, soft dorsal, pectorals and tail. The first dorsal, ventrals, anal and base of pectoral of the type are blackish. *Amphiprion papuensis* was first noticed from Australia by McCulloch and Whitley (*loc. cit.*) from specimens collected by Mr. Rainford in Whitsunday Passage, Queensland.

CHROMIS SCOTOCHILOPTERUS *Fowler*.

Chromis scotochilopterus Fowler, Proc. Acad. Nat. Sci. Philad., lxx, 1, 1918, p. 61, fig. 24. Philippine Islands.

Chromis xotochlopterus Regan, Zool. Record, lv (1918), 1920, p. 17.
Error.

A young specimen, 53 mm. long from snout to hypural joint, has the following characters: D.xii/12; A.ii/11; tubes in upper arch of lateral line 16-17. Upper profile of head less gibbous than that figured by Fowler; eye large (6 mm.), 2.1 in head (13), due perhaps to the juvenile condition of the specimen. The membranes of the first dorsal are less produced and the soft dorsal and anal fins more pointed than those of the typical *C. scotochlopterus*. The colouration, however, is similar, and, since the specimen otherwise agrees in all major respects with Fowler's description, I do not regard the Queensland form of this species worthy of nominal distinction.

Loc.—Outer Barrieff Reef, Queensland, between 17° and 19° S. lat.; coll. Dr. W. E. J. Paradise, R.A.N., 1924. Regd. No. 1A.2294.

New record for Australia.

TETRADRACHMUM NITIDUM, *sp. nov.*

(Plate xvii, fig. 3.)

D.xiii/12; A.ii/10; P.18; V.i/5; C.14. Lateral line with 17 tube-bearing scales and about 9 punctured scales along caudal peduncle.

Head (16 mm.) 3.7 in the length to the hypural joint (60). Depth (25) 2.4 in the same. Eye (6) 2.6, interorbital (5) 3.2, snout (3) 5.3, in the head.

Profiles unevenly curved, the upper steeper than the lower. Head scaly except for a small area around nostrils. Eye large, interorbital convex. Snout bluntly rounded. Nostrils small, circular, rimmed. All the opercles entire except the preopercle, whose denticulations may only be seen under a microscope. Jaws equal, premaxillaries large. An outer row of large pointed teeth in front of several series of smaller ones in each jaw. Vomer and palatines with strong teeth.

Body compressed, entirely covered with scales, which are largest on the sides, in about 25 transverse series between operculum and hypural joint; they extend on to all the fins except the ventrals. The lateral line extends to below the end of the spinous dorsal. Long axillary scales on each side of ventrals. Vent nearer anal than ventrals, with a small papilla.

Dorsal originating over ventrals and terminating well behind the vertical of the termination of the anal fin, the soft portion higher than the spinous and produced into a pointed lobe. Anal spines strong, soft portion of fin similar to that of dorsal. Pectorals, ventrals and lobes of the strongly forked caudal, pointed.

General colour, in spirit, brownish above, brown suffused with pink on the sides, and silvery beneath. A blackish stripe passes from the snout, through the eye, across the lateral line, to the ends of the anterior dorsal rays. The fins are yellowish, but the anterior rays of the anal are crossed by an irregular oblique blackish area and there is an oblique bar on the upper caudal lobe and another on the lower. The upper caudal bar extends along the caudal peduncle to the termination of the dorsal fin, the lower ceases at the first caudal spine. A black spot in the pectoral axil.

Described and figured from the holotype, 60 mm. long from the snout to the hypural joint, from Hayman Island, Queensland. Austr. Mus. regd. No. 1A.1993.

Localities.—Hayman Island, Holbourne Island and Port Denison, Queensland; collected by Mr. E. H. Rainford.

TETRADRACHMUM TRIMACULATUM (*Rüppell*).

Pomacentrus trimaculatus Rüppell, Atl. Reise Nordl. Afrika 1828-30, p. 39, pl. viii, fig. 3. Massowah, Red Sea.

Dascyllus trimaculatus Cuvier and Valenciennes, Hist. Nat. Poiss., v, 1830, p. 441.

Tetradrachmum trimaculatum Bleeker, Atl. Ichth., ix, 1877, pl. cccix, fig. 8.

Six specimens (1A.355-360) from Holbourne Island, Queensland; coll. E. H. Rainford. New record for Australia.

TETRADRACHMUM CARNEUM (*Fischer*).

Dascyllus carneus Fischer, Jahrb. Hamb. Wiss. Anstalt., ii, 1885, p. 71, pl. ii, fig. 5. Mozambique. *Id.* Barnard, Ann. S. Afr. Mus., xxi, 2, Oct., 1927, p. 732.

This species, described as late as 1885 from Mozambique, may have been based on specimens which had straggled down from the north. Three specimens collected by the late A. R. McCulloch in 1922 on Dauco Island reef, off Port Moresby, Papua, agree very well with Fischer's description and figure. It seems remarkable, however, that the species does not appear to have been identified from intermediate localities.

DAYA FORMOSANA (*Fowler and Bean*).

Pomacentrus formosanus Fowler and Bean, Proc. U.S. Nat. Mus., lxii, 1922, p. 46, fig. 4, Takao, Formosa.

This extra-Australian species, judging from the characters given in the original description and shown in the figure, belongs to the genus *Daya*.⁹

⁹ Bleeker.—Verh. Holl. Mij. Haarlem, 1877, p. 71; type, *Pomacentrus jerdoni* Day: *id.* McCulloch, Mem. Qld. Mus. vii, 3, 1921, p. 170.

POMACENTRUS MACLEAYI, *nom. nov.*

Pomacentrus obscurus Alleyne and Macleay, Proc. Linn. Soc. N.S. Wales, i, 4, 1877, p. 343, pl. xv, fig. 2. New Guinea or Torres Strait ("Chevert"). Not *P. obscurus* Thiolliere, 1856, from Woodlark Island.

As *Pomacentrus obscurus* Alleyne and Macleay is preoccupied by Thiolliere's name,¹⁰ I propose *Pomacentrus macleayi* as a substitute. The original description gives no definite locality, but the types in the Macleay Museum, University of Sydney, are labelled Torres Strait, which may be designated as the type locality.

POMACENTRUS INSOLITUS, *nom. nov.*

Pomacentrus analis Macleay, Proc. Linn. Soc. N. S. Wales, vii, 3, 1882, p. 364. New Guinea. Not *P. analis* Poey, 1868, from Cuba.

Pomacentrus insolitus is proposed as a substitute name for *P. analis* Macleay, *non* Poey.¹¹

Family CORIDÆ.

Genus LABROIDES Bleeker, 1851.

Labroides Bleeker, Nat. Tijds. Ned. Ind., ii, 1851, p. 249. Haplotype, *Labroides paradiseus* Bleeker. *Id.* Bleeker, Versl. Akad. Amsterd., xiii, early 1862, p. 104 (*vide* Weber and de Beaufort, Fish. Indo-Austr. Archip., i, 1911, p. 229; reviewed by Guérin-Méneville, Rev. Mag. Zool. (2), xiv, March, 1862, p. 124). *Id.* Bleeker, Proc. Zool. Soc. Lond., 1861, pt. iii (April 7, 1862), p. 415 [8 of reprint]. *Id.* Bleeker, Atl. Ichth., i, 1862, p. 154.

Fissilabrus Kner., Sitzb. Akad. Wiss. Wien, xl, 7 (March or later), 1860, pp. 52 and 54. Haplotype, *Labrus latovittatus* Rüppell = *Labroides dimidiatus* (C. and V.).

Fissilabrus Kner, 1860, is a genus which has been overlooked by most subsequent writers and is even missed from Jordan's "Genera of Fishes." Kner recognized its identity with the prior *Labroides* Bleeker, but did not withdraw it as he considered it preferable as a name. There is, according to Agassiz, a genus of Coleoptera, *Fissilabra* Latreille, 1825, but since its etymology is apparently different, it may not preoccupy Kner's *Fissilabrus*.

LABROIDES DIMIDIATUS (*Cuvier and Valenciennes*).

Labrus latovittatus Rüppell, Neue Wirbelth. Abyssin, Fische, 1835, p. 7, pl. ii, fig. 2. Tor, Red Sea. Not *Labrus latovittatus* Lacépède (Hist. Nat. Poiss., iii, 1802, pp. 455 and 526, pl. xxviii, fig. 2).

¹⁰ Thiolliere.—Ichthyologie, in Montrouzier, Essai Faun. Woodlark, 1857, p. 200, reprinted from Ann. Agric. Soc. Lyon, viii, 1856.

¹¹ Poey.—Repert. Fis.-nat. Cuba ii, 1868, p. 327 (*vide* Günther, Zool. Rec., 1868 (1869), p. 153), Cuba.

Cossyphus dimidiatus Cuvier and Valenciennes, Hist. Nat. Poiss., xiii, 1839, p. 136. New name for *Labrus latovittatus* Rüppell (*non* Lacépède). Tor, Red Sea.

Fissilabrus latovittatus Kner, Sitzb. Akad. Wiss. Wien, xl, 7, 1860, p. 52, pl. ii, figs. 16a-d (teeth and lips). Java; specimen sent by Bleeker.

Labroides latovittatus Bleeker, Atl. Ichth., i, 1862, p. 155, pl. xlv, fig. 1.

Labroides dimidiatus Günther, Fische der Südsee, vii (Journ. Mus. Godef., xv), 1881, p. 243. Not synonymy concerning *L. paradiseus* Bleeker, and not Hawaiian record. *Id.* Barnard, Ann. S. Afr. Mus., xxi, 2, 1927, p. 749.

? *Labroides bicincta* Saville-Kent, Gt. Barrier Reef, (pref. Feb. 24) 1893, p. 308, chromo-pl. xvi, fig. 4. Based on a sketch of a fish seen swimming, but not caught. Identity with *L. dimidiatus* suggested. Lady Elliot I., Queensland.

One specimen from Darnley Island, collected by Mrs. W. Miller, admits this species into the fish-fauna of Australia, unless *Labroides bicincta* Saville-Kent be regarded as a synonym. I am unable to identify *Labroides auropinna* Saville-Kent, described and figured in connection with *L. bicincta* in the same unsatisfactory manner.

HALICHORES MINIATUS (*Cuvier and Valenciennes*).

Julis miniatus Cuvier and Valenciennes, Hist. Nat. Poiss., xiii, 1839, p. 460. Java. *Ex* Kuhl and Van Hasselt, M.S.

Halichæres miniatus Bleeker, Atl. Ichth., i, 1862, p. 114, pl. xli, fig. 5.

PlatyGLOSSUS miniatus Günther, Cat. Fish. Brit. Mus., iv, 1862, p. 150.

Günther (*loc. cit.*) recorded this species from "Australia. From Mr. MacGillivray's Collection," but the species has not been since noticed from our coasts. It may now be definitely listed from Queensland, however, as the Australian Museum has three specimens from the following localities: Port Denison (A. Morton, 1885), Hayman Island, Whitsunday Passage (E. H. Rainford, 1924), and Hervey Bay district (H.M.A.S. "Moresby," 1926).

Family CALLIONYMIDÆ.

SYNCHIROPUS SPLENDIDUS (*Herre*).

(Plate xvii, figs. 1, 1a-b.)

Gallionymus splendidus Herre, Philip. Journ. Sci., xxxii, 3, March 1927, p. 416, pl. ii. Bungau, Sulu, Philippine Islands.

D.iv/9; A.8; P.29; V.i/5; C.10.

Head (16.5 mm.) 3.8 in total length (64); depth below first dorsal (13) equal to breadth at preopercular spines (13) which is 4.1 in the length. Maximum diameter of orbit (5) equal to interocular width (5) and snout (5), 3.3 in head. Depth of caudal peduncle (8) 2 in length of caudal (16).

Head naked, broader than high and longer than broad. A pronounced nuchal depression immediately behind the upraised and prominent skinny folds surrounding the eyes. Snout tapering, its extremity blunt. Throat rounded. Opercles hidden; the preopercular spines, largely covered by skin, have each four strong hooks above and a minute spine at the tip, but are without antrorse barbs. Nostrils minute. No orbital cirrus. Lips fleshy, the upper concealed by the overhanging preorbital. Mouth small, maxillary not extending to vertical of anterior margin of eye. Teeth minute, sharp, in bands in each jaw. Gill-opening a small aperture above the preopercular spine.

Body naked, elongate, about as broad as high anteriorly but tapering posteriorly until it becomes abruptly compressed at the caudal peduncle. Profile of back rounded, of ventral surface somewhat less so. Lateral line beginning a little before and above gill-opening and extending along the upper part of the side to the tail, following the curve of the back until it passes the second dorsal, when it curves irregularly; anteriorly it is connected with its fellow by a branch which crosses the nape just behind the nuchal depression. Genital papilla present.

First dorsal spine long and thick, the second originating close to its base. A space between the two dorsals. Soft dorsal high, the rays subequal, all branched. Anal similar to soft dorsal but with one ray less, its origin and termination behind those of the second dorsal. Pectoral very broad, rounded, much shorter than head. Ventrals broad; spines short and soft; the penultimate ray longest, extending slightly past the origin of the anal. Caudal rounded.

Colour-drawings made by the late Allan R. McCulloch and Miss Joyce K. Allan show that the ground colour is yellowish olive, becoming brownish over the anal fin, yellow on the throat and very dark bluish brown between the pectorals and ventrals. The ground colour of the anal and caudal is greyish-brown; that of the first dorsal is orange, whilst the second dorsal and the ventrals are orange proximally, shading to greyish-brown in their distal halves with a broad border of vivid blue scribbled over with irregular yellow markings. Pectorals bluish. The head, body and fins are crossed by irregular peacock-blue bands, which sometimes break up into spots, with blackish edges. Two pass through the red eye. Another passes from behind the eye on to the cheek,

where it joins a subhorizontal one crossing the snout. The most prominent markings on the body are a Y-shaped band below the first dorsal and another shaped somewhat like a mark of interrogation lying along the side and joined to a subvertical band crossing the caudal peduncle. There is a smaller U-shaped band below the soft dorsal which has one of its limbs produced on to that fin. The rest of the body bears irregular smaller bands or blotches of blue with dark edges which are almost symmetrically disposed; a band on one side being sometimes represented by two or more spots on the other. The blue markings extend on to all the fins except the pectorals. On the caudal, they take the form of attenuated bars, which tend to break up into rows of spots, between the rays which are greyish; the blue spots are found mostly on the rays of the anal and are interspersed in places by yellowish ones; the anal membrane is dusky brown. Beneath the preopercular spine there is a dark bluish area upon which are several irregular yellow streaks; one, in particular, follows a wavy course from the spine to the yellow ground-colour of the throat, which latter is crossed by several thin blue bands. Between the ventrals the chest bears two brownish areas separated by a blue interspace which divides into an A-shaped form posteriorly, enclosing an unpaired brownish area just before the vent. The latter is in a blue band which connects with the lateral query-shaped mark.

In life, the ground-colour was probably more brilliantly yellow, but the description and figure here given, made from a specimen which had been fixed in weak alcohol, are as exact as circumstances permit.

Described and figured from a specimen 64 mm. long, from Hayman Island reef, Whitsunday Group, Great Barrier Reef, Queensland; collected by Mr. E. H. Rainford in 1924. Austr. Museum regd. No. 1A.2049; collector's No. 84.

Family GOBIIDÆ.

BEROWRA, gen. nov.

Size of adults very small. Scales large, in less than thirty transverse rows, and not extending on to nape, breast or pectoral base. Tongue not deeply notched. Upper pectoral rays neither free nor differentiated from the others.

BEROWRA LIDWILLI (McCulloch).

(*Gobius*) *lidwilli* McCulloch Rec. Austr. Mus., xi, 7, Feb. 20, 1917, p. 185, pl. xxxi, fig. 2, Cowan Creek, Hawkesbury River, N. S. Wales. *Idem.* McCulloch, Scient. Australian, March, 1917, p. 57. *Idem.* McCulloch and Ogilby, Rec. Austr. Mus., xii, 10, July 14, 1919, pp. 204 and 242. *Idem.* McCulloch, Austr. Zool., ii, 3, Feb. 10, 1922, p. 110, pl. xxxv, fig. 309b.

This interesting species, one of the smallest of vertebrate animals, is worthy of inclusion in a new genus, so I nominate it the orthotype of *Berowra*. It has been fully described and figured in the papers quoted above.

GUNNAMATTA, *gen. nov.*

Body robust anteriorly, compressed posteriorly. Head broad, depressed. Top of head and entire body excepting pectoral base covered with cycloid scales which are smallest anteriorly. Cheeks, opercles, and snout naked. Interorbital very narrow. No barbels or cirrhi. Bands of long, close-set, fixed canines in each jaw. Margin of tongue truncate. Gill-rakers short, six on the lower limb of the first gill-arch. Fins pointed. Upper pectoral rays not free. Caudal lanceolate. Six slender dorsal spines. Ventrals long, their inner rays partly united by membrane, not adnate to belly.

Orthotype.—*Gunnamatta insolita*, sp. nov.

GUNNAMATTA INSOLITA, *sp. nov.*

(Plate xvi, fig. 3.)

Br.6. D.vi/12; A.ii/8; V.i/5; P.16; C.12. Sc.40. About 15 series of scales between soft dorsal and anal fins.

Depth at first dorsal (9 mm.) 5.1 in length from upper jaw to base of caudal (46) or 6.6 in total length (60). Breadth of head (10) 1.4 in its length (14). Eye (3) less than snout (3.5). Interorbital (0.6) very narrow. Width of body (6) 1.3 in its depth.

Head broader than deep. Eyes close-set near top of head. Maxillary not reaching vertical of eye. Lower jaw slightly longer than upper. A few short mucigerous ridges on the cheeks, some pores over the opercles, and two convergent canals on each side of the occiput behind the eye. No scales on cheeks or snout; two rudimentary cycloid scales over operculum, rest of opercles scaleless. Scales on top of head behind eyes, small, crowded, cycloid, and irregularly disposed. Jaws with broad bands of long curved canines which are not depressible.

Body covered with cycloid scales which are largest on sides of caudal peduncle, and smallest as they approach the nape. Some body-scales have pyriform outlines. Muscular base of pectoral smooth.

First dorsal originating behind pectoral base, with six slender, flexible spines, of which the last is remote from the others and reaches the origin of the second dorsal when depressed. Second dorsal not so high as body, originating in advance of vertical of anal origin, its posterior rays longest. Anal similar to second

dorsal but much shorter. Caudal elongate, lanceolate. Pectorals pointed, almost reaching vertical of anal origin. Ventrals not adnate to belly, nor reaching vent, their fourth and fifth rays longest, subequal. A genital papilla.

After preservation in alcohol the ground colour is yellowish, largely covered, except on the breast, by an irregular mottling of dark brown due largely to the fuscous borders of the scales. Dark brown blotches contrast with the yellowish ground colour on the head and pectoral base as shown in the figure. Fins dark brown, excepting the ventrals and anterior anal membranes which are yellowish.

Described and figured from the unique holotype, 60 mm. in total length. Australian Museum regd. No. 1A.2517. This specimen was obtained by a Museum collecting party at Gunnamatta Bay, Port Hacking, New South Wales, where it was swimming beneath some boat-skids on 30th October, 1925.

I am unable to suggest the affinities of *Gunnamatta*, since it differs from all the gobies known to me, though it bears a superficial resemblance to *Oxyurichthys* and *Doryptena*, with which it may tentatively be grouped. Nothing resembling it appears in McCulloch and Ogilby's splendid monograph on "Some Australian Fishes of the Family Gobiidæ"¹² and Jordan and Seale's review of the Gobies of Oceania,¹³ with its large key to the genera, is also unproductive of any form approaching the new genus and species.

Family CARAPIDÆ.

PIRELINUS, *gen. nov.*

Helminthodes Gill, Proc. Acad. Nat. Sci. Philad., xvi, 4, October 25-December 12 (probably early December), 1864, p. 203, footnote. Not *Helminthodes* Marsh, November, 1864, a genus of fossil worms. Orthotype, *Oxybeles lumbricoides* Bleeker.

The generic name *Helminthodes* was introduced almost simultaneously in America for a fossil annelid by Marsh and for a fish by Gill. Marsh's paper was entitled "Notice of a new fossil Annelid (*Helminthodes antiquus*), from the Lithographic Slates of Solenhofen," and was dated "Berlin University, July 12, 1864." It appeared in Amer. Journ. Sci. Arts (New Haven, Ct.) (2), xxxviii, No. cxiv, p. 415, as article xlii (copy in Mitchell Library, Sydney). On page 445, the date October 15, 1864, is noted, so the Journal, which has November, 1864, on its title page, was probably published about half-way through November, 1864.

¹² McCulloch and Ogilby.—Rec. Austr. Mus. xii, 10, July 14, 1919, pp. 193-291, pls. xxxi-xxxvii, text-figs. 4-5.

¹³ Jordan and Seale.—Bull. U.S. Bur. Fish, xxv, 1905 (Dec. 15, 1906), pp. 381-411, pls. xxxvi-xxxvii, lii, fig. 2, and liii, fig. 1, and text-figs. 73-96.

Gill's paper, quoted above, seems to have appeared a little later. On page 214 of the Proc. Acad. Nat. Sci. Philad., xvi, pt. 4, a notice is given of the October 25 meeting, so the part must have been published after that day. Its receipt was acknowledged by the Boston Society of Natural History on 12th December, 1864 (*vide* Fox in Nolan, Index Journ. Proc. Nat. Sci. Philad. (1812-1912), 1913, p. xiii). It thus appears that Gill's paper was not published until late November or, probably, early December, 1864.

Thus *Helminthodes* Gill (*non* Marsh) requires a new name, and *Pirellinus* is proposed as a substitute, with *Oxybeles lumbricoides* Bleeker as orthotype.

Family BLENNIIDÆ.

SALARIAS MACNEILLI, *sp. nov.*

(Plate xviii, fig. 1.)

D.xii/19; A.ii/21. P.15. V.2 + 2. C.10.

Depth at vent (8.5 mm.) 6.5 in length to hypural joint (56); head (12) 4.6 in same. Eye (2.5) 4.8 in head.

Head longer than high and higher than broad. Profile very steep, projecting slightly before the eyes. Interocular area narrow, concave. Two large occipital crests, the anterior rounded, the posterior tongue-like, a condition probably due to injury of a single crest during the life of the fish. Ocular tentacles arising from the upper margin of each eye in advance of the occipital crest, branched. A small simple tentacle arises from each anterior nostril. Nuchal groove present, but no tentacles on nape. Mouth reaching to behind eye. Anterior surface of snout wrinkled. Edge of upper lip entire, overlapping the lower lip. A continuous series of close-set incisors in each jaw. Apparently no canines. Preopercular and opercular margins hidden under skin. Opercular flap present. A row of pores along the preopercular outline, another around the eye, and scattered pores on snout.

Body elongate, compressed; belly rounded. Lateral line a series of spaced pores, curving over the pectoral fins and extending along the sides to the caudal peduncle. About thirty myocommas are visible on the otherwise smooth surface of the body. A small genital papilla.

Dorsal fin originating over operculum, markedly notched before the first ray, and terminating behind the vertical of the insertion of the last anal ray. Its last ray is joined to the body by membrane. Anal originating below posterior spines of first dorsal, with two short soft spines. The membrane is notched between the rays, but extends to form a pinnate margin on their projecting anterior

edges. Last anal ray not joined to body by membrane. Pectoral angular, lower rays thickest; the fifth lowest ray is longest but does not reach the vent. Ventrals inserted well before the first dorsal spine; each consists of two finger-like rays followed by a membrane enclosing two vestigial rays; the second thick ray is the longer and reaches about one-third of the distance from its insertion to vent. Caudal rounded; inner rays branched.

General colour, after long preservation, brownish, the body with about five pairs of smoky broad cross-bands which are not well defined and become darker on the back. There are traces of dark-edged bluish-white ocelli on the sides towards the tail. The head is uniform brownish with blue spots on the cheeks. Dorsal olive-brownish, with a dark blotch between the first two spines, and oblique brown bars between the rays. Anal mottled smoky-brown becoming darker distally. Caudal unevenly brown, with a divided brown spot at the origin of the median rays. Pectorals light brown, with series of dark spots on the rays; the spots become blue, like those of the head, on the pectoral base. Ventrals dark brown.

Described and figured from the holotype, a specimen 65 mm. long; Australian Museum regd. No. I.14286. It was collected by Dr. A. D. C. Cummins and Staff-Paymaster P. B. Stevens, R.N., of H.M.S. "Pegasus," with five smaller ones, in the New Hebrides over ten years ago.

Named after my colleague, Mr. F. A. McNeill, whose work as joint author with the late Allan R. McCulloch on the genus *Salarias*¹⁴ is indispensable to Australian students. There is already a species named *Salarias mccullochi*.¹⁵

The new species is quite distinct from all species of *Salarias* known to me, but may be remotely allied to *S. biseriatus* Cuv. and Val.

Variation.—Five paratypes from the New Hebrides each have a *single* low occipital crest, a black blotch between the first two dorsal spines, and shorter fin-rays due to their smaller size. The body-colours are contrasted more in them than in the type and there is a row of blackish blotches along the base of the dorsal fin. The anal fin is light proximally and dark distally. The caudal spot is well marked and an ill-defined smoky crescent crosses the caudal rays. Suffused dots, not definite spots, on pectoral rays. Light ocelli on body, but fewer blue spots on cheeks than in type. A specimen dissected is female. D.xii/18-20; A.ii/19-21.

Type Locality and known range.—New Hebrides.

¹⁴ McCulloch and McNeill.—Rec. Austr. Mus. xii, 1918, pp. 9-21, pls. iii-iv.

¹⁵ Fowler and Dean.—Proc. U.S. Nat. Mus. lxxiii, 1923, p. 25.

SALARIAS MACNEILLI COLORATUS, *subsp. nov.*

Salarias, new species, Whitley, Journ. Pan-Pacif. Res. Inst. iii, 1, 1927, p. 13.

Two specimens (1A.2493, type; 2494, paratype); from Carlisle Bay, Santa Cruz Island, Melanesia, collected by Messrs. E. Le G. Troughton and A. A. Livingstone, on 20th July, 1926, are sub-specifically distinct from typical *S. macneilli*. Their fin-rays are longer than those of New Hebrides specimens of the same size. D.xii-xiii/17; A.ii/20. The oblique marks on the second dorsal are few and diffuse. The whitish ocelli of the body are not dark-edged and extend on to head and pectorals. The slightly more elongate body is tan in colour, and the anal fin is much lighter than that of *S. macneilli*. Dissection shows a specimen to be a female with roe.

Range.—Santa Cruz Archipelago, Melanesia.

PETROSCIRTES GRAMMISTES (*Cuv. and Val.*).

Blennechis grammistes Cuvier and Valenciennes, Hist. Nat. Poiss., xi, 1836, p. 285. Java.

Petroscirtes anema Bleeker, Nat. Tijd. Ned. Ind., iii, 1852, p. 273. Amboina.

Petroscirtes grammistes Günther, Fische Südsee vi, 1877, p. 197, pl. cxv, fig. F (*P. anema* on plate).

Petroscirtes lineatus De Vis, Proc. Linn. Soc. N.S. Wales, ix, 1884, p. 698. Murray Island, Torres Strait.

Synonymy.—The type of *Petroscirtes lineatus* De Vis is a faded formalin specimen in the Queensland Museum, but it shows the bars characteristic of *P. anema* Bleeker = *Blennechis grammistes* Cuv. and Val. The Australian Museum has three good specimens from North-West Islet, one from Whitsunday Passage, and one from Masthead Islet, Queensland, so I have no hesitation in relegating *Petroscirtes lineatus* De Vis to the synonymy of *P. grammistes* (Cuv. and Val.).

PETROSCIRTES OBLIQUUS *Garman*.

Petroscirtes obliquus Garman, Bull. Mus. Comp. Zool., xxxix, 8, 1903, p. 237, pl. iv, fig. 3. Suva, Fiji.

This species is represented in the Australian Museum by eleven specimens from Murray Island, Torres Strait (Hedley and McCulloch, 1907) and two from the Sir Edward Pellew Group, Gulf of Carpentaria (Paradice, 1923).

New record for Australia.

Family AMPHACANTHIDÆ (*Siganidæ*, auct.).

Genus AMPHACANTHUS Bloch and Schneider, 1801.

"*Siganus*" Forskal, Descr. Anim., 1775, p. x. Haplotype, *Scarus rivulatus* Forskal (*loc. cit.*, *nom. nud.*) = "*Scarus siganus*; *rivulatus*" on p. 25. A synonym of *Scarus* Forskal (part). This work is here considered non-binomial. Also spelt *Sigunus* Swainson, 1839.

"*Centrogaster*" Houttuyn, Actæ Harlem., xx, 2, 1782, p. 333. Type, *C. fuscescens* Houttuyn (*vide* Jordan, Gen. Fish., i, 1917, p. 44). Non-binomial (*teste* Mr. T. Iredale).

Amphacanthus Bloch and Schneider, Syst. Ichth., 1801, p. 206. Logotype, *Chaetodon guttatus* Bloch. Also spelt *Amphicanthus* Swainson, 1839.

Buro Lacépède, Hist. Nat. Poiss., v, 1803, p. 421. Haplotype, *B. brunneus* Lacépède.

Buronus Rafinesque, Anal. Nat., 1815, p. 88. *Nom. nov. pro Buro* Lacépède (*vide* Jordan).

Amphiscarus Swainson, Nat. Hist. Class. Fish. Amphib. Rept., ii, 1839, pp. 172 and 227. Haplotype, *Siganus fuscus* Cuvier (*ed.* Griffith, 1834).

Teuthis Cantor (and some subsequent authors, including Günther), Journ. Asiatic. Soc. Bengal, xviii, 1850, p. 1189 (type, *Teuthis javus* Linn.). Not *Teuthis* Linnæus, *sensu stricto* (tautotype, *T. hepatus*); and not *Teuthis* Schneider, 1784, a genus of Cephalopoda.

Siganus Gill., Proc. U.S. Nat. Mus., vii, 1885, p. 280. *Ex* Forskal.

Forskal's "Descriptiones Animalium," published posthumously in 1775, is not, in my opinion, a valid systematic work. Some of the names of fishes are given in Latin in binomial or polynomial form, many are indiscriminately given vernacular names in Arabic, Greek, Hebrew, etc., and combinations of these and Latin occur. Forskal's work evidently represents an unfinished series of notes, and while due credit must be given him for his observations and discoveries, I think the progress of taxonomic work would be better helped by rejecting his names. By adopting this course, such atrocious "generic" names as *Abu-defduf* (p. 29) will be avoided.

Accordingly, I revive the straightforward generic name *Amphacanthus* Bloch and Schneider, for the genus sometimes referred to by Forskal's name, *Siganus*, and often confused with *Teuthis* Linnæus. *Teuthis* Linnæus¹⁶ is based on two species, which are not congeneric. The first, *Teuthis hepatus*, is based on "*Browne jam.* 455, *Gron. zooph.* 353," etc. I am unable to consult

¹⁶ Linnæus.—Syst. Nat. ed. 12, i, 1766, p. 507.

Browne's "The civil and natural history of Jamaica," the first reference quoted, but, since Linnæus appears to have derived his specific name *hepatus* from the "Hepatus mucrone reflexo" of Gronovius' Zoophylacium, I regard *Teuthis hepatus* as the virtual tautotype of *Teuthis* Linnæus. The second species, *Teuthis javus*, is an *Amphacanthus*.

AMPHACANTHUS CAPRICORNENSIS (Whitley).

Siganus capricornensis Whitley, Austr. Zool., iv, 4, 1926, p. 231, pl. xxxiii (not xxxiv, as stated in text). North-west Islet, Queensland. Holotype in Australian Museum.

Two specimens, 190-260 mm. long, are preserved in the "old collection" of the Queensland Museum. The larger is from Cape York and the smaller from Moreton Bay, Queensland. Mr. E. H. Rainford has collected this species from Hook Island, Whitsunday Passage, and noted the colours as follows:—"Dark brown with purplish reflections, covered with orange spots. Dorsal, anal, and caudal darker, with faint orange spots. Pectorals yellowish." Young specimens have a dark blotch on the shoulder, which is indistinguishable in the adult type.

AMPHACANTHUS LINEATUS Cuvier and Valenciennes.

Amphacanthus lineatus Cuvier and Valenciennes, Hist. Nat. Poiss., x, 1835, p. 310, pl. cclxxxvi. Vanicolo and New Guinea.

Teuthis lineata Günther, Cat. Fish. Brit. Mus., iii, 1861, p. 322.

Teuthis flava De Vis, Proc. Linn. Soc. N.S. Wales, ix, 1884, p. 462. No locality = Queensland. Holotype in Queensland Museum examined. *Id.* Kent, Great Barrier Reef, 1893, pp. 286 and 369.

Siganus lineatus Jordan and Seale, Bull. U.S. Bur. Fish., xxvi, 1907, p. 35. *Id.* Evermann and Seale, *ibid.* p. 98. *Id.* Ogilby, Mem. Qld. Mus., i, 1912, p. 57. *Id.* Whitley, Journ. Pan-Pacif. Res. Inst. iii, 1, 1927, p. 12.

Siganus aurolineatus Ogilby, Mem. Qld. Mus., i, 1912, p. 56. Somerset, N. Qld. Holotype in Queensland Museum examined. *Id.* McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 161.

Siganus flavus McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 161.

Synonymy.—The holotype of *Teuthis flava* De Vis, preserved in the Queensland Museum, Brisbane, registered No. I.11/112, is an old formalin specimen, 187 mm. long from the snout to the end of the middle caudal rays. It agrees in all details of external structure

with specimens of *Amphacanthus lineatus* Cuv. and Val. in the same institution, but the characteristic colour-markings have entirely disappeared after long preservation and most of the scales are missing. It is labelled "Coast of Queensland; coll. Mr. K. Broadbent." Two other specimens, 109-123 mm. long, evidently paratypes, are also preserved; the smaller of these has a markedly concave profile above the eyes, a character which disappears with age.

I have also examined the holotype of *Siganus aurolineatus* Ogilby (Queensland Museum registered No. I.449) from Somerset, North Queensland. The specimen is now almost uniformly dark brown, the fins lighter. Traces of reticulating darker lines are to be observed near the dorsal profile and a few spots remain on the caudal fin. The head (39 mm.) is 4.5 in the length to the end of the middle caudal rays (178) or 4.6 in the total length (184), not 3.7 as stated by Ogilby. The specimen agrees well with Cuvier and Valenciennes' figure although it lacks the saddle-shaped marking below the soft dorsal, and the dark lines near the dorsal profile are more densely reticulated, but a large specimen (Qld. Mus. No. I.1818) is intermediate between Ogilby's type and the original figure in these respects.

In addition to the excellent series in the Queensland Museum, I have examined eight specimens, 89-238 mm. long, in the Australian Museum, Sydney.

Localities.—Moreton Bay, Queensland (Qld. Mus. No. I.3169). "Coast of Queensland"; coll. Kendall Broadbent (Type of *Teuthis flava*). Walker's Bay, near Cooktown, N. Queensland; coll. A. R. McCulloch. Somerset, N. Queensland (Type of *Siganus aurolineatus*). Murray Island, Torres Strait; coll. C. Hedley and A. R. McCulloch, 1907. Thursday Island; coll. Donald McDonald (Qld. Mus.). Sir Edward Pellew Group, Gulf of Carpentaria; coll. Surgeon-Lieut. W. E. J. Paradise, H.M.A.S. "Geranium." Cape Wessel, Arnheim Land, Northern Territory; coll. Dr. Paradise. Vanikoro, Santa Cruz Group; coll. E. Le G. Troughton and A. A. Livingstone, 1926. Vanicolo and New Guinea (Cuvier and Valenciennes). Philippine Islands (Jordan and Seale and Evermann and Seale).

AMPHACANTHUS NEBULOSUS *Quoy and Gaimard.*

Amphacanthus nebulosus Quoy and Gaimard, Voy. Uranie, 1825, p. 369. Sydney Cove, Port Jackson.

Teuthis albopunctatus Alleyne and Macleay, Proc. Linn. Soc. N.S. Wales, i, 1877, p. 338. *Id.* Macleay, *ibid.* v, 1881, p. 443. *Id.* Saville-Kent, Great Barrier Reef, 1893, p. 286. Not *Amphacanthus albopunctatus* Schlegel, 1845.

- Teuthis mixtus* Saville-Kent, Prelim. Rept. Food-Fishes Qld. (Parl. Rept.), 1889, p. 10 and Great Barrier Reef, 1893, p. 369. *Nomen nudum* based on De Vis' Museum name. Chirotype in the Queensland Museum examined.
- Teuthis nebulosa* Günther, Fish. Zanzibar, 1866, p. 51, pl. x, fig. 3. *Id.* Saville-Kent, Prelim. Rept. Food-Fish Qld. (Parl. Rept.), 1889, p. 10, pl. viii, fig. 25.
- Siganus nebulosus* Stead, Ed. Fish. N.S. Wales, 1908, p. 81, pl. xlix. *Id.* McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 161. *Id.* Barnard, Ann. S. Afr. Mus., xxi, 2, 1927, p. 785.
- Siganus consobrinus* Ogilby, Mem. Qld. Mus., i, 1912, p. 54, pl. xiii. Miora Banks, Moreton Bay. Cotypes in the Queensland Museum and one in the Australian Museum examined. *Id.* McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 161.
- Siganus mixtus* McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 161.

Synonymy.—I have examined a specimen of *Amphacanthus* in the Queensland Museum from Cardwell, North Queensland, regd. No. I.902, labelled "*Teuthis mixtus* De Vis, (n. nud.)." Saville-Kent published this name without any description in 1889, and it has remained a *nomen nudum* since, having therefore no status. Since, however, De Vis' chirotype is preserved, and proves referable to *Siganus nebulosus*, I regard the synonymy as worthy of note.

An examination of the types of *Siganus consobrinus* Ogilby (Qld. Mus. No. I.291) shows that they are specifically identical with specimens of *Amphacanthus nebulosus* Quoy and Gaimard from Port Jackson, New South Wales (type locality).

Localities.—Specimens labelled *S. consobrinus* are in the Queensland Museum from Miora Banks, Moreton Bay (types), various localities around Moreton Bay, Darnley Island and Somerset, North Queensland. The Australian Museum has specimens of *Amphacanthus nebulosus* from Port Jackson; Cape Bedford, North Queensland, and the Sir Edward Pellew Group, Gulf of Carpentaria.

Schmeltz's record of this species from Bowen¹⁷ has been generally overlooked.

Family TEUTHIDÆ.

TEUTHIS TROUGHTONI, *sp. nov.*

(Plate xvi, fig. 1.)

Teuthis, new species, Whitley, Journ. Pan-Pacif. Res. Inst. iii, 1, 1927, p. 12.

D.ix/23; A.iii/20; P.15; V.i/5; C.16.

¹⁷ Cat. Mus. Godef. vii, 1879, p. 49.

Depth (64 mm.) 2.3 in length to end of middle caudal rays (152). Head (40) 3.8 in same. Eye (10) 4 in head, slightly narrower than interorbital (11). Least depth of caudal peduncle (13) 11.7 in length. 6th dorsal spine (17) slightly shorter than 3rd anal spine (18). Pectoral (33) 1.2 in head.

General form elongate ovate, strongly compressed. Head scaly except around the lips. Snout twice as long as diameter of eye. Profile steeply and unevenly arched, becoming concave before the snout. Two nostrils above a short groove before the eye. Opercles entire, with a few striæ. A single row of incisors in each jaw. Each tooth is somewhat hand-shaped, with five main cusps resembling fingers; small lateral cusps are present on some teeth.

Body covered with very small ctenoid scales which extend on to the caudal fin and slightly overlie the bases of the dorsal and anal rays. The lateral line consists of a zone of punctured scales running roughly parallel with the dorsal curvature; it dips suddenly below the last dorsal rays and, after passing over the caudal spine, extends along the middle of the caudal fin. Caudal spine small, but strong. Vent situated between the posterior membranes of the ventral fins.

Dorsal continuous; the first spine is small, the others increase in size backward. Anal similar to dorsal. Pectorals and ventrals somewhat pointed; the tip of the first ventral ray reaches the base of the second anal spine. Caudal emarginate.

Colour, in spirits, greyish above and on the sides, chalky white below, the junction of the colours defined along almost all its length by an irregular dark smoky bar. Dorsal and caudal greyish with a trace of yellow. Anal greyish, except for the bases and tips of the spines and rays which are white. Ventrals white, with a blackish blotch on the rays. Pectorals yellowish. Head crossed by a stripe which passes through the eye; body crossed by four stripes arranged as shown in the figure. Another stripe extends along the front of the snout but does not reach as far as the junction of the two ocular stripes. Dark blotches occur below the pectorals and on the sides of the caudal peduncle; on one side of the type the caudal blotches have coalesced to form a short stripe on the peduncle superiorly. A dark mark on both lips, and an oblique fuscous stripe behind the ascending limb of the preoperculum.

Described and figured from the holotype, a female with minute ova. Australian Museum Registered Number 1A.2860. It was collected at Naunaha Island, Vanikoro Lagoon, Santa Cruz Group, on August 4, 1926, by Messrs. E. Le G. Troughton and A. A. Livingstone, together with a paratype. Another specimen was caught at Peu, Vanikoro by the same collectors.

Variation.—This species varies somewhat in the intensity of its colour markings, some specimens being darker than others. The

disposition of the stripes is constant, but they are thicker on the sides in some specimens. The lower spot on the caudal peduncle is absent in one specimen.

Affinities.—Near *Teuthis triostegus* (Linnæus),¹⁸ but that species has no subhorizontal dark stripe separating the darker ground colour from the cream ventral area. Bennett's figure of *Acanthurus hirudo*¹⁹ shows faint indications of the dividing stripes, but differs in the disposition of the body stripes. *Teuthis sandvicensis* Streets²⁰ has no stripe along the forehead, has only one caudal spot, and a prolonged pectoral stripe.

Localities.—Peu and Naunaha Island, Vanikoro, Santa Cruz Group, 4th August, 1926; coll. Troughton and Livingstone.

St. Crispin Reef, Outer Barrier Reef, off Port Douglas, North Queensland; coll. McCulloch.

New Guinea: Purchased from Sir Wm. Macleay.

Family LOPHIIDÆ.

Genus LOPHIOMUS Gill, 1883.

Lophiomus Gill, Proc. U.S. Nat. Mus., v, 1883, p. 552. Orthotype, *Lophius setigerus* Vahl. *Id.* Regan, Ann. Mag. Nat. Hist. (7), ii, 1903, pp. 279 and 282; and *ibid.* (8), ix, 1912, p. 281. *Id.* Barnard, Ann. S. Afr. Mus., xxi, 2, 1927, p. 998.

"Lophiids with vertebræ in diminished number, i.e., about 19, and toothed vomer" (Gill).

LOPHIOMUS LATICEPS (*Ogilby*).

Chirolophius laticeps Ogilby, New Fish. Qld. Coast, 20th Dec., 1910, p. 136. "Described on board the Endeavour from a unique specimen, measuring 196 millim., taken 6 miles S. 12° W. from Cape Moreton in 73 fathoms on fine sand and mud, and subsequently forwarded to the Australian Museum, Sydney." Holotype, No. E.2973, on deposit in Austr. Mus., examined.

Chirolophius? laticeps McCulloch, Biol. Res. Endeavour, ii, 3, 1914, pp. 79 and 160, pl. xxxii and text-fig. 15.

Chirolophius laticeps McCulloch and Whitley, Mem. Qld. Mus., viii, 2, 1925, p. 176.

Lophiomus laticeps Whitley, in McCulloch's Fish. N.S. Wales, ed. 2, July 14, 1927, third page of additions.

One specimen of this rare species was trawled off some rocks known as the "Toll Gates" on the New South Wales coast a few

¹⁸ Linnæus.—Syst. Nat. ed. 10, 1758, p. 274 (*Chætodon*). "Habitat in Indiis."

¹⁹ Bennett.—Fish. Ceylon, 1830, p. 11, pl. xi. Ceylon.

²⁰ Streets.—Bull. U.S. Nat. Mus., No. 7, 1877, p. 67 (*Acanthurus triostegus* var.). Hawaiian Islands.

miles north of Montague Island, in about 40 fathoms, March, 1927, and presented to the Australian Museum by Mr. A. Ward. This species has not previously been recorded from New South Wales as it has hitherto been known only from the holotype. In his re-description of that specimen, McCulloch (*loc. cit.*, *supra*, p. 163) stated, "It may be either a *Lophius* Linnæus or *Lophiomus* Gill, but its position must remain unsettled until another specimen can be secured of which the vertebræ can be counted."

Dissection of the New South Wales specimen shows that it has eighteen vertebræ, so that the species must be removed from *Chirolophius* and placed in *Lophiomus*. *Lophiomus laticeps* (Ogilby) is a valid species, closely allied to *L. miacanthus* Gilbert²¹ from Hawaii. The two may be distinguished as follows:—

The maxillary does not reach backward to the vertical of the eyes, whose length is less than the interorbital width *laticeps*
 Maxillary reaching vertical of front of pupil; length of orbit equal to interorbital width *miacanthus*

LOPHIOMUS SETIGERUS (Vahl).

Lophius setigerus Vahl, Skrivt. Naturh.-Selsk., iv, 1, 1797, p. 215, pl. iii, figs. 5-6. "Habitat in mari Chinensi."

Lophius viviparus Bloch and Schneider, Syst. Ichth., 1801, p. 142, pl. xxxii. "Habitat mare Sinense."

Mr. Tom Iredale has kindly lent me his copy of the fourth volume of the rare "Skrivter af Naturhistorie-Selskabet" (Copenhagen, 1797), in the first "Hefte" of which the descriptions of two angler-fishes (*Lophius stellatus* and *L. setigerus*) are given by Professor M. Vahl. The names of animals in this book are often arranged with the specific name preceding the generic, but they are all binomial in the Linnean sense. In view of the rarity of Vahl's paper, I take this opportunity of presenting the original description of *Lophius setigerus*, the type of *Lophiomus*, in full.

"SETIGERUS LOPHIUS depressus, capite oblongo spinis pluribus supra setis duorum parium, maxilla inferiore longiore. Tab. 3 f.5 and 6. Habitat in mari Chinensi.

CORPUS subtripollicare, cute laxa, tenui, squamis nudum. Cauda pollicaris, teretiuscula.

CAPUT magnum, sesquipollicare, oblongum, supra depresso-convexum, subtus planum, læve, inerme. Vertex fossula subpollicaris, lævis, utrinque osse elevato marginata antice angustior, apice supra maxillam superiorem in canaliculum desinens. Setæ duæ in tuberculo lineare antice in medio fossulæ: unica anterior unguicularis, tenuior, altera crassior, parum longior; duæ postice ad apicem fossulæ. *Spinulæ quinque* utrinque in margine elevato fossulæ, tres anteriores, a posterioribus parum remotæ, minores, posteriores parum majores. *Quinque* postice prope oculos tres anteriores, duæ posteriores. *Duæ* utrinque ad commissuram oris, exstantes. *Duæ* in medio ad marginem inferiorem capitis: anterior parum inferior, major capiti parallela, antice versa; altera parum superior, minor, horizontaliter exstans. *Unica* utrinque postice, supra pinnas pectorales, reliquis parum major, tridentata.

²¹ Gilbert.—Bull. U.S. Fish. Comm. (1903), pt. ii, 1905, p. 691, fig. 273. Oahu.

- Rictus* ore clauso oblique sursum spectans, arcuatus; aperto semihorizontalis, amplus.
- Maxilla inferior* oblonga, superiore longior, parum angustior. *Ossa mobilia*, subtus planiuscula, apice tuberculo minuto. *Ossicula gulae* ut in præcedente [i.e. in *Lophius stellatus*].
- Maxilla superior* semiorbicularis, inferiore latior, apice emarginata. *Ossa* duo, anteriora mobilia.
- Labia* vix ulla perceptibilia.
- Dentes* utriusque maxillæ conferti, aciculares inæquales.
- Lingua* oblonga, lævis, nigra, albido maculata, apice libera. Lineæ quatuor denticulorum postice versus faucem.
- Oculi* in medio capitis postice sub margine fossulæ, parvi.
- Apertura branchialis* postice in margine sub pinnis pectoralibus, lunaris.
- Anus* prope caudam.
- Pinna dorsalis* solitaria, quinque-radiata.
- Pinnæ pectorales* in capite postice prope caudam more generis branchiis longiores insidentes, horizontaliter expandendæ, obovatæ, unguiculares, decem-radiatæ.
- Pinnæ ventrales* anteriores, lineares, angustæ, unguiculares, distantes, quinque-radiatæ.
- Pinna analis* in medio caudæ, dorsali opposita, quinque-radiata.
- Pinna caudalis* unguicularis, sexradiata."

Family TETRAODONTIDÆ.

Genus LIOSACCUS Günther, 1870.

Liosaccus Günther, Cat. Fish. Brit. Mus., viii, 1870, pp. 272 and 287. Logotype, *Tetrodon cutaneus* Günther.

LIOSACCUS AEROBATICUS, *sp. nov.*

(Plate xvi, fig. 2.)

D.i/8; A.ii/7; P.i/15; C.9.

Head (55 mm.) 3.2 in total length (177). Eye (11) 2.5 in interorbital width (28), and 5 in head. Distance between nostrils (11) equal to diameter of eye. Snout, measured obliquely, (29) 1.9 in head.

Profile of back gently curved; highest point over pectorals. Belly greatly distended. Normal depth probably about equal to breadth of body. Caudal peduncle tapering, broader than high. A crest over each eye is slightly higher than the broad flat interorbital. Only the lower orbital margin free. Each nasal papilla is less than half the size of the eye, is pierced by two nostrils, and rests in a depression which is deepest posteriorly. Lips thick, covered with dense papillæ like the pile of a carpet. Four teeth forming typical tetraodont jaws.

Body smooth, without keels or spines; its surface thrown into many minute folds. A few creases below the mouth and around the vent, which is large and situated just before the anal fin. Lateral line system indistinguishable except as a short streak on each side of the caudal peduncle.

Dorsal inserted far back, but entirely anterior to anal. Both these fins are small, with rounded margins. Upper and lower pectoral rays tending to form lobes. Caudal with gently rounded margin; the first and ninth rays thick and simple.

Colour, in alcohol, grey with olive-greenish tinge, becoming brownish-grey on back and over head. Nostrils, mouth, and fins yellowish.

Described and figured from the unique holotype, 177 mm. long. Austr. Mus. regd. No. 1A.408.

Locality.—Trawled off Montague Island, southern New South Wales, in 70-100 fathoms; coll. F. A. McNeill and A. A. Livingstone, Oct., 1921.

Affinities.—*Liosaccus aerobaticus* differs from *Tetrodon cutaneus* Günther,²² from St. Helena, in having the diameter of the eye much less than the interorbital width. This species, or one very near it, has been figured as *Liosaccus cutaneus* by Fowler²³ from a specimen from the Azores which has a concave-edged caudal and only six dorsal and anal rays. *Tetrodon angusticeps* Jenyns,²⁴ from the Galapagos Archipelago, also has a much narrower interorbital than *Liosaccus aerobaticus*. Günther has placed *Tetraodon porphyreus* Temminck and Schlegel²⁵ in *Liosaccus*, but this appears to be a *Spheroides*. I have not been able to consult the description of *Liosaccus intermedius* Ribeiro,²⁶ from Brazil. Tanaka²⁷ has figured a *Liosaccus* from Japan which he identified with *Spheroides inermis* Temminck and Schlegel, but it differs in several respects from the original figure of that species.

Family SCYLLIORHINIDÆ.

PRISTIURUS (FIGARO) BOARDMANI, *subg. et sp. nov.*

(Plate xviii, fig. 3.)

Pristiurus sp. Whitley, Mid-Pacific Mag., xxxi, 6, June, 1926, p. 578. New South Wales.

A species of *Pristiurus* which appears to be new has recently been trawled in the southern waters of New South Wales. It has a well-marked colour-pattern consisting of brownish bands which cross the upper half of the body and tail and are interspersed with lighter brown areas on a light grey ground-colour. No black margins to fins. In general form and major characters, the new species, which I name *Pristiurus boardmani*, resembles *P. melastomus* (Rafinesque), the type species of the genus, with a Mediterranean specimen of which I have compared it. However, there are fewer

²² Günther.—Cat. Fish. Brit. Mus. viii, 1870, p. 287.

²³ Fowler.—Proc. U.S. Nat. Mus. lvi, 1920, p. 206, fig. 3.

²⁴ Jenyns.—Zool. Voy. Beagle iii, 4, 1842, p. 154, pl. xxviii.

²⁵ Temminck and Schlegel.—Fauna Japonica, Poiss. 1850, p. 282, pl. cxxi, fig. 1.

²⁶ Ribeiro.—A Lavoura, Bol. Soc. Agric. Rio de Janeiro, 1904, p. 33.

²⁷ Tanaka.—Fish. Japan xiv, 1913, p. 233, pl. lxvi, fig. 239.

pores on the head of *P. boardmani* than on that of *P. melastomus*, and the inside of the mouth is not so dark. The base of the anal is twice as long as that of the first dorsal, the anal fin terminating just behind the vertical of the origin of the second dorsal. In *P. melastomus*, the anal terminates just before the subcaudal fin, but in *P. boardmani*, there is a long caudal peduncle with enlarged denticles on its lower as well as its upper median surface. The important fact that there are specialized denticles between the separated anal and subcaudal fins induces me to regard *Pristiurus boardmani* as the orthotype of a new subgenus, *Figaro*.

The holotype of *Pristiurus (Figaro) boardmani* is a male, 540 mm. in total length; Australian Museum registered No. IA.2483. It was obtained by my friend and colleague Mr. William Boardman, after whom it is named, on a collecting trip aboard a trawler. Mr. Boardman subsequently collected two more males which are smaller than the holotype and show no important variation.

Localities.—10 miles N.E. of Montague Island, southern New South Wales; 70-80 fathoms, charted as "fine, sandy bottom." Trawler "Bar-ea-mul," 18th July, 1925 (Holotype).

24 miles N.N.E. of Montague Island; 90 fathoms. Trawler "Gunner," Sept., 1926 (Paratypes).

In Garman's key to the species of *Pristiurus* in his monograph of the Plagiostomia,²⁸ the new species comes nearest to *P. eastmani* Jordan and Snyder²⁹ but differs in having a more arched back, first dorsal fin inserted slightly further back, and tip of anal not reaching the vertical of the termination of the second dorsal. *P. eastmani* is the nearest ally of *P. boardmani* and evidently enters the subgenus *Figaro*.

Apart from the present novelty, only three species of *Pristiurus* appear to have been described since Garman wrote his monograph. *Pristiurus aræ* Nichols³⁰ differs in its striking colour-markings and in having the anal fin close to the subcaudal. *P. hertwigi* Engelhardt³¹ also differs in colours and proportions. I have been unable to consult the description and figures of *P. jenseni* Sæmundsson.³²

²⁸ Garman.—Mem. Mus. Comp. Zool. Harvard xxxvi, 1913, p. 91.

²⁹ Jordan and Snyder.—Smith, Misc. Coll. xlv, 1904, p. 230, pl. lx. Izu, Japan.

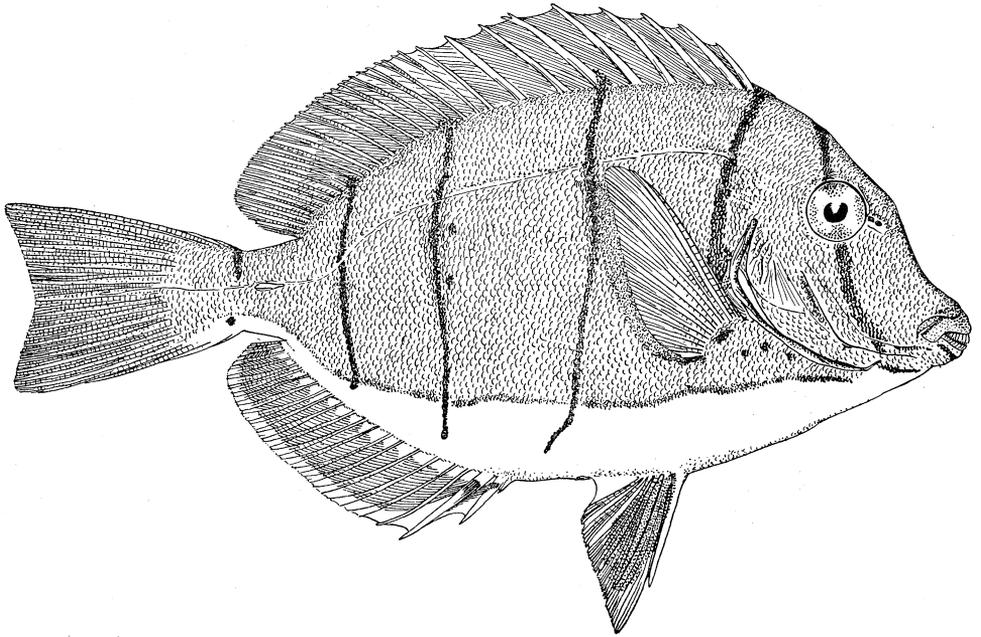
³⁰ Nichols.—Amer. Mus. Novitates 256, 1927, pp. 1-2, fig. 1. Florida.

³¹ Engelhardt.—Zool. Anzeiger, xxxix, 1912, p. 644. Yokohama.

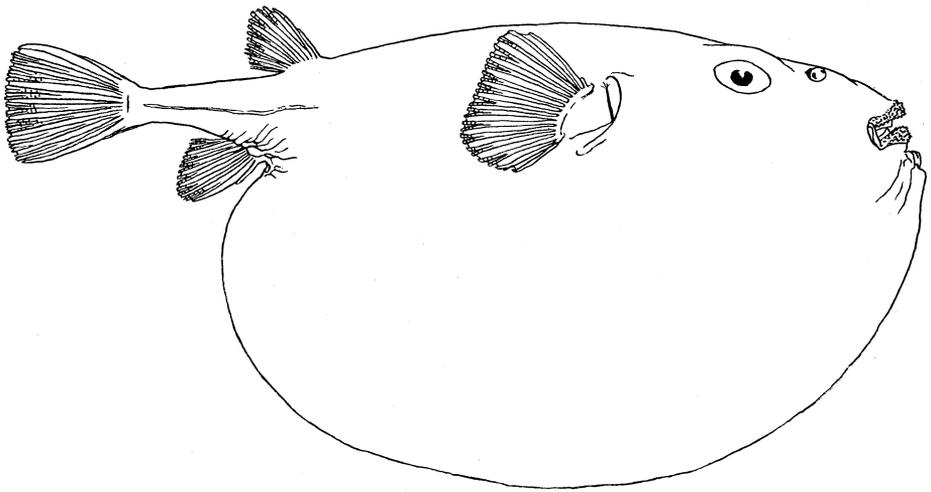
³² Sæmundsson.—Videns. Medd. nat. For. lxxiv, 1923, p. 169, pl. iv, fig. 1 and pl. v, fig. 3. Iceland (*vide* Zoological Record).

EXPLANATION OF PLATE XVI.

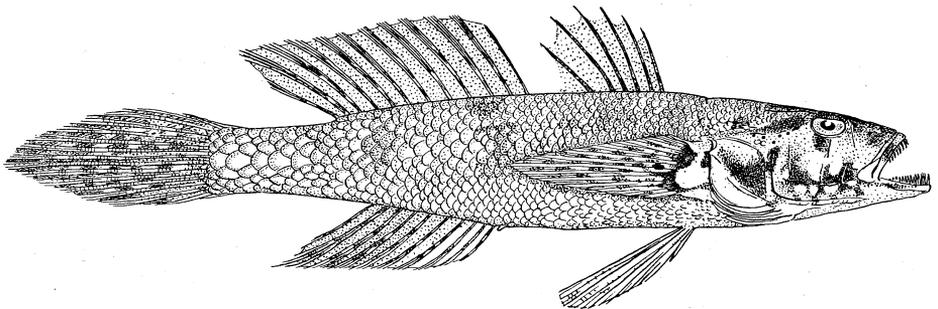
- Fig. 1. *Teuthis trougtoni*, *sp. nov.* Holotype from Vanikoro, Santa Cruz Group.
- Fig. 2. *Liosaccus aerobaticus*, *sp. nov.* Holotype from off Montague Island, New South Wales.
- Fig. 3. *Gunnamatta insolita*, *gen. et sp. nov.* Holotype from Port Hacking, New South Wales.



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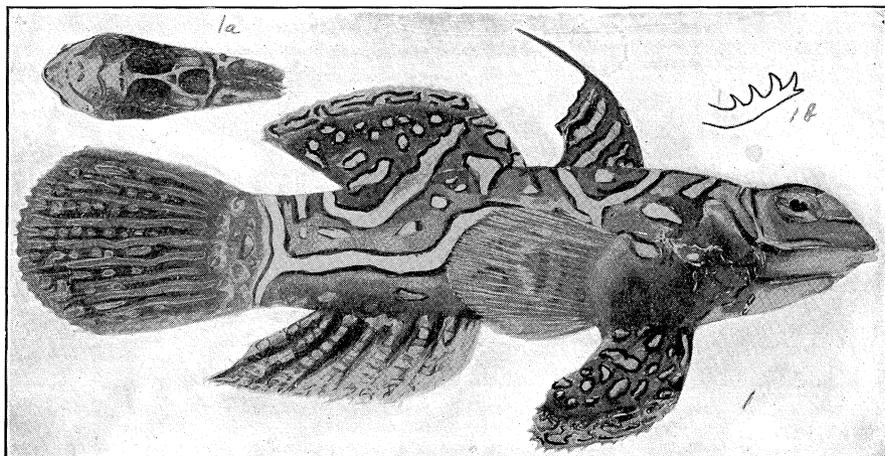


3

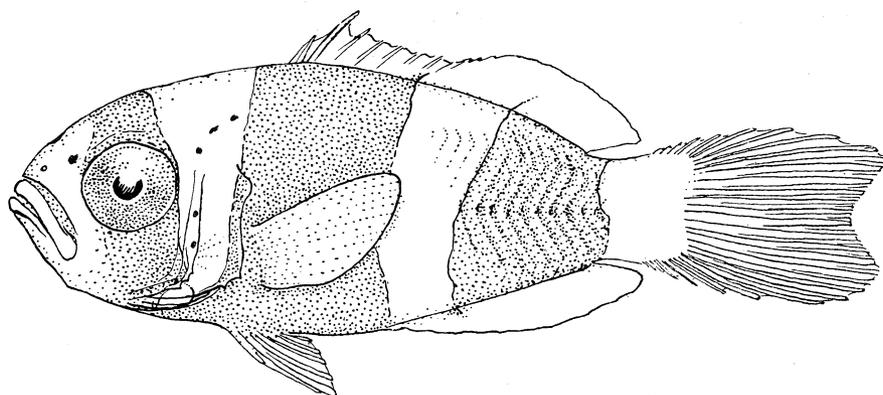
G. P. Whitley, del.

EXPLANATION OF PLATE XVII.

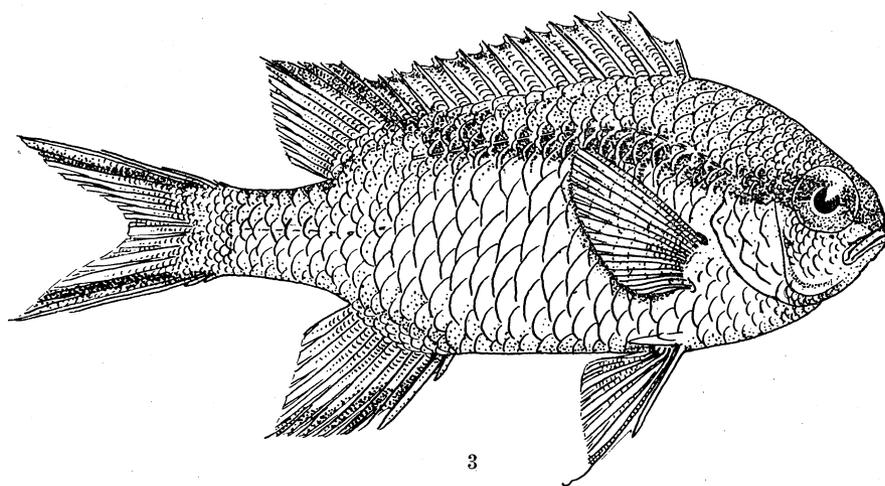
- Fig. 1. *Synchiropus splendidus* (Herre). A specimen from Hayman Island reef, Whitsunday Group, Queensland. 1*a*, breast of same; 1*b*, preopercular spine of same.
- Fig. 2. *Amphiprion papuensis* Macleay. A young specimen from Holbourne Island, Queensland.
- Fig. 3. *Tetradrachmum nitidum*, *sp. nov.* Holotype from Hayman Island reef, Whitsunday Group, Queensland.



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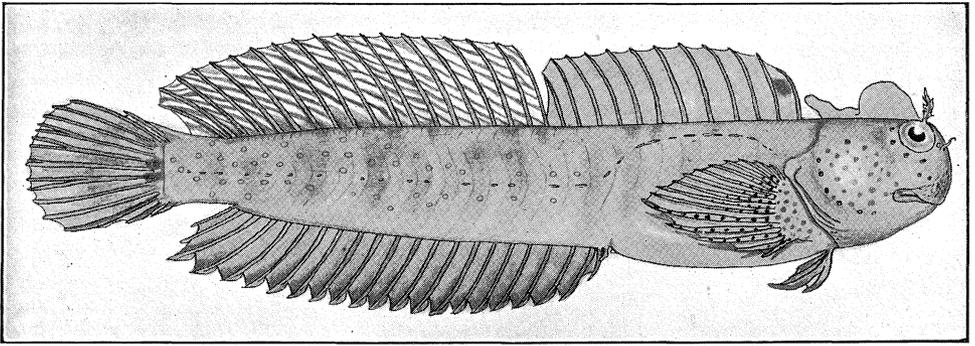


3

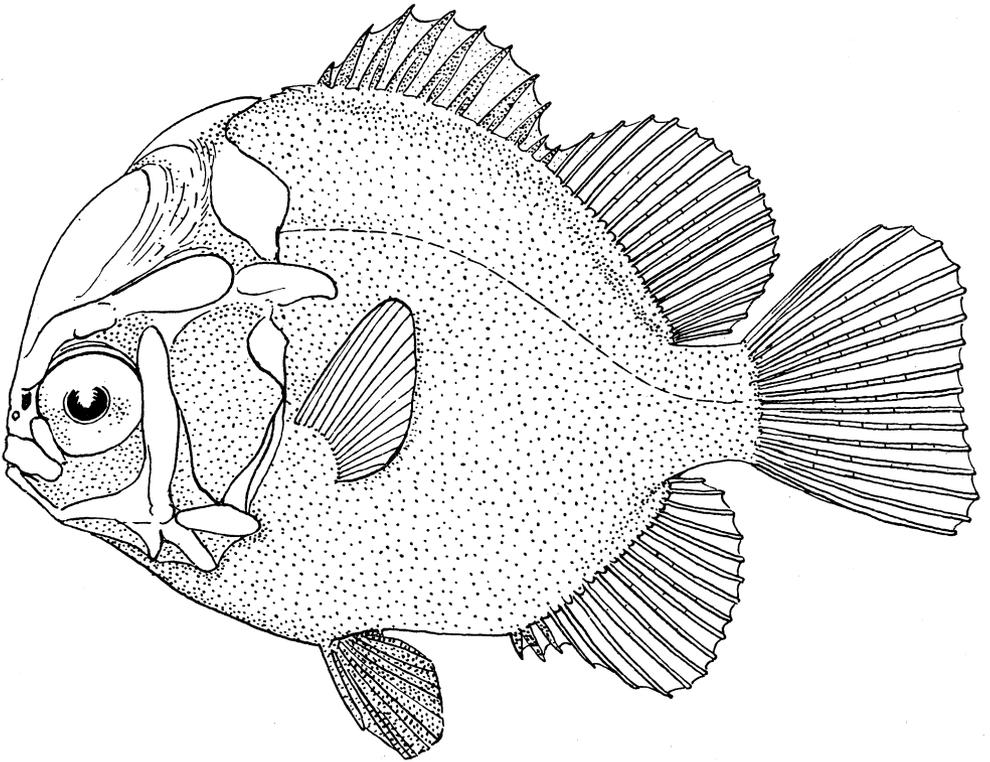
A. R. McCulloch and Joyce K. Allan (1), del.
G. P. Whitley (2 and 3), del.

EXPLANATION OF PLATE XVIII.

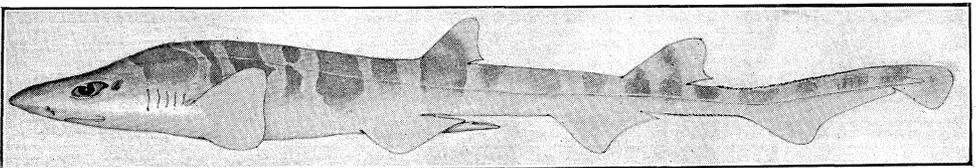
- Fig. 1. *Salarias macneilli* Whitley, *sp. nov.* Holotype from the New Hebrides.
- Fig. 2. *Tholichthys* stage of *Scatophagus*. A 12 mm. specimen from Port Denison, Queensland.
- Fig. 3. *Pristiurus (Figaro) boardmani*, Whitley, *sp. nov.* Holotype from off Montague Island, New South Wales.



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2



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G. P. Whitley, del.