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STUDIES IN ICHTHYOLOGY.

No. 3.¹

BY

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(Plates xxx-xxxiv and Figures 1-5.)

Family LAMNIDÆ.

ISURUS MAKO, *sp. nov.*

1926 *Isurus glaucus* Phillipps, Trans. N. Zeal. Inst. (n.s.) lvi, 1926, p. 530, pl. lxxxvii. New Zealand. Not *Oxyrhina glauca* Müller and Henle, Plagiost. ii, 1839, p. 69, pl. xxix, from Java.

Mr. Zane Grey has recently written about the large game fishes of New Zealand in Natural History, xxviii, 1, 1928, p. 47 *et seq.*, and appears to have introduced two new names: *Seriola dorsalis* for the New Zealand Kingfish or Haku which has been generally identified with *S. lalandii* Cuv. and Val, and *Marlina* gen. nov. for the Striped Marlin Swordfish (*Makaira mitsukurii zelandica* Jordan and Evermann²), genotype by monotypy. These names he probably derived from the manuscripts of some American ichthyologist. Grey also refers to the New Zealand Mako shark as *Isurus sp.* but this might as well have been given a new name also as the New Zealand form hitherto called *I. glaucus* is evidently distinct from the typical Javanese species described by Müller and Henle. The excellent account given by Phillipps (*loc. cit.*) emphasizes the differences between the New Zealand Mako Shark and the true *Isurus glaucus* (M. & H.) and shows that the former requires a new name. *Isurus mako*, nom. nov., is therefore proposed for the specimen figured by Phillipps, to whom the credit is due for suggesting that the Neozelanic species might be new to science.

Family SCYLLIORHINIDÆ.

Genus PRISTIURUS Bonaparte 1834.

1810 *Galeus* Rafinesque, Caratt. Nuovi Generi Spec. Sicilia, Apr. 1, 1810, p. 13. Part referring to *G. melastomus* Raf. only (*vide* Jordan, Gen. Fish, i, 1917, p. 78); *Galeus* Raf. s. str. has as tautotype *Squalus galeus* Linn. 1758, which is not congeneric.

¹ For No. 2, see "Records," xvi, No. 4, 1928, p. 211.

² Jordan and Evermann.—Occas. Pap. Calif. Acad. Sci., xii, 1926, p. 65, pl. xix, fig. 2. Bay of Islands, New Zealand.

- 1816 *Scylliorhinus* Blainville, Bull. Soc. Philom., 1816, p. 121—in part (*vide* Garman, Mem. Mus. Comp. Zool. Harvard, xxxvi, Sept., 1913, p. 91).
- 1821 ? *Prionurus* Otto, Conspect. anim. 1821, p. 5 (not seen). Preocc. by *Prionurus* Lacépède 1804.
- 1832 *Pristiurus* Bonaparte, Distr. Meth. Verh. [Saggio distr. metod. Anim. Vert.]. 1832, p. 63. *Nomen nudum* (*vide* C. D. Sherborn, *in lit.*).
- 1834 *Pristiurus* Bonaparte, Icon. Faun. Ital. (7), 1834 (not 1833 as stated by Agassiz), descr. of *Scyllium melanostomum* (*vide* C. D. Sherborn, *in lit.*).
- 1837 *Pristiurus* Müller and Henle, Arch. Naturg. (Wiegmann), 3rd year, pt. i, 1837, p. 396; and Berichte Verh. K. Pr. Akad. Wiss. Berlin, July, 1837 (? publ. 1838), p. 113. Not *Pristurus* Rüppell, Neue Wirbelth. Amphib. 1835, p. 16, a genus of lizards.
- 1838 *Pristiurus* Müller and Henle, Mag. Nat. Hist. (Charlesw.), ii, Jan., 1838, p. 34.
- 1838 *Pristiurus* Smith, Proc. Zool. Soc. (Lond.), v (1837), Feb. 13, 1838, p. 86. Haplotype, *Scyllium melanostomum* Bonaparte (= *Galeus melastomus* Raf.).
- 1838 *Pristidurus* Bonaparte, Mem. Soc. Neuchatel ii, 1838, Selachorum tabula analytica, p. 11 (*vide* Dumeril, Hist. Nat. Poiss. i, 1, 1865, p. 324; date from Sherborn).
- 1838 *Pristiurus* Müller and Henle, Syst. beschr. Plagiostomen i, 1838, p. 15.
- 1839 *Pristiurus* Swainson, Nat. Hist. Classif. Fish. Amphib. Rept. ii, July, 1839, pp. 191 and 317.
- 1846 *Prionurus* Bonaparte, Catalog. Metod. Pesci Europei, 1846, p. 19. *Ex* Otto, 1821. Name only, substituted by *Pristiurus*, evidently based on *Squalus prionurus* Otto, 1821, which is a synonym of *Pristiurus melanostomus* Bonaparte; not *Prionurus* Lacépède 1804, another genus of fishes.
- 1851 *Pristidurus* Gray, List. Spec. Fish. Brit. Mus. i, Chronodropt. 1851, p. 32.
- 1865 *Pristiurus* Dumeril, Hist. Nat. Poiss. i, 1, 1865, p. 324.
- 1866 *Pristiurus* Bocage and Capello, Peixes Plagiost. i, 1866, p. 11. One species, *P. artedi* (Risso) which is a synonym of *P. melastomus* (Rafinesque).
- 1870 *Pristiurus* Günther, Cat. Fish. Brit. Mus. viii, 1870, p. 406.
- 1895 *Pristiurus* Goode and Bean, Oceanic Ichthyology, June, 1895, p. 20.

- 1908 *Pristiurus* Regan, Ann. Mag. Nat. Hist. (8), i, June 1, 1908, p. 463 (key to spp.).
- 1908 *Galeus* Fowler, Proc. Acad. Nat. Sci. Philad. lx, 1, June 9, 1908, p. 53. Not *Galeus* Rafinesque, s. str. *G. melastomus* Raf. designated as type; but *Squalus galeus* Linn., as tautotype, overrules this selection.
- 1910 *Pristurus* Parker and Haswell, Text-book Zool. ii, 1910, p. 183.
- 1912 *Pristiurus* Engelhardt, Zool. Anzeiger xxxix, 1912, p. 644.
- 1913 *Pristiurus* Engelhardt, Abh. Bayer K. Akad. Wiss. iv, Suppl.-Bd. 3, 1913, p. 98.
- 1913 *Pristiurus* Garman, Mem. Mus. Comp. Zool. Harvard xxxvi, Sept., 1913, pp. 68 and 91.
- 1919 *Pristidurus* Jordan, Gen. Fish. ii, 1919, p. 194. "Orthotype," *Galeus melastomus*.
- 1919 *Pristiurus* Jordan, Gen. Fish. ii, 1919, p. 208.
- 1920 *Pristiurus* Jordan, Gen. Fish. iv, 1920, p. 573. *Ex* McCulloch MS.
- 1922 *Pristiurus* Sæmundsson, Vidensk. Medd. Dansk. naturh. Foren. lxxiv, May, 1922, p. 169.
- 1923 *Pristiurus* and *Pristidurus* Jordan, Classif. Fish. 1923, p. 98.
- 1928 *Pristiurus* Whitley, Rec. Austr. Mus. xvi, 4, 1928, p. 238.

In reply to an enquiry, Mr. C. Davies Sherborn of the British Museum, kindly supplied me with 1832 and 1834 references to *Pristiurus* Bonaparte which show that this name cannot be suspected of being preoccupied by *Pristurus* Rüppell 1835, a genus of lizards. Müller and Henle cited the name in four publications which appeared at short intervals in 1837 and 1838. In 1838, Bonaparte used the variant *Pristidurus*, and in 1846 placed the name "*Prionurus* Ott." in brackets after *Pristiurus* Bp. Evidently he meant to imply that *Pristiurus* might be regarded as a substitute name for *Prionurus* Otto 1821 (type *Squalus prionurus* Otto), which is preoccupied by *Prionurus* Lacépède 1804. I have not seen Otto's work, nor have I been able to trace another reference to his genus *Prionurus*.

The type of *Pristiurus* is called by most authors *P. melanostomus*, but since that species was apparently not described by Bonaparte³ until 1834, it seems more correct to call it *P. melastomus* (Rafinesque), which was originally included in the genus *Galeus*.⁴ Other synonyms appear to be *Scyllium artedi* Risso⁵ and *Squalus prionurus* Otto.⁶

³ Bonaparte.—Icon. Faun. Ital. fasc. 7, 1834, p. 15. Not seen.

⁴ Rafinesque.—Caratt. Nuovi Generi Spec. Sicilia, Apr. 1, 1910, p. 13 (*vide* Jordan, Gen. Fish. i, 1917, p. 78).

⁵ Risso.—Journ. de Physique, xci, Oct., 1820, p. 241 (*vide* Sherborn, Ind. Anim.); and Hist. Nat. Eur. Merid. iii, 1826, p. 117, pl. iii, fig. 5.

⁶ Otto.—Conspect. Anim. 1821, p. 5 (*vide* Müller and Henle, Plagiostomen).

An Australian relative is the deep-water *Figaro boardmani* which is sometimes trawled in the southern waters of New South Wales.⁷

Family ATHERINIDÆ.

ATHERINA UISILA Jordan and Seale.

(Fig. 1.)

- 1825 ? *Atherina vaiigiensis* Quoy and Gaimard, Voy. Uranie Physic., Zool. 1825, p. 335. Waigiou.
- 1898 *Atherina lacunosa* Waite, Sci. Rept. Fishes,⁸ in Farnell, Rept. Trawling Oper. "Thetis," about June, 1898, p. 60 (Lord Howe Island). Not *A. lacunosa* Bloch and Schneider 1801. Waite's specimens in Austr. Mus. examined.
- 1904 *Atherina lacunosa* Waite, Rec. Austr. Mus. v, 3, March, 1904, p. 197.
- 1906 *Atherina uisila* Jordan and Seale, Bull. U.S. Bur. Fish. xxv, Dec. 15, 1906, p. 216, fig. 23. Apia, Samoa. Type in U.S. Nat. Mus.; 2 paratypes in Austr. Mus.
- 1919 *Atherina uisila* Jordan and Hubbs, Stud. Ichth., Monogr. Silversides (Stanford Univ. Publ.), 1919, p. 42.
- D.viii/i/10; A.i/13; P.16; V.i/5; C. 17. Sc. 43.

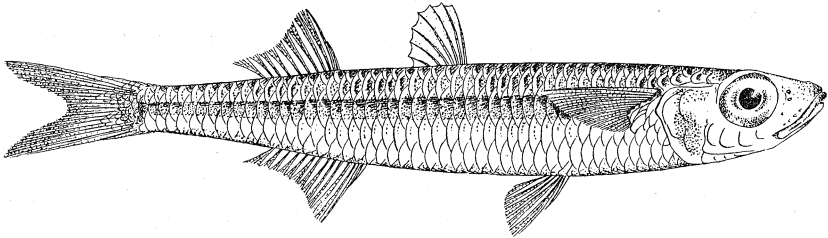


Figure 1.

⁷ Whitley.—Rec. Austr. Mus. xvi, 4, 1928, p. 238, pl. xviii, fig. 3.

⁸ A preliminary account of the fishes obtained by the "Thetis" was written by Edgar R. Waite in Farnell's "Report upon Trawling Operations off the Coast of New South Wales, between the Manning River and Jervis Bay, carried on by H.M.C.S. "Thetis," under the Direction of Frank Farnell, Esq., M.P." This was issued in 8vo in a pink cover in about June, 1898, and contains important notes on New South Wales and Lord Howe Island fishes. Two new species were described therein: *Histiopertus farnelli*, p. 33, pl. iv; and *Chimera ogilbyi*, p. 56, pl. xi. An edition dated 7th July, 1898, was issued in a blue cover, 8½ x 13 inches, and noted in Abstr. Proc. Linn. Soc. N. S. Wales, 31st Aug., 1898. Thus the smaller sized edition, which is registered 15th July, 1898, in the Australian Museum library, was evidently published first and should be quoted in ichthyological literature. The main report on the "Thetis" fishes was not issued until Dec. 23, 1899, in Austr. Mus. Mem. iv, part 1.

In passing, I may also record that Waite's "The Fishes of South Australia" (Handbk. Flor. Faun. S. Austr.) was published on May 22, 1923. A new name, *Spheroides lacrimosus*, was proposed on page 226.

This species has been recorded from Lord Howe Island as *Atherina lacunosa* Bloch and Schneider,⁹ which has fewer scales. Re-examination of the Australian Museum series shows that the Lord Howe Island form is referable to *A. uisila* Jordan and Seale as it not only enters the section *Atherina* in Jordan and Hubbs' key (*loc. cit.*, p. 14), but has the following characters: Sc. 43, 18 predorsals, anus midway between origins of ventral and anal fins, teeth on vomer, elevated mandibular rami, premaxillary processes slightly more than half length of eye. Two paratypes of *A. uisila* have been compared with the Lord Howe Island series, of which one specimen (No. I.6652) is illustrated here.

Range.—Samoa; Lord Howe Island and New Hebrides (specimens in Austr. Mus.).

Family LEPTOCEPHALIDÆ.

Genus LEPTOCEPHALUS Scopoli 1777.

- 1763 "*Leptocephalus*" Gronow, Zoophyl. i, 1763, p. 135. Non-binomial.
- 1764 "*Conger*" Houttuyn, Nat. Hist. vii, 1, 1764, p. 103 (*vide* Sherborn, Ind. Anim.). Non-binomial, *teste* T. Iredale; *et vide* Jordan, Gen. Fish. ii, 1919, p. 167.
- 1775 "*Conger*" Klein, Schauplatz. Natur. i, 1775, p. 22. Logotype, *Muraena conger* Linnæus (*vide* Jordan, *loc. cit.*, *infra*, 1917). Non-binomial.
- 1776 "*Morris*" [Pennant], Brit. Zool. iii, 4, 8vo ed., 1776, p. 158, pl. xxv, fig. 67. 4to ed. not seen, *sed vide* Iredale, Proc. Malac. Soc. Lond. xv, Dec., 1922, pp. 80-83. Specimen collected by W. Morris near Holyhead and sent by Pennant to Gronow of Leyden who had named it *Leptocephalus*.
- 1777 *Leptocephalus* Scopoli, Int. Hist. Nat. 1777, p. 453. *Genus cælebs*. *Ex* Gronow. Logotype, *L. morrisii* Gmelin = *L. taniola* Meuschen, the larval form of *Muraena conger* Linnæus. Not *Leptocephalus* Basilewsky 1855, another genus of fishes.
- 1781 *Leptocephalus* Meuschen, Index Gronov. Zoophyl. pt. iii, 1781. Haplotype, *L. taniola* Meuschen, based on "*Leptocephalus*" Gronow.
- 1789 *Leptocephalus* Gmelin, Syst. Nat. (Linn.) ed. xiii, i, 3 (before 20th Nov.), 1789, pp. 1130 and 1150. Haplotype, *L. morrisii* Gmelin.

⁹ Bloch and Schneider.—Syst. Ichth. 1801, p. 112, *ex* Forster MS. New Caledonia. *Idem* Forster, Descr. Anim. maris Australis (ed. Lichtenstein), 1844, p. 298. *Idem* Ogilby, Mem. Qld. Mus. i, 1912, pp. 37 and 40, pl. xii, fig. 2 and text-fig. a.

- 1789 *Morris* Berkenhout, Synops. Nat. Hist. Gt. Brit. Ireland ed. 2, vol. i, 1789, p. 65. Haplotype, *Morris* sp. from Anglesea, "Br. Zool. iii, No. 67," = *Leptocephalus taniola* Meuschen. *Idem, ibid.* ed. 3, vol. i, 1795, p. 65.
- 1816 "*Les Congres*" Cuvier, Règn. Anim. ed. 1, ii, "1817" = Dec., 1816, p. 231. Vernacular, not latinized by Schinz, 1822.
- 1817 *Conger* Oken, Isis, 1817, p. [1182a] (*vide* Sherborn). *Nomen nudum* regarded as = "*Les Congres*," Cuvier.
- 1826 *Conger* Risso, Hist. Nat. Eur. Merid. iii, 1826, p. 200. Logo-type, by present designation and by virtual tautonomy, *Conger verus* Risso = *Muraena conger* Linnæus.
- 1832 *Conger* Voigt, Das Thierreich (Cuvier) ii, 1832, p. 456. *Ex* Cuvier, *vernac.*
- 1840 "The *Morris* (*Leptocephalus*)" Gray, Synops. Cont. Brit. Mus., ed. 42, second issue, p. 52.
- 1845 *Congrus* Richardson, Zool. Sulphur (Fish), 1845, p. 105. Variant of *Conger*.
- 1848 *Congrus* Richardson, Voy. Erebus and Terror (Fish, 1848), p. 107.
- 1917 *Leptocephalus* Jordan, Gen. Fish, i, 1917, p. 22.
- 1917 *Conger* Jordan, Gen. Fish. i, 1917, pp. 22, 37 and 101.
- 1919 *Conger* Jordan, Gen. Fish. ii, 1919, p. 167.
- 1925 *Conger* Jordan and Hubbs, Mem. Carneg. Mus. x, 2, June 27, 1925, p. 193.

Status of the genus MORRIS Berkenhout.

In the second edition (1789) of his Synopsis, Berkenhout introduced a new generic name, *Morris*, on p. 65, as follows:—

"MORRIS. Head small. Body thin, compressed. Pectoral Fins o.

"1. . . . Anglesea. Eyes large. Teeth in both jaws, minute. Dorsal Fin very low, the whole length of the Back. Body $\frac{1}{16}$ of an inch thick. Whole Length 4 inches. Sides marked with oblique lines meeting in the lateral line. *Br. Zool.* iii, No. 67."

This diagnosis does not appear in the first edition (1769) of Berkenhout's "Synopsis," but is reprinted without alteration on p. 25 of the third edition (1795). The first and second editions are in the library of Mr. T. Iredale, to whom I am indebted for calling my attention to the name *Morris*; the third edition is in the Australian Museum. *Morris* Berkenhout is a valid generic name, and

not, like the "Morris" of Pennant's "British Zoology," a vernacular designation. It has been overlooked by subsequent authors, and is missed from Jordan's "Genera of Fishes." As shown in the above synonymy, *Morris* is a direct synonym of *Leptocephalus* Scopoli; a later synonym being *Conger* Risso, with its variant *Congrus* Richardson.

Leptocephalus tæniola Meuschen 1781 is the first binomial specific name given to the larval form of the conger eel, and is prior to *Leptocephalus morrisii* Gmelin 1789, but both names are synonyms of *Muræna conger* Linnæus 1758, which must now be known as *Leptocephalus conger*.

Family MURÆNIDÆ.

PSEUDECHIDNA BRUMMERI (*Bleeker*).

- 1858-9 *Muræna brummeri* Bleeker, Nat. Tijdschr. Ned. Ind. xvii, 1858-9, p. 137. Timor.
- 1865 *Strophidon polyodon* Bleeker, Ned. Tijdschr. Dierk. ii, 1865, p. 47. Amboina.
- 1865 *Strophidon brummeri* Bleeker, Atl. Ichth. iv, 1865, p. 109, pl. clxii, fig. 1.
- 1865 *Strophidon polyodon* Bleeker, *ibid.* p. 109, pl. clxiii, fig. 3.
- 1872 *Muræna tænioides* Günther, Proc. Zool. Soc. Lond. 1871 (May 2, 1872), p. 674. Savaii, Samoa.
- 1901 *Strophidon brummeri* Jordan and Snyder, Proc. U.S. Nat. Mus. xxiii, 1901, p. 885.
- 1906 *Gymnothorax tænioides* Jordan and Seale, Bull. U.S. Bur. Fish. xxv, 1906, p. 199, also p. 203 as *Strophidon brummeri*.
- 1910 *Muræna brummeri* Günther, Journ. Mus. Godeff. vi, 17 (Fische Südsee ix), 1910, p. 420.
- 1913 *Gymnothorax megapterus* Weber, Siboga Exped., Fische, May, 1913, p. 57, pl. vii, fig. 1. Savu Id., East Indies.
- 1916 *Muræna (Strophidon) brummeri* Weber and Beaufort, Fish. Indo-Austr. Archip. iii, 1916, p. 359, fig. 179 (references).
- 1922 *Strophidon brummeri* Fowler and Bean, Proc. U.S. Nat. Mus. lxii, 2, 1922, p. 9.
- 1929 *Strophidon brummeri* Deraniyagala, Spolia Zeyl. xv, 1, 1929, p. 22, pl. ii, fig. p (dentition).

Mr. Melbourne Ward collected two specimens of this elongate eel at Murray Island, Torres Strait. Austr. Mus. Nos. IA.3723-4.

New record for Australia.

*Family ALABETIDÆ.**ALABES PARVULUS (McCulloch).*

(Plate xxxi, fig. 7.)

- 1909 *Cheilobranchus parvulus* McCulloch, Rec. Austr. Mus. vii, 4, Aug. 30, 1909, p. 316, fig. 18. Rockpools near Sydney. Types in Austr. Mus.

In preservatives, specimens of *Alabes* generally become opaque and lose their natural colours. The painting by Mr. A. R. McCulloch reproduced here is therefore of particular value as it depicts a living specimen caught in Coogee Baths, near Sydney, on 2nd August, 1920.

*Family CONGROGADIDÆ.**CONGROGADUS SUBDUCENS (Richardson).*

(Plate xxx, fig. 1.)

- 1843 *Machærium subducens* Richardson, Ann. Mag. Nat. Hist. xii, Sept. 1, 1843, p. 175, pl. vi. Port Essington, North Australia, Type in Brit. Mus. (Nat. Hist.).

- 1926 *Congrogadus subducens* Whitley, Austr. Zoologist iv, 1926, p. 236, fig. 1. Larva from Capricorn Group, Queensland.

Mr. McCulloch's painting represents a Port Darwin specimen, 10¼ inches long, collected by Messrs. J. Christie and — Godfrey in 1902 (Austr. Mus. No. I.5151).

Besides a series of specimens, 8½ to 13 inches in length, from Port Darwin, there are specimens in the Australian Museum from Murray Island, North-west Islet, Palm Islands, and Port Denison, Queensland.

*Family ZEIDÆ.**Genus OREOSOMA Cuvier 1829.*

- 1829 *Oreosoma* Cuvier, Regn. Anim. ed. 2, ii, April, 1829, p. 171. *Genus cælebs.*

- 1829 *Oreosoma* Cuvier and Valenciennes, Hist. Nat. Poiss. iv, Nov., 1829, p. 515. Haplotype, *O. atlanticum* C. and V.; *ibid.*, p. 515, pl. xcix, as *O. coniferum*.

- 1839 *Oriosoma* (sic) Swainson, Nat. Hist. Classif. Fish. Amphib. Rept. ii, July, 1839, pp. 21, 169, and 208. Based on "*O. coniferum* Cuv. pl. 99."

- 1893 *Oreosoma* Vaillant, Comptes Rendus Acad. Sci. Paris cxvi, 1893, p. 598.

Vaillant gives important notes on the Atlantic species and discusses the affinities of this remarkable genus.

OREOSOMA WAITEI, *nom. nov.*

- 1912 *Oreosoma atlanticum* Waite, Trans. Proc. N. Zeal. Inst. xlv, 1911 (publ. June 10, 1912), p. 197, pl. xi. Lyall Bay, near Wellington, N. Zealand. Not *O. atlanticum* C. and V. 1829.
- 1914 *Oreosoma atlanticum* McCulloch, Biol. Res. Endeavour ii, 3, 1914, p. 115.
- 1927 *Oreosoma atlanticum* Phillipps, N.Z. Mar. Dept. Fish. Bull. i, 1927, p. 25.

A new name is required for the New Zealand species called *Oreosoma atlanticum* by Waite, as it differs in several respects from the Atlantic species. These differences were noted by Waite, but he did not give a distinguishing name to the species; I accordingly propose *Oreosoma waitei*, *nom. nov.* for the specimen figured by Waite.

Oreosoma coniferum was an alternative name for the Atlantic species given on Cuvier and Valenciennes' plate, and copied by Voigt,¹⁰ but it must be sunk as an absolute synonym of *O. atlanticum*.

Family EPINEPHELIDÆ.

MACCULLOCHELLA, *gen. nov.*

When reading some proof-sheets of Mr. C. D. Sherborn's "Index Animalium," now in course of publication, I noticed that the name *Oligorus* had been used for a genus of Coleoptera by Dejean¹¹ many years before Günther¹² applied it to the fish commonly known in Australia as the Murray Cod. Günther's name being therefore rendered invalid, as Scudder also noted, *Homodemus* De Vis¹³ next claims attention as it is the only synonym of *Oligorus* known to me. This name, however, is preoccupied by *Homodemus* Fieber¹⁴ and cannot be employed. The Murray Cod was first described by Cuvier and Valenciennes¹⁵ as *Grystes macquariensis*, the type having come from the Macquarie River, New South Wales. The genotype of *Grystes* is *G. salmoides* C. and V., an American species

¹⁰ Voigt.—Das Thierreich (Cuvier) ii, 1832, p. 237.

¹¹ Dejean.—Catal. Coleopt., ed. 2, iii, ante Oct., 1834, p. 206. *Teste* C. D. Sherborn.

¹² Günther.—Cat. Fish. Brit. Mus. i, 1859, p. 251. Logotype, *Grystes macquariensis*.

¹³ De Vis.—Proc. Linn. Soc. N. S. Wales ix, 2, Aug. 19, 1884, p. 395. Haplo-type, *H. cavifrons*.

¹⁴ Fieber.—Wiener Entomol. Monatschr. ii, 11, Nov., 1858, pp. 343 and 388, genus 22. *Nomen novum pro Hadrodemus* Fieber, *ibid.* ii, 10, Oct., 1858, p. 305, genus 22 (*non Hadrodema*, p. 311, genus 44). A genus of Hemiptera.

¹⁵ Cuvier and Valenciennes, Hist. Nat. Poiss. iii, April, 1829, p. 58.

not congeneric with the Australian form, as Günther recognised. *Gristes* Mitchell,¹⁶ emended to *Grystes* by Agassiz,¹⁷ applies to the Murray Cod, as does also *Gryptes* Lesson,¹⁸ a *nomen nudum*, but these names are mere variants of *Grystes* Cuvier and Valenciennes.¹⁹

The Murray Cod therefore requires a new generic name, so I propose *Maccullochella* for it in honour of the late Allan R. McCulloch. The genotype, *Grystes macquariensis*, will now be known as *Maccullochella macquariensis* (Cuvier and Valenciennes).

Family HYPOPLECTRODIDÆ.

ELLERKELDIA MACCULLOCHI, *sp. nov.*

(Plate xxx, fig. 3.)

- 1859 *Plectropoma semicinatum* Günther, Cat. Fish. Brit. Mus. i, 1859, p. 160 [Eastern] Australian specimen only. Not *P. semicinatum* Cuv. and Val. 1833.
- 1866 *Plectropoma semicinatum* Steindachner, Sitzb. Akad. Wiss. Wien. liii, 1866, p. 425.
- 1879 *Plectropoma semicinatum* Schmeltz, Mus. Godef. Cat. vii, 1879, p. 37.
- 1891 *Gilbertia semicineta* Jordan and Eigenmann, Bull. U.S. Fish. Comm. viii, 1888 (publ. Mar. 25, 1891), p. 347. Australian refs. only.
- 1895 *Gilbertia semicineta* Boulenger, Cat. Perc. Fish. Brit. Mus., 1895, p. 307.
- 1899 *Hypoplectrodes semicinatus* Waite, Austr. Mus. Mem. iv, 1899, p. 76.
- 1911 *Hypoplectrodes semicineta* McCulloch, Zool. Res. Endeavour i, 1911, p. 50.
- 1920 *Gilbertia semicineta* Rendahl, Nat. Hist. Juan Fern. and Easter I., iii, 1920, pp. 50, 51 and 55. Australian refs. only.
- 1921 *Gilbertia semicineta* McCulloch, Austr. Zool. ii, 2, 1921, p. 46; Check-list, 1922, p. 46.
- Br.7. D.x/21; A.iii/8; P.i/16; V.i/5; C.14. L.lat.46. L.tr.6/1/20.

Head (46 mm.) subequal to depth (45) 2·5 in length to hypural joint (115). Maxillary (21) 2·2, eye (9) 5·1, interorbital (5) 9·2, preorbital (7) 6·5 in head.

¹⁶ Mitchell.—Three Exped. Int. Austr. i, 1838, p. 95.

¹⁷ Agassiz.—Nomencl. Zool., Index Univ., 1846.

¹⁸ Lesson.—Ann. Sci. Nat. vi, Nov., 1825, p. 253.

¹⁹ Cuvier and Valenciennes.—Hist. Nat. Poiss. iii, April, 1829, p. 54.

Head scaly except on chin, preorbital, jaws, and a median area over the premaxillary processes. Interorbital very slightly convex. Two nostrils on each side, their openings circular with broad flaps. Preopercular margin rounded with strong serrations on the upper limb and three strong hook-like spines pointing forward from the angle and lower limb. Preorbital and opercular margins entire. Three flat spines on operculum, the median largest and centrally situated. Maxillary naked, reaching to below middle of eye, with a groove distinguishing the supplemental bone. Lower jaw longer than upper. Bands of small sharp teeth on jaws, vomer, and palatines, the inner ones depressible. Canines on each side of symphyses and one or two on each side of lower jaw. Tongue shaped like an arrowhead, toothless, and with a somewhat spatulate tip. Gill-rakers slender, spaced, 13 on lower limb of first gill-arch.

Body compressed, upper profile more arched than lower. It is entirely covered by finely ctenoid scales which are largest on the upper portions of the sides and smallest on the breast; they extend on to all the fins except the ventrals. More than forty transverse rows of scales between operculum and hypural joint. Lateral line beginning below a toothed scale, arched to below first dorsal, after which it follows curve of back and extends along caudal peduncle to base of tail; a scale from the lateral line has a smooth round root with a pocket-like flap over its tube. Vent in advance of anal fin.

Dorsal originating over opercular flap and terminating well behind anal. Fourth spine longest, but not so long as most of the dorsal rays. Margins of first and second dorsal convex. Second anal spine longer and stronger than any dorsal spine. Margin of anal rounded, the anterior rays much thickened. Pectoral reaching almost to level of anal, its upper rays normal, but the lower rays are much branched and feather-like, as are also the anterior ventral and lowest caudal rays. Ventral reaching more than half-way from its origin to that of anal. Caudal emarginate.

The colours of this species may be seen from the accompanying figure. There are usually seven cross-bars on the body which do not extend more than half-way down the sides except in very young specimens.

Described from the holotype of the species, a specimen $5\frac{1}{2}$ inches long, collected at Maroubra, New South Wales, by Mr. J. R. Kinghorn in July, 1912. Austr. Mus. regd. No. I.12472. The specimen figured was caught in September, 1902, at Rose Bay, Port Jackson.

This species has been confused with *Plectropoma semicinctum* Cuvier and Valenciennes²⁰ by authors. That Chilean species has

²⁰ Cuvier and Valenciennes.—Hist. Nat. Poiss. ix, March, 1833, p. 442, San Juan Fernandez.

been figured by Guichenot²¹ and described by Jordan and Eigenmann²² who made it the genotype of *Gilbertia*. As that name is preoccupied, the name *Ellerkeldia* proposed by me²³ for the allied *Plectropoma annulata* Günther is available for the present species.

Ellerkeldia maccullochi differs from *E. semicineta* in having a higher soft dorsal fin, transverse bars not extending to lower half of body, no dark marks on breast.

Specimens are in the Australian Museum from various localities in New South Wales, where the species apparently lives amongst rocks off shore. Günther²⁴ recorded this species or a close ally from Western Australia. There is also a form in New Zealand which has been named *Plectropoma huntii*.²⁵

Family CICHLIDÆ.

REGANOCHROMIS, *gen. nov.*

Orthotype.—*Paratilapia calliura* Boulenger.

Leptochromis Regan,²⁶ proposed for this species, is preoccupied by *Leptochromis* Bleeker,²⁷ a genus allied to *Pseudochromis*. *Leptochromis* Regan (*non* Bleeker) is therefore re-named *Reganochromis*, with *R. calliurus* (Boulenger), the only species so far known, as genotype.

Family PSEUDOCHROMIDIDÆ.

Genus LEPTOCHROMIS *Bleeker* 1876.

1876 *Leptochromis* Bleeker, Verh. Akad. Amsterdam xv, 1876, p. 21.

Orthotype, *Pseudochromis cyanotania* Bleeker (*vide* Jordan, Gen. Fish. iii, 1919, p. 382). Not *Leptochromis* Regan 1920, fam. Cichlidae, = *Reganochromis mihi*. *Idem* Bleeker, Arch. Néerl. Sci. Nat. xi, 1876, pt. 2, p. 321 (*vide* Weber and Beaufort, Fish. Indo-Austr. Archip. i, 1911, p. 234).

1926 *Pseudochromis* subg. *Leptochromis* McCulloch, Biol. Res. Endeavour v, 4, 1926, p. 185.

Allied to *Pseudochromis* Rüppell, but with all the dorsal and anal rays branched.

Genotype.—*Pseudochromis cyanotania* Bleeker.²⁸

²¹ Guichenot.—Hist. Chile (Gay), Zool. ii, 1849, p. 153, Ictiol. pl. ii, fig. 1. For note on figure see Boulenger, Cat. Perc. Fish. Brit. Mus., 1895, p. 307.

²² Jordan and Eigenmann.—Bull. U.S. Fish. Comm. viii, 1888 (1891), p. 347; Rendahl, Nat. Hist. J. Fern. and Easter I. iii, 1920, pp. 50, 51 and 55.

²³ Whitley.—Rec. Austr. Mus. xv, 5, 1927, p. 298.

²⁴ Günther.—Cat. Fish. Brit. Mus. i, 1859, p. 160. Swan River.

²⁵ Hector.—Trans. N. Zeal. Inst. vii, July, 1875, p. 240, pl. x, fig. 1. Chatham Is. See also Gill, Mem. Acad. Washington vi, 1893, p. 116; Hutton, Trans. N. Zeal. Inst. xxviii, June, 1896, p. 314; Waite, Rec. Canterbury Mus. i, 1, 1907, p. 19 and *ibid.* i, 3, 1911, p. 216.

²⁶ Regan.—Ann. Mag. Nat. Hist. (9), v, Jan. 1, 1920, pp. 36 and 46.

²⁷ Bleeker.—Verh. Akad. Amsterdam xv, 1876, p. 21 (*vide* Jordan, Gen. Fish.).

²⁸ Bleeker.—Nat. Tijdschr. Ned. Ind. xiii, 1857, p. 72. Boero, East Indies.

LEPTOCHROMIS TAPEINOSOMA WILSONI *subsp. nov.*

1853 ? *Pseudochromis tapeinosoma* Bleeker, Nat. Tijdschr. Ned Ind. iv, 1853, p. 115. Amboina, East Indies. *Idem*, Bleeker, Atlas Ichth. ix, 1877, pl. cccxc, f. 1.

1926 ? *Pseudochromis (Leptochromis) tapeinosoma* McCulloch, Biol. Res. Endeavour v, 4, 1926, p. 192, pl. li.

D.iii/26; A.ii/15 (last ray divided in each fin). L.lat. 31-33 plus 8-9; l.tr. 2/1/14-15. 39-42 transverse rows of scales between operculum and hypural joint.

Dorsal and anal spines pungent. Anterior and posterior portions of the lateral line separated by four rows of scales.

General colour, in spirit, light brownish becoming darker on top of head; all the fins lighter in tone. A few very indistinct transverse bars on the body and a dusky patch on operculum. Upper and lower borders of caudal lighter than its median portion; some obscure dusky bars on dorsal membranes.

Maximum length 53 mm. Standard length of holotype, 50; of paratype, 49.

Described from the holotype and paratype of the subspecies, registered Nos. IA.3873 and 3874 respectively, in the Australian Museum, Sydney.

Locality.—Port Darwin, North Australia.

Named after Mr. Leonard Wilson, of Darwin, who has made several collections of animals for the Australian Museum.

Affinities.—McCulloch (*loc. cit.*, p. 186) has given a key to the Australian species of *Pseudochromis* and *Leptochromis*. The new subspecies enters the section of the latter with the operculum unarmed. It differs from *L. tapeinosoma tapeinosoma* noticeably in having more dorsal rays, and appears to attain a larger size. *L. cyanotænia* Bleeker and *L. melanotænia* Bleeker have only about 22 dorsal rays and, as may be seen from the Atlas Ichthyologique, are differently coloured.

Family LEIOGNATHIDÆ.

LEIOGNATHUS DEVISI, *nom. nov.*

(Fig. 2.)

1884 *Equula argentea* De Vis, Proc. Linn. Soc. N. S. Wales ix, 3, Nov. 29, 1884, p. 542. Cape York, Queensland. Type in Queensland Museum examined. *Idem* Saville-Kent, Gt. Barrier Reef, 1893, p. 369. Name anticipated by *Leiognathus argenteus* Lacépède, Hist. Nat. Poiss. iv, 1802, p. 448.

1925 *Leiognathus argenteus* McCulloch and Whitley, Mem. Qld. Mus. viii, 1925, p. 145. *Ex De Vis, non. Lacépède.*

D.i(procumbent),viii/15; A.i,iii/14; P.19; V.i/5; C.16. L.lat. c.60.

Head (15 mm.) 2.8 in length to hypural joint (43); depth (21) 2.04 in same. Eye (4.5) 3.3, interorbital (5) 3.0, snout (5) 3.0, second dorsal spine (9) 1.6, and second anal spine (8) 1.9 in the head.

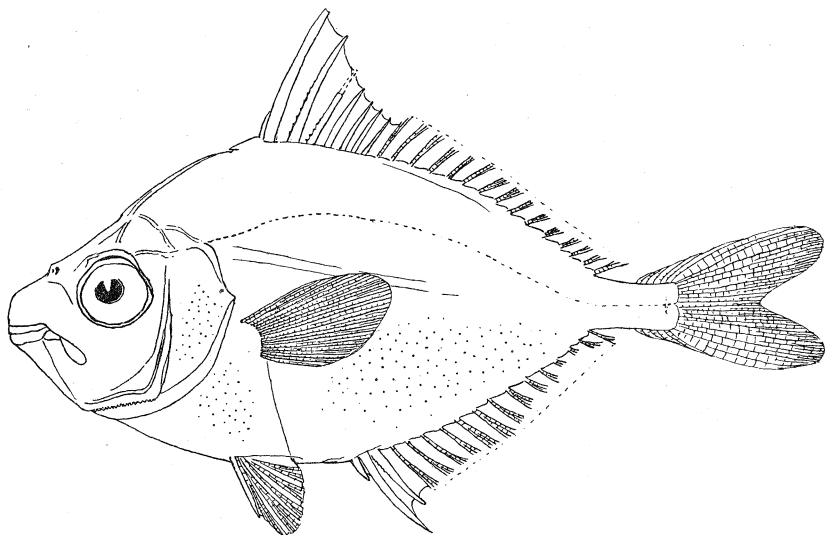


Figure 2.

Head longer than high and broadest just behind the eyes, its upper profile not so steep as the lower. Eye large, outline of orbital margin somewhat pyriform. Two nostrils situated on a prominence before each eye, the posterior nostril the larger. Snout blunt, its distance from the eye equal to interorbital width. A median ridge and two lateral ones are situated on the interorbital and converge into a spine-like nuchal ridge which extends almost to the procumbent dorsal spine. Supraorbital ridge smooth. Opercles entire excepting the lower preopercular limb which is finely serrated. Preopercular stay prominent. Mouth subhorizontal; maxillary extending to below posterior edge of eye. Minute pointed teeth in each jaw.

Body deep, much compressed; dorsal profile slightly more convex than the ventral, which is more evenly rounded. The type specimen is denuded of scales. Lateral line extending from shoulder to tail, subhorizontal anteriorly and gently curved posteriorly to

below the soft dorsal when it runs along the side of the caudal peduncle. A silver line extends from the base of the last pectoral ray to near the vent.

Dorsal with a procumbent spine followed by the main spinous fin. The first spine is small and originates in advance of the vertical of the origin of the anal. Second dorsal spine curved and compressed, slightly longer than the second anal spine and more than half length of head. Remaining dorsal spines decreasing in height posteriorly; the third and fourth are serrated anteriorly as is also the third anal spine. Base of soft dorsal subequal to that of anal. Pectorals rounded, longer than second dorsal spine. Ventrals small, reaching half-way along the procumbent anal spine when adpressed. Caudal broad, distinctly forked: the lobes are about equal to the head without snout.

De Vis gave the colour as "Uniform silvery, or with the back tinged with pink." The specimen here described now shows no coloration but there are punctations widely spaced on the opercles and lower half of the sides of the thorax and body.

Described and figured from the type of *Equula argentea* De Vis, a specimen 43 mm. long from snout to hypural joint. De Vis' original description was based on two specimens but as this is the only one now preserved in the Queensland Museum, it may be designated the holotype. Queensland Museum regd. No. I.13/1699.

Locality.—Cape York, North Queensland; collected by Kendall Broadbent.

Family CALLIONYMIDÆ.

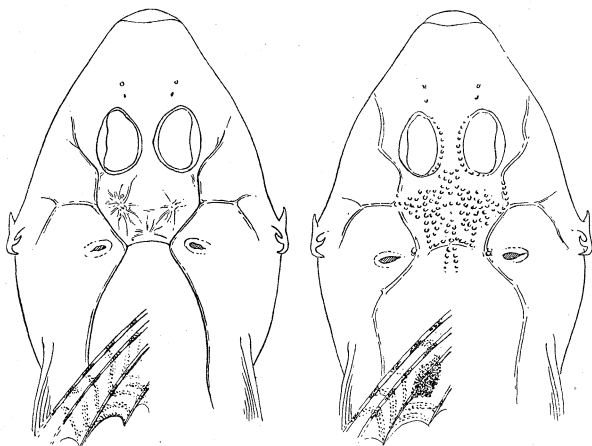
CALLIONYMUS LIMICEPS *Ogilby*.

(Figs. 3-4.)

- 1908 *Callionymus limiceps* Ogilby, Ann. Qld. Mus. ix, Oct. 14, 1908, pp. 4 and 35. Moreton Bay, S. Queensland. Types in Queensland Museum, Brisbane.
- 1923 *Callionymus limiceps* McCulloch, Rec. Austr. Mus. xiv, 1923, pp. 7 and 9, pl. iii, fig. 1, *a-d*.
- 1926 *Callionymus limiceps typica* McCulloch, Biol. Res. Endeavour v, 4, 1926, pp. 195 and 203.
- 1926 *Callionymus limiceps sublavis* McCulloch, *loc. cit.*, pp. 195 and 204. Off Hummocky Island, Queensland. Type on deposit in Austr. Mus.

A specimen was caught by Captain L. Comtesse in the Dredge "Triton" over Sow and Pigs Reef, Port Jackson, 12th April, 1929, when Messrs. F. A. McNeill and Melbourne Ward secured it for the

Australian Museum (No. IA.3843). This Queensland species has not hitherto been recorded from New South Wales and seems to support Iredale's contention²⁹ that a tropical faunula is still in existence in Port Jackson beyond the littoral zone.



Figures 3 and 4.

The opportunity is taken of presenting herewith figures of the armature of the head in *Callionymus limiceps* (fig. 4) and the type of McCulloch's variety *sublævis* (fig. 3) from off Hummocky Island, Queensland (No. E.6715).

Family GERRIDÆ.

GERRES ARGYREUS (*Bloch and Schneider*).

(Fig. 5.)

- 1801 *Cichla argyrea* Bloch and Schneider, Syst. Ichth., 1801,* p. 344.
Ex Sciæna argyrea Forster MS. Tanna, New Hebrides.
- 1824 ? *Gerres waigiensis* Quoy and Gaimard, Voy. Uranie and
 Physic., 1824, p. 292. Waigiou and Rawak.
- 1829 *Gerres argyreus* Cuvier, Règn. Anim. ed. 2, ii, April, 1829, p.
 188, footnote. *Id.*, Cuvier and Valenciennes, Hist. Nat. Poiss.
 vi, Sept., 1830, p. 478.
- 1844 *Sciæna argyrea* Forster, Descr. Anim. maris Austr. (*ed.* Lich-
 tenstein), 1844, p. 291. Tanna; Aug. 15, 1774.
- 1862 *Gerres argyreus* Günther, Cat. Fish. Brit. Mus. iv, 1862, p. 263.

²⁹ Iredale.—Austr. Zoologist, v, 4, 1929, p. 337.

1913 ?*Xystæma darnleyense* Ogilby, Mem. Qld. Mus. ii, Dec. 10, 1913, p. 86, pl. xxiii. Darnley Island, Torres Strait, Queensland. Holotype in Qld. Museum.

The accompanying figure has been prepared from a virtual topotype. This specimen (Austr. Mus. No. I.12014) is 163 mm. long from snout to end of middle caudal rays and was collected in the New Hebrides about eighteen years ago by officers of H.M.S. "Pegasus." Messrs. Troughton and Livingstone collected the species at Naunaha Island and Peu, Vanikoro, Santa Cruz Group. Their specimens agree with the topotypical ones of this well-known species in having D.ix/10; A.iii/7. Eye longer than snout, equal to second anal spine. Height one-third of total length, and more than length of head. Pectoral not quite reaching anal origin.

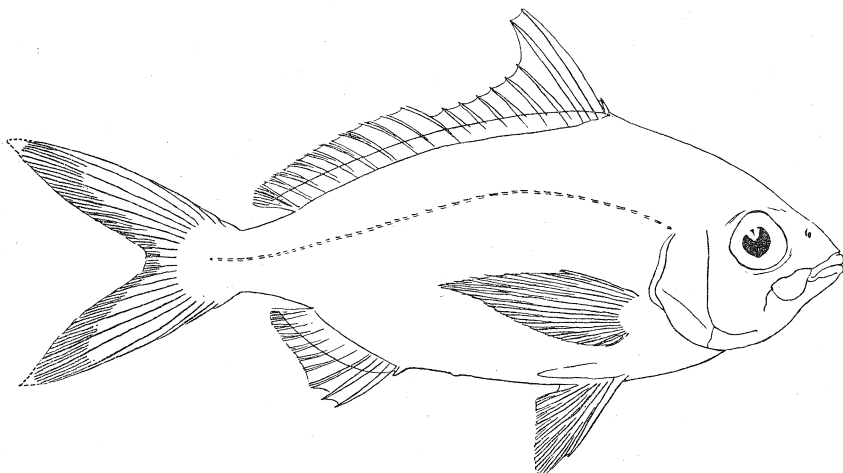


Figure 5.

Gerres waigiensis and *Xystæma darnleyense* are so closely allied to *Gerres argyreus* that I am inclined to regard them as synonyms of it.

Family SYNGNATHIDÆ.

CORYTHOICHTHYS SAUVAGEI, *nom. nov.*

1879 *Syngnathus modestus* Sauvage, Bull. Soc. Philom. Paris (7) iii, 1879, p. 209 (6 of reprint). Noble Island, Australia. Type in Paris Museum. Name preoccupied by *S. modestus* Günther 1870.

1909 *Syngnathus modestus* Duncker, Faun. S.W. Austr. ii, 15, Pisces i, 1909, p. 246.

1915 *Syngnathus modestus* Duncker, Jahrb. Hamburg Wiss. Anst. xxxii, 1915, p. 86.

1925 *Corythoichthys pæcilolæmus* McCulloch and Whitley, Mem. Qld. Mus. viii, 2, 1925, p. 137. Based on Sauvage 1879. Not *Syngnathus pæcilolæmus* Peters 1869.

Syngnathus modestus Sauvage is preoccupied by *S. modestus* Günther.³⁰ Duncker and later authors have regarded Sauvage's species as being related to or synonymous with *Syngnathus pæcilolæmus* Peters³¹ from Adelaide. Sauvage's fin-formulæ disagree with those of South Australian specimens,³² however, and, as I am unable to reconcile the Queensland species with any of the forms known to me, it becomes necessary to rename it. I therefore propose *Corythoichthys sauvagei* for *Syngnathus modestus* Sauvage, preocc. The type-locality is Noble Island which lies near the Howick Group, Great Barrier Reef, Queensland.

The following is a copy of the original description :

"D.28; A.5; C.6; P.15. Dorsale partant de l'avant-dernier anneau du tronc et se prolongeant sur cinq anneaux de la queue. Longueur de la tête contenue près de sept fois dans la longueur totale du corps, bien plus longue que la dorsale; museau allongé et pointu; région interorbitaire bien plus longue que la région postorbitaire; 47 anneaux à la queue, 18 au tronc. Caudale courte, un peu plus longue seulement que le diamètre de l'orbite. Couleur brune uniforme. Longueur totale 0,100; longueur de la queue 0,060; longueur de la tête 0,015; longueur du museau 0,008; de la région postoculaire 0,006.

Un mâle venant de Noble Island, Australie, par M. de Castelnau."

Family ACINACEIDÆ.

1905 *Lemnisomidæ* Fowler, Proc. Acad. Nat. Sci. Philad. 1904 (1905), p. 767.

1911 *Ruvettidæ* Snyder, Proc. U.S. Nat. Mus. xl, May, 1911, p. 527.

1923 *Gempylidæ* Jordan, Classif. Fish., 1923, p. 180, and most modern authors.

The earliest described genus in this family appears to be *Acinacea* Bory de St. Vincent,³³ so the family name is changed accordingly.

Genus LUCOSCOMBRUS Van der Hoeven 1858.

I have not seen Van der Hoeven's "Handbuch der Dierkunde," published in Amsterdam in 1850, but recently secured a copy of

³⁰ Günther.—Cat. Fish. Brit. Mus. viii, 1870, p. 166. Hab.?

³¹ Peters.—Monatsb. Akad. Wiss. Berlin, 1868 (1869), p. 458.

³² Waite and Hale.—Rec. S. Austr. Mus. i, 4, 1921, p. 295, fig. 39.

³³ Bory de St. Vincent.—Voy. îles Afriq. i, 1804, p. 93; *vide* Sherborn, Index Anim., and Jordan, Gen. Fish. ii, 1919, p. 170. Name emended to *Acimaces* by Agassiz, Nomencl. Zool., 1846, Index Univ.

Clark's English translation of the second Dutch edition. Several new genera and species are named therein, and one of these, *Lucoscombrus*,³⁴ seems to have been overlooked by ichthyologists. The following is a copy of the definition of this genus:

"*Lucoscombrus mihi* (*Gempylus* and *Thyrsites* Cuv.). Body elongate, compressed, with scales none or conspicuous only at the end of tail and along the lateral line. Teeth compressed, acute, unequal, in a single row in jaws, the middle of upper jaw much larger than the rest. Branchiostegous membrane with seven rays. Head elongate, depressed above; lower jaw produced beyond upper. Ventral fins thoracic. Dorsal fins two contiguous, and several free finlets behind the second.

Gempylus Cuv. Vomer and palate-bones edentulous. Ventral fins very small.

Sp. *Lucoscombrus serpens*, *Scomber serpens* SOLANDER;—*Lucoscombrus coluber*, *Gempylus coluber* Cuv. et VAL. Poiss. VIII. Pl. 221, &c.

Gempylus approaches *Lepidopus* by its much elongated body.

Thyrsites Cuv. Teeth in vomer and palate-bones few, in a single row, conical. Ventral fins small or moderate.

Sp. *Lucoscombrus atun*, *Scomber atun* LAC., *Thyrsites atun* Cuv., Cuv. et VAL. Poiss. VIII. Pl. 219, Cuv. R. Ani., éd. ill., Poiss. Pl. 49, fig. 1; a fish from the sea around South Africa, very common at the Cape of Good Hope, and known to the Dutch colonists as a palatable and very cheap food under the name of *Snoek* (Pike). This species attains a length of more than 3'."

In order to settle the taxonomic status of *Lucoscombrus*, I formally select *Lucoscombrus serpens* Van der Hoeven = *Gempylus serpens* Cuvier³⁵ as the logotype of *Lucoscombrus*, thereby making it an absolute synonym of *Gempylus* Cuvier³⁶ and *Lemnisoma* Lesson.³⁷ Cuvier's name appeared slightly earlier than Lesson's, not later as noted by Fowler,³⁸ whose action in using *Lemnisoma* was, however, justifiable at the time his paper was written.

Lucoscombrus atun Van der Hoeven = *Scomber atun* Lacépède³⁹ = *Thyrsites atun* (Euphrasen).⁴⁰

Genus REXEA Waite 1911.

1911 *Rexea* Waite, Proc. N. Zeal. Inst. 1910, ii (publ. Jany. 18, 1911), p. 49. Orthotype, *R. furcifera* Waite = *Gempylus solandri* Cuv. and Val.

1911 *Jordanidia* Snyder, Proc. U.S. Nat. Mus. xl, May 26, 1911, p. 527. Orthotype, *J. raptorica* Snyder.

³⁴ Van der Hoeven.—Handbook of Zoology (trans. Clark), ii, 1858, p. 161.

³⁵ Cuvier.—Règn. Anim., ed. 2, ii, April, 1829, p. 200. Jamaica (Sloane).

Cuv. ³⁶ Cuvier.—Règn. Anim., ed. 2, ii, April, 1829, p. 200. Haplotype, *G. serpens*

³⁷ Lesson.—Voy. Coquille, Zool. ii, 1, 1830, p. 160.

³⁸ Fowler.—Proc. Acad. Nat. Sci. Philad. 1904 (1905), p. 767 and footnote.

³⁹ Lacépède.—Hist. Nat. Poiss. v, 1803, p. 679.

⁴⁰ Euphrasen.—K. Vet. Acad. Nya Handl. xii, 1791, p. 315, as *Scomber* (*vide* Sherborn).

- 1911 *Rexea* Waite, Rec. Canterbury Mus. i, 3, June 24, 1911, p. 235. Orthotype, *R. furcifera* Waite.
- 1913 *Jordanidia* Jordan, Tanaka, and Snyder, Cat. Fish. Japan in Journ. Coll. Sci. Univ. Tokyo xxxiii, 1913, p. 124. Type, *J. raptatoria* (sic) Snyder.
- 1915 *Jordanidia* McCulloch, Biol. Res. Endeavour iii, 3, 1915, p. 150.
- 1923 *Rexia* Jordan, Classif. Fish., 1923, p. 180. *Errore pro Rexea*.

The generic name *Rexea* was first proposed by Waite in the Proceedings of the New Zealand Institute, 1910, part ii, issued January 18, 1911, not the current Transactions and Proceedings, vol. xliii. Thus it has priority over *Jordanidia* Snyder, May, 1911. Most authors have regarded the original reference to *Rexea* as Rec. Canterbury Mus. i, 1911, but examination of that work shows a quotation of the earlier designation.

REXEA SOLANDRI (*Cuvier and Valenciennes*).

(Plate xxxiii, fig. 2.)

- 1832 *Gempylus solandri* Cuv. and Val., Hist. Nat. Poiss. viii, "1831" = January, 1832, p. 215. *Ex Scomber macrophthalmus* Solander MS. "New Holland" = Bay of Islands, New Zealand; 2/12/1769.
- 1843 *Gempylus solandri* Richardson, Ann. Mag. Nat. Hist. xi, Jan., 1843, p. 24. *Ex Scomber macropt[h]almus* Solander MS. New Zealand.
- 1843 *Gempylis solandris* Richardson, Rept. 12th. meet. Brit. Assn. Adv. Sci., 1842 (publ. late 1843), p. 20. New Zealand (Solander).
- 1873 *Thyrsites micropus* McCoy, Ann. Mag. Nat. Hist. (4), xi, May 1, 1873, p. 338. Tasmania. Type in National Museum, Melbourne, seen.
- 1874 *Thyrsites solandri* Allport, Monthly Notices Pap. Proc. Roy. Soc. Tasm., 1873 (publ. 1874), p. 25 (notes identity of *micropus* and *solandri*).
- 1874 *Thyrsites micropus* McCoy, Monthly Notices Pap. Proc. Roy. Soc. Tasm., 1873 (1874), p. 50 (maintains that *micropus* and *solandri* are distinct [but confuses the latter with *Thyrsites atun* Euphrasen]).
- 1879 *Trichiurus solandri* Sauvage, Arch. Zool. Exper. viii, 1879, p. 28. Name only. New Holland.
- 1886 *Thyrsites solandri* Saville-Kent, Rept. Fish. Dept. Tasmania, 1886, p. 14 (occurrence in Tasmania).

- 1911 *Rexea furcifera* Waite, Proc. N. Zealand Inst. 1910, ii, Jan. 18, 1911, p. 49. New Zealand.
- 1914 *Jordanidia solandri* McCulloch, Abstr. Proc. Linn. Soc. N. S. Wales, July 29, 1914 (*Rexea furcifera* = *J. solandri*).
- 1915 *Jordanidia solandri* McCulloch, Biol. Res. Endeavour iii, 3, 1915, p. 150.

Apart from giving the above elaboration of the bibliography of *Rexea solandri*, the Tasmanian Kingfish or Tikati, I have little to add to the detailed account of this species given by McCulloch (*loc. cit.*, 1915). I present, however, a figure of the holotype of *Thyrsites micropus* McCoy, which is a mounted skin in the National Museum, Melbourne (No. 28841). I am indebted to Mr. J. A. Kershaw who allowed me to examine the specimen under his charge, and to Mr. A. Musgrave for the photograph he made of it.

Rexea solandri is rare in New South Wales, being occasionally trawled in our southern waters. Notes on its occurrence in New Zealand have been given by Phillipps.⁴¹

Family CARANGIDÆ.

MEGALASPIS CORDYLA (*Linnaeus*).

(Plate xxxiii, fig. 1.)

- 1758 *Scomber cordyla* Linnaeus, Syst. Nat., ed. 10, 1758, p. 298 (not synonymy).
- 1927 *Megalaspis cordyla* Whitley, Rec. Austr. Mus. xv, 5, 1927, p. 298, pl. xxiv, fig. 2 (references and synonymy).

The accompanying photograph, for which I am indebted to Mr. D. G. Stead, represents one of two specimens caught in Port Jackson in 1910. Numbers of this species were said to be present at the time. This northern species is thus evidently an occasional visitor to New South Wales waters.

TRACHURUS DECLIVIS (*Jenyns*).

(Plate xxxi, fig. 6.)

- 1841 *Caranx declivis* Jenyns, Voy. Beagle, Zool., iii, Fish. 1841, p. 68, pl. xiv. Princess Royal Harbour, King Georges Sound, West Australia.
- 1915 *Trachurus declivis* McCulloch, Biol. Res. Endeavour iii, 3, 1915, p. 125, pl. xxxiv, fig. 2.

⁴¹ Phillipps.—N.Z. Journ. Sci. Tech. i, 1918, p. 269; *ibid.* iv, 1921, pp. 118 and 124; and Phillipps and Hodgkinson; *ibid.* v, 1922, p. 94.

The Eastern Australian form may be found to differ slightly from the typical *Trachurus declivis* as collected by Charles Darwin in West Australia when large series from both regions can be compared, but, with the material at my disposal, I am unable to distinguish them satisfactorily even as subspecies.

The painting here reproduced was made by the late Allan R. McCulloch from a Port Jackson specimen in October, 1902. Young examples of this species have been found sheltering under jelly-fishes.

Family CEPOLIDÆ.

CEPOLA AUSTRALIS Ogilby.

(Plate xxx, fig. 4.)

1899 *Cepola australis* Ogilby, Proc. Linn. Soc. N. S. Wales xxiv, 1899, pp. 184-5. Port Jackson, New South Wales. Holotype in Austr. Museum (No. IA.3492).

1914 *Cepola australis* McCulloch, Biol. Res. Endeavour ii, 3, 1914, p. 109, pl. xxxiv, fig. 1.

A specimen, 241 mm. in total length, from Port Jackson, is shown in its natural colour in the figure reproduced herewith from a painting made in April, 1902, by A. R. McCulloch. It is one of two examples caught in Watson's Bay, near Sydney; Austr. Mus. No. I.5262. The species is evidently rare.

Family LETHRINIDÆ.

LETHRINUS DEVISIANUS, nom. nov.

1884 *Lethrinus ornatus* De Vis, Proc. Linn. Soc. N. S. Wales ix, 3, No. 29, 1884, p. 458. Wide Bay, Queensland. Type in Queensland Museum.

De Vis' name is preoccupied by *Lethrinus ornatus* Cuvier and Valenciennes⁴² so *Lethrinus devisianus* is proposed as a substitute name, the holotype of the species being De Vis' specimen in the Queensland Museum, Brisbane.

Family MULLIDÆ.

MULLOIDICHTHYS gen. nov.

1849 *Mulloides* Bleeker, Verh. Bat. Gen. xxii, 1849, Percoid., p. 6. Logotype, *Mullus flavolineatus* Lacépède. Not *Mulloides* Richardson 1843.

⁴² Cuvier and Valenciennes.—Hist. Nat. Poiss. vi, Sept., 1830, p. 310. *Ex* Kuhl and Van Hasselt MS. Java.

Mulloides Bleeker is preoccupied by *Mulloides* Richardson,⁴³ the haplotype of which is the New Zealand *Centropistes sapidissimus* Richardson. Thus *Mulloides* Bleeker (*non* Richardson) requires a new name and *Mulloidichthys* is proposed as a substitute, with *Mullus flavolineatus* Lacépède⁴⁴ as orthotype.

The three New South Wales species of the family Mullidæ are usually only caught in their immature stages in Sydney Harbour. In scientific literature they are usually separated by their dental characters which are often difficult to distinguish in small specimens, but Mr. McCulloch's paintings of Port Jackson specimens, reproduced here, will render their identification an easy matter.

UPENEUS SIGNATUS *Günther*.

(Plate xxxi, fig. 1.)

1867 *Upeneus signatus* Günther, Ann. Mag. Nat. Hist. (3) xx, 1867, p. 59. Sydney. Type in British Museum (Nat. Hist.).

1903 *Upeneus signatus* Tosh, Parliam. Rept. Mar. Dept. Qld., 1902-3 (1903), p. 19, pl. iii, fig. 2 (Southport, near Brisbane, Q.).

The figured specimen was caught by the late A. R. McCulloch at Elizabeth Bay in February, 1901. This species has a single row of teeth in the jaws and none on the vomer and palatines and therefore enters the genus *Upeneus* Cuv. and Val., *sensu lato*. The maxillary reaches nearly to the level of the anterior orbital margin and scales extend along top of head to level of nostrils.

Specimens are in the Australian Museum from Botany Bay and Port Jackson, New South Wales, and Lord Howe Island.

UPENEOIDES JEFFI (*Ogilby*).

(Plate xxxi, fig. 3.)

1846 ? *Upeneus tragula* Richardson, Rept. 15th meet. Brit. Assn. Adv. Sci., 1845 (publ. late 1846), p. 220. Canton.

1908 *Pseudupeneus jeffi* Ogilby, Proc. Roy. Soc. Qld. xxi, August, 1908, p. 19. Brisbane River. Type in Queensland Museum.

The Bar-tailed Red Mullet of Australia has been called *Upeneus tragula* by authors but that species was originally described from Canton, and has been grouped with such nominal forms as the extralimital *U. variegatus* Bleeker and *U. kiusiuana* Steindachner and Döderlein. As the accounts of these do not apply so well to Australian specimens as Ogilby's description of *Pseudupeneus jeffi*, I

⁴³ Richardson.—Rept. 12th meet. Brit. Assn. Adv. Sci., 1842 (publ. late 1843), p. 16. *Ex* Solander MS.

⁴⁴ Lacépède.—Hist. Nat. Poiss. iii, 1802, pp. 384 and 406. Mauritius.

am using that specific name for the New South Wales species. A toptotypical specimen of *U. jeffi*, $9\frac{3}{8}$ inches long, from Moreton Bay (No. I.7732) has been compared by me with New South Wales specimens. It has teeth on jaws, vomer, and palatines; head scaly in advance of nostrils; and maxillary almost reaching vertical of anterior orbital margin.

Young specimens, up to five inches in length, are in the Australian Museum from Port Jackson, Parramatta River, and Shoalhaven River, New South Wales. One of these forms the subject of the accompanying figure which was made by the late A. R. McCulloch from a specimen collected by him in Elizabeth Bay, Port Jackson, in February, 1901 (No. I.4769). I have also examined specimens, six to nine inches long, from Moreton Bay, Queensland, south-eastern New Guinea, and Papua. Some small ones were collected by Dr. Paradise at Sir Edward Pellew Islands, Gulf of Carpentaria. These northern forms appear to be darker than the southern ones, but fresh specimens are needed before they can be differentiated.

UPENEICHTHYS POROSUS (Cuv. and Val.)

(Plate xxxi, fig. 2.)

1829 *Upeneus porosus* Cuvier and Valenciennes, Hist. Nat. Poiss. iii, April, 1829, p. 455. New Zealand (type-locality by present designation), and Tasmania.

The specimen figured was collected with the two preceding at Elizabeth Bay by Mr. McCulloch. Small specimens appear to be common in Sydney Harbour in late summer and autumn. I designate New Zealand as the type locality of this species as it seems possible that the New South Wales form may be distinct, but I have no specimens from New Zealand for comparison.

Family LABRIDÆ.

PICTILABRUS LATICLAVIUS (Richardson).

(Plate xxx, fig. 2.)

1839 *Labrus laticlavius* Richardson, Proc. Zool. Soc. Lond. vii, Nov., 1839, p. 99; Zool. Voy. Erebus and Terror, Fish. 1848, p. 128, pl. lvi, figs. 3-6. Port Arthur, Tasmania. Type in British Museum.

1881 *Labrichthys labiosa* Macleay, Proc. Linn. Soc. N. S. Wales, vi, 1, July, 1881, p. 88, pl. i, fig. 2. Port Jackson.

The figured specimen, 115 mm. in total length, was caught at Long Bay, near Sydney, New South Wales; August, 1908. Other specimens in the Australian Museum from this State came from Mosman, Botany Bay, Maroubra, and Narooma.

*Family BODIANIDÆ.*CHÆRODON AMBIGUUS *Ogilby.*

(Plate xxxiii, fig. 4.)

1910 *Chærodon ambiguus* Ogilby, New Fish. Qld. Coast, Dec. 20, 1910, p. 100. Off Double Island Point, Queensland; 33 fathoms.

A cotype of this species in the Australian Museum (No. I.12535) is here figured. This is a specimen, $6\frac{3}{4}$ inches long, which was received in exchange from the Amateur Fishermen's Association of Queensland in August, 1912.

CHÆRODON MONOSTIGMA *Ogilby.*

(Plate xxxiii, fig. 3.)

1910 *Chærodon monostigma* Ogilby, New Fish. Qld. Coast, Dec. 20, 1910, p. 102. Off Pine Peak, Queensland; 26 fathoms.

A cotype of this species (No. I.12518) is in the Australian Museum, having been received at the same time as the preceding species. It is five inches long and differs from *C. ambiguus* mainly in having rows of scales on the cheeks and a dark blotch on the dorsal fin.

*Family AMPHIPRIONIDÆ.*AMPHIPRION MCCULLOCHI *Whitley.*

(Plate xxxiv, fig. 1.)

1929 *Amphiprion mccullochi* Whitley, Mem. Qld. Mus. ix (in press).

The accompanying figure, taken from the holotype of this species, was prepared too late for inclusion in my paper on "Some Fishes of the Order Amphiprioniformes," quoted above, so the opportunity is taken to reproduce it here.

Loc.—Lord Howe Island.

*Family POMACENTRIDÆ.**Subfamily PARMINÆ.*PARMA MCCULLOCHI *Whitley.*

(Plate xxxiv, fig. 2.)

1929 *Parma mccullochi* Whitley, Mem. Qld. Mus. ix (in press).

The figure represents the holotype of this species which, like that of the last, is preserved in the Australian Museum. I am indebted to Miss Joyce K. Allan for illustrating this and the preceding

species and only regret that I neglected to have these excellent figures prepared sooner so that they could have appeared in the paper quoted.

Loc.—Rottneest Island, West Australia.

Family AMPHACANTHIDÆ.

AMPHACANTHUS VIRGATUS *Cuv. and Val.*

- 1835 *Amphacanthus virgatus* Cuvier and Valenciennes, *Hist. Nat. Poiss.* x, Sept., 1835, p. 133. Java.
- 1844 *Amphacanthus bifasciatus* Schlegel and Müller, *Verh. Nat. Ges. Ned. overz. bezitt., Zool. (Pisc.)*, 1844, p. 14. Museum name. Batavia.
- 1844 *Amphacanthus virgatus* Schlegel and Muller, *loc. cit.*, pp. 11 and 14, pl. iii, fig. 1.
- 1850 *Amphacanthus virgatus* and *bifasciatus* Bleeker, *Verh. Bat. Gen.* xxiii, 1850, *Teuth.*, pp. 7 and 11.
- 1861 *Teuthis virgata* Günther, *Cat. Fish. Brit. Mus.* iii, 1861, pp. 313 and 323.
- 1865 *Amphacanthus virgatus* Kner, *Reise Novara, Zool.*, i, *Fische*, 1865, p. 209.
- 1875 *Teuthis virgata* Day, *Fish. India* i, Aug., 1875, p. 166, pl. xl, fig. 3.
- 1910 *Siganus virgatus* Jordan and Richardson, *Check-List Fish. Philippine Archip.* 1910, p. 42.
- 1911 *Amphacanthus virgatus* and *Teuthis virgata* Weber and Beaufort, *Fish. Indo-Austr. Archip.* i, 1911, pp. 63 and 394 (references).

Two specimens (Austr. Mus. Nos. IA.3596-7) from Port Darwin, North Australia, are the first to be recorded from Australia. Mr. L. B. Wilson, who collected them in November, 1927, states that they were caught in a fish trap in six fathoms of water with beef-bone bait. He had never caught this species by line, but the natives go on the reefs at low water during the night and attract the fishes by torchlight; they can then be speared at the surface. Mr. Wilson says he has eaten examples of this species. Other specimens are in the Australian Museum from the Philippine Islands and the Malay Archipelago.

Family CEPHALACANTHIDÆ.

- 1888 *Dactylopteridæ* Gill, *Amer. Nat.* xxii, 1888, pp. 356-358.
- 1908 *Cephalacanthidæ* Jordan and Richardson, *Proc. U.S. Nat. Mus.* xxxiii, 1908, p. 663.

- 1913 *Dactylopteridæ* Regan, Ann. Mag. Nat. Hist. (8) xi, 1913, p. 183.

Genus CEPHALACANTHUS Lacépède 1802.

- 1802 *Cephalacanthus* Lacépède, Hist. Nat. Poiss. iii, 1802, p. 323. Haplotype, *C. spinarella* Lacépède = *Gasterosteus spinarella* Linnæus. Spelled *Cephalocanthus* by Swainson, 1839.
- 1802 *Dactylopterus* Lacépède, Hist. Nat. Poiss. iii, 1802, p. 325. Logotype *D. pirapeda* Lacépède = *Gasterosteus spinarella* Linnæus. Preoccupies *Dactyloptera* Bonaparte 1841, another genus of fishes.
- 1815 *Cephalacanthia* Rafinesque, Analyse Nature 1815, p. 85. Substitute name for *Cephalacanthus* Lacépède (*vide* Jordan, Gen. Fish. i, 1917, p. 89).
- 1839 *Dactylophorus* Swainson, Nat. Hist. Classif. Fish. Amphib. Rept. ii, July, 1839, pp. 55, 179, and 262. Error for *Dactylopterus* Lacépède. Logotype, by present designation, *D. volitans* Swainson = *Trigla volitans* Linnæus = *Gasterosteus spinarella* Linnæus. Preoccupies *Dactylophora* De Vis 1884, another genus of fishes.
- 1846 *Cephalacanthia* Agassiz, Nomencl. Zool. Index Univ. 1846, p. 71. Emendation for *Cephalacanthia* Rafinesque.
- 1854 *Gonocephalus* Gray, Cat. Fish. coll. Gronow Brit. Mus. 1854, p. 105. Logotype *G. macrocephalus* Gray = *Gasterosteus spinarella* Linnæus. Preoccupied by *Gonocephalus* Kaup 1825, a genus of Reptiles.

Cephalacanthus is the larval form of the Flying Gurnard, *Dactylopterus*, but the name has page-priority in Lacépède's "Histoire Naturelle des Poissons." Two species of *Dactylopterus* were recognised by Lacépède, *D. pirapeda* and *D. japonicus*, but the latter is a synonym of *Lepidotrigla alata* (Gmelin). *Gonocephalus* Gray, from the MS. of Gronow, was not published until 1854, by which time it was preoccupied. Two species were described, *G. macrocephalus* and *G. microcephalus*, but both fall as synonyms, the first of *Gasterosteus spinarella* Linnæus and the second of *Dactylopterus orientalis* Cuvier.

CEPHALACANTHUS SPINARELLA (Linnæus).

Atlantic Flying Gurnard.

- 1648 "Pirabebe" Marcgrave, Hist. Brasil iv, 1648, p. 162. Brazil (*vide* Jordan and Evermann, 1898).
- 1738 "*Trigla capite parum aculeata*" Artedi, Ichth. iii, Gen. Pisc., 1738, p. 44, syn. 73. Mediterranean, etc. (not seen).

- 1754 "*Pungitius pusillus*" Linnæus, Mus. Adolph. Frid. i, 1754, p. 74, pl. xxxii, fig. 5 (*vide* Lütken, 1880).
- 1758 *Gasterosteus spinarella* Linnæus, Syst. Nat. ed. 10, 1758, p. 297. "Indies" = Guiana or Surinam (*vide* Cuvier, 1829). Based on *Pungitius*, Mus. Ad. Fr. i, p. 74, pl. 32, f. 5. Young specimen.
- 1758 *Trigla volitans* Linnæus, Syst. Nat. ed. 10, 1758, p. 302. *Ex* Artedi and Gronow. Mediterranean, etc.
- 1763 "*Trigla pinna singulari pinnis pectoralibus*" Gronow, Zoophylacium, 1763, p. 85, No. 285. Not refs. to East Indian species, which is *Dactyloptena orientalis* (Cuvier).
- 1766 *Gasterosteus spinarella* Linnæus, Syst. Nat. ed. 12, 1766, p. 492.
- 1766 *Trigla volitans* Linnæus, Syst. Nat. ed. 12, 1766, p. 498. Adds refs. to Browne's Jamaica 453, Marcgrave, Brasil 163, and to Seba, but latter is perhaps *Dactyloptena orientalis* (Cuvier).
- 1781 *Trigla volitans* Meuschen, Index Gron. Zoophyl. 1781, Pisces. Based on Zoophylacium, No. 285.
- 1788 *Trigla volitans* Bonnaterre, Tabl. Encycl. Meth., Ichth. 1788, p. 147, No. 12, pl. lxi, fig. 239 ("L'Océan et la Méditerranée").
- 1789 *Gasterosteus spinarella* Gmelin, Syst. Nat. (Linn.), ed. 13, 1789, p. 1327.
- 1789 *Trigla volitans* Gmelin, Syst. Nat. (Linn.), ed. 13, 1789, p. 1346.
- 1792 "*Trigla tentabunda*" Walbaum, Piscium (Artedi) iii, 1792, p. 362. Non-binom. After *Cataphractus* Klein, Missus, which is after Catesby, Fish. Carolina iv, 1731, p. 44, pl. xiv, f. 1 (*vide* Jordan and Evermann, 1898).
- 1797 *Trigla volitans* Bloch, Ichtyologie x, 1797, p. 93, pl. cccli (refs. and synon.).
- 1801 *Trigla volitans* Bloch and Schneider, Syst. Ichth. 1801, p. 12.
- 1801 *Trigla fasciata* Bloch and Schneider, Syst. Ichth. 1801, p. 16, pl. iii, fig. 1. After *Corystion* Klein, Missus. No locality given.
- 1801 *Gasterosteus?* *spinarella* Bloch and Schneider, Syst. Ichth. 1801, p. 124.
- 1802 *Cephalacanthus spinarella* Lacépède, Hist. Nat. Poiss. iii, 1802, p. 323. "l'Inde" (= Surinam, *vide* Cuvier).
- 1802 *Dactylopterus pirapeda* Lacépède, Hist. Nat. Poiss. iii, 1802, p. 326. Mediterranean and open sea.

- 1803 *Gasterosteus spinarella* Shaw, Gen. Zool. iv, 2, 1803, p. 608.
- 1803 *Trigla volitans* Shaw, Gen. Zool. iv, 2, 1803, p. 622.
- 1810 *Trigla corvus* Rafinesque, Caratteri, 1810, p. 32, pl. vi, fig. 1. Sicily (not seen).
- 1815 *Polynemus sexradiatus* Mitchell, Trans. Lit. Phil. Soc. i, 1815, pl. iv, fig. 10. New York (*vide* Jordan and Evermann, 1898).
- 1818 *Callionymus pelagicus* Rafinesque, Amer. Month. Mag. Jan., 1818, p. 205. Atlantic Ocean (*vide* Jordan and Evermann, 1898).
- 1825 *Trigla corvus* Risso, Mem. Soc. Linn. Paris iii, 1825, p. 33 (*vide* Sherborn).
- 1826 *Trigla corvus* Risso, Hist. Nat. Eur. Merid. iii, 1826, p. 398.
- 1826 *Dactylopterus pirapeda* Risso, Hist. Nat. Eur. Merid. iii, 1826, p. 404.
- 1829 *Gasterosteus spinarella* Cuvier, Règn. Anim. ed. 2, ii, April, 1829, p. 162. Linnæus' "Indies" locality corrected to Guiana.
- 1829 *Trigla volitans* Cuvier and Valenciennes, Hist. Nat. Poiss. iv, Nov., 1829, p. 117.
- 1829 *Cephalacanthus spinarella* Cuvier and Val., Hist. Nat. Poiss. iv, 1829, p. 138, pl. lxxvii. Correct Linnæus' "Indies" locality to Surinam.
- 1836 *Cephalacanthus spinarella* Cuvier, Règn. Anim., discip. ed., 1836, p. 63, pl. xx, fig. 4. Guiana; Equatorial America, Atlantic shores.
- 1839 *Cephalacanthus* Swainson, Nat. Hist. Class. Fish. Amphib. Rept. ii, July, 1839, p. 55, fig. 10. No locality given.
- 1839 *Dactylophorus volitans, occidentalis, blochii, tentaculatus, fasciatus, and trigloides* Swainson, Nat. Hist., etc., July, 1839, p. 262. Names only.
- 1839 *Dactylopterus occidentalis* Swainson, Nat. Hist. etc., 1839, p. 415. W. Indies.
- 1839 *Dactylopterus blochii* Swainson, Nat. Hist., etc., 1839, p. 415. Based on *Trigla volitans* Bloch, pl. 351.
- 1839 *Dactylopterus tentaculatus* Swainson, Nat. Hist. etc., 1839, p. 416. Based on *Cataphractus* Klein, Missus = "*Trigla tentabunda*" Walbaum.
- 1839 *Dactylopterus fasciatus* Swainson, Nat. Hist., etc., 1839, p. 416. Based on *Corystion* Klein, Missus = *Trigla fasciata* Bloch and Schneider.

- 1839 *Dactylopterus trigloides* Swainson, Nat. Hist., etc., 1839, p. 417. Based on *Trigla corvus* Rafinesque.
- 1853 *Dactylopterus communis* Owen, Descr. Cat. Osteol. Ser. Mus. Roy. Coll. Surg. Eng., i, 1853, p. 56. New name associated with *Trigla volitans* Linnæus.
- 1854 *Gonocephalus macrocephalus* Gray, Cat. Fish. coll. Gronow Brit. Mus., 1854, p. 106. Based on Gronow, Zoophylacium, No. 285.
- 1860 *Dactylopterus volitans* Günther, Cat. Fish. Brit. Mus. ii, 1860, p. 221.
- 1860 *Cephalacanthus spinarella* Günther, Cat. Fish. Brit. Mus. ii, 1860, p. 224.
- 1877 *Corystion volitans* Pollen, Peches Madagascar in Rech. Faun. Madagas. iii, 1877, p. 63. Madagascar.
- 1880 *Dactylopterus volitans* Lütken, Spolia Atlantica, Vidensk. Selsk. Skr., 5 Række, natur. math. xii, 6, 1880, pp. 417-428 and 590, pl. i, figs. 1-5.
- 1898 *Cephalacanthus volitans* Jordan and Evermann, Bull. U.S. Nat. Mus. No. 47, ii, 1898, p. 2183, pl. cccxxiii, fig. 778.
- 1903 *Cephalacanthus volitans* Fowler, Science (2) xvii, 1903, p. 595 (*vide* Zoological Record).
- 1905 *Dactylopterus volitans* Gill, Ann. Rept. Smithson. Inst. 1904 (1905) p. 510, pl. ii, figs. 2-5, and pl. iii, figs. 1-3, and pl. iv, also text-fig. 1.
- 1908 *Cephalacanthus volitans* Jordan and Richardson, Proc. U.S. Nat. Mus. xxxiii, 1908, p. 664, footnote.
- 1913 *Dactylopterus volitans* Regan, Ann. Mag. Nat. Hist. (8) xi, 1913, p. 183, fig. 5b (osteology).

Mr. Melbourne Ward found a specimen of this species in the *Cephalacanthus* stage on Varadero Beach, Cuba (Austr. Mus. regd. No. IA.3563). When identifying it I noticed the complicated synonymy of this species which I have endeavoured to tabulate above. Cuvier noted that the young fish described by Linnæus as *Gasterosteus spinarella* came from Guiana and not from India or the East Indies as many authors had deduced. The "Indies" of Linnæus and other old authors may mean any extra-European locality and commonly either the West or East Indies. *Gasterosteus spinarella*, therefore, appears to be an American fish, and its name may not be applied to an Indo-Pacific species, as has sometimes been done. *G. spinarella* has been shown to be the larval form of *Trigla volitans* Linnæus, an Atlantic and Mediterranean species, by

Lütken and others, but since the name has page-priority, *Trigla volitans* becomes a synonym of it. Later synonyms, some of which have been generally overlooked, are also listed above.

The Indo-Pacific *Dactyloptena orientalis* (Cuvier) is sometimes referred to in literature on the Atlantic *Cephalacanthus spinarella* (Linnæus). As this species is found in Australia, I have tabulated its synonymy also, as follows:

Genus DACTYLOPTENA Jordan and Richardson 1908.

- 1908 *Dactyloptena* Jordan and Richardson, Proc. U.S. Nat. Mus. xxxiii, Feb. 28, 1908, pp. 664 and 665. Orthotype, *Dactylopterus orientalis* Cuvier and Valenciennes.
- 1908 *Ebisinus* Jordan and Richardson, Proc. U.S. Nat. Mus. xxxiii, Feb. 28, 1908, p. 664, footnote. Orthotype, *Dactylopterus cheirophthalmus* Bleeker.

It is not necessary for these names to fall as synonyms of *Corystion* Bleeker⁴⁵ who uses that generic term for *Corystion orientale* Bleeker = *Dactylopterus orientalis* Cuvier. I have not access to the original reference to this genus but quote from Weber and de Beaufort's index to Bleeker's papers.⁴⁶ Bleeker's name, perhaps taken from "*Corystion*" Klein, pre-Linnean, is preoccupied by *Corystion* Rafinesque 1810, another genus of fishes, so the use of *Dactyloptena* is validated.

DACTYLOPTENA ORIENTALIS (Cuvier).

Indo-Pacific Flying Gurnard.

- 1718 "*Terbang boudjou*" Renard, Poiss. Moluques i, 1718, pl. x, fig. 66. East Indies (not seen).
- 1724 "*Ikan terbang*, etc." Valentyn, Ind. Vet. et Nov. iii, 1724, p. 357, fig. 35. Amboina.
- 1758 "*Milvus ovidii*" Seba, Descr. Cabinet Seba, iii, 1758, p. 82, pl. xxviii, fig. 7 (not seen).
- 1803 "*Mooree-godoo*" Russell, Fish. Vizagapatam 1803, pl. clxi. Vizagapatam, India.
- 1829 *Dactylopterus orientalis* Cuvier, Règn. Anim. ed. 2, ii, April, 1829, p. 162. Based on Russell's pl. 161. Vizagapatam.
- 1829 *Dactylopterus orientalis* Cuvier and Valenciennes, Hist. Nat. Poiss. iv, Nov. 1829, p. 134, pl. lxxvi. Mauritius and Waigiou.

⁴⁵ Bleeker.—Nat. Tijds. Diek. i, 1863, p. 236.

⁴⁶ Weber and de Beaufort.—Fish. Indo-Austr. Archip. i, 1911, p. 144.

- 1839 *Dactylophorus orientalis* Swainson, Nat. Hist. Classif. Fish. Amphib. Rept., ii, July, 1839, p. 262, and p. 417 as *Dactylopterus*.
- 1839 *Dactylophorus bispinosus* Swainson, Nat. Hist., etc., 1839, p. 262. *Nom. nud.*, described as *Dactylopterus* on p. 417. Based on Russell's pl. 161. Vizagapatam.
- 1839 *Dactylophorus chinensis* Swainson, Nat. Hist., etc., 1839, p. 262. *Nom. nud.*, described as *Dactylopterus* on p. 418. "In a box of Chinese dried fishes and crabs."
- 1843 *Dactyloptera orientalis* Temminck and Schlegel, Faun. Japon. Poiss., 1843, p. 37, pl. xva.
- 1846 *Dactylopterus orientalis* Richardson, Rept. 15th meet. Brit. Assn. Adv. Sci. 1845 (publ. late 1846), p. 218. Japan and China.
- 1854 *Gonocephalus microcephalus* Gray, Cat. Fish. coll. Gronow Brit. Mus. 1854, p. 107. Based on Valentyn, Ind. Vet. et Nov. iii, p. 357, fig. 35. "In Mari Indico."
- 1854 *Dactylopterus japonicus* Bleeker, Nat. Tijds. Ned. Ind. vi, 1854, p. 396. Waka, Japan. Not *D. japonicus* Lacépède 1802, which is *Lepidotrigla alata* (Gmelin).
- 1860 *Dactylopterus orientalis* Günther, Cat. Fish. Brit. Mus. ii, 1860, p. 222.
- 1860 *Trigla dissimilis* Günther, Cat. Fish. Brit. Mus. ii, 1860, p. 223. *Nom. nud.* No locality.
- 1863 *Corystion orientale* Bleeker, Nat. Tijds. Dierk, i, 1863, p. 236. Ternate (*fide* Weber and de Beaufort).
- 1876 *Dactylopterus orientalis* Day, Fish. India 1876, p. 279, pl. lx, fig. 6.
- 1877 *Dactylopterus orientalis* Günther, Fische Südsee vi, 1877, p. 169 (Tahiti, Sandwich, Society, and Paumotu Islands).
- 1879 *Dactylopterus orientalis* Castelnau, Proc. Linn. Soc. N. S. Wales iii, 4, May, 1879, p. 351 (Sydney).
- 1882 *Dactylophorus orientalis* Tenison-Woods, Fish. and Fisher. N. S. Wales, 1882, p. 69.
- 1886 *Dactylopterus orientalis* Ogilby, Cat. Fish. N. S. Wales, 1886, p. 34.
- 1892 *Dactylopterus orientalis* Trebeck, Abstr. Proc. Linn. Soc. N. S. Wales, April 27, 1892, p. vii (Port Jackson).
- 1904 *Cephalacanthus spinarella* Waite, Mem. N. S. Wales Nat. Club, ii, Nov. 7, 1904, p. 49. Not *Gasterosteus spinarella* Linnaeus.

- 1905 *Cephalacanthus orientalis* Jordan and Evermann, Bull. U.S. Fish. Comm. xxiii, 1, 1903 (July 29, 1905) p. 473, fig. 208 (Hilo, Hawaii).
- 1906 *Cephalacanthus spinarella* Stead, Fish. Austr. 1906, pp. 202 and 265, fig. *Non* Linnæus.
- 1908 *Dactyloptena orientalis* Jordan and Richardson, Proc. U.S. Nat. Mus. xxxiii, 1908, p. 666 (South Japan, Hawaii, East Indies).
- 1908 *Cephalacanthus spinarella* Stead, Ed. Fish. N. S. Wales, 1908, p. 115. *Non* Linn.
- 1912 *Dactyloptena orientalis* Snyder, Proc. U.S. Nat. Mus. xlii, 1912, p. 435, fig.
- 1913 *Dactylopterus orientalis* Weber, Siboga Exped., Fische, May, 1913, p. 517, fig. 109 (young).
- 1913 *Dactyloptena orientalis* Regan, Ann. Mag. Nat. Hist. (8) xi, 1913, pp. 175 and 183, figs. 1a and 5a (osteology).
- 1914 *Dactyloptena orientalis* Jordan and Thompson, Mem. Carneg. Mus. vi, 4, 1914, p. 284 (Japan). Important remarks on presence of lateral line.
- 1922 *Dactyloptena orientalis* McCulloch, Austr. Zool., ii, 3, 1922, p. 118, fig. 345a (N. S. Wales).
- 1922 *Dactyloptena orientalis* Jordan and Jordan, Mem. Carneg. Mus. x, 1, 1922, p. 57.
- 1925 *Dactyloptena orientalis* McCulloch and Whitley, Mem. Qld. Mus. viii, 1925, p. 165.
- 1927 *Dactyloptena orientalis* Whitley, Rec. Austr. Mus. xvi, 1, 1927, p. 29 (Queensland).

This species is sometimes found southwards of the Tropics as far as New South Wales. Specimens are in the Australian Museum from the following localities: Palmers Is. and Michaelmas Cay, Queensland; Trial Bay, Hastings River, Broken Bay, Port Jackson, Maroubra, and Manly, New South Wales; Malay Archipelago; Japanese Seas; Honolulu Aquarium; New Hebrides.

Later researches, based on large series of specimens, may demonstrate that several subspecies are geographically separable. The type locality of this species is Vizagapatam, India. For the present, the following nominal species may be considered as distinct: *Dactyloptena procne* Ogilby⁴⁷ from Queensland; *D. gilberti* Snyder⁴⁸

⁴⁷ Ogilby.—Proc. Roy. Soc. Qld. xxiii, Nov., 1910, p. 34 (*Ebisinus*).

⁴⁸ Snyder.—Proc. U.S. Nat. Mus. xxxvi, 1909, p. 604; and *ibid.* xlii, 1912, p. 435, pl. lvii, fig. 1 and text-fig. 1.

from Japan, with *D. jordani* Franz⁴⁹ as a synonym; *D. papilio* Ogilby⁵⁰ from Southern Queensland; *D. cheirophthalmus* Bleeker⁵¹ from the East Indies; and perhaps *D. macracanthus* Bleeker⁵² from Celebes.

Family SYNAPTURIDÆ.

SYNAPTURA NIGRA Macleay.

- 1880 *Synaptura nigra* Macleay, Proc. Linn. Soc. N. S. Wales, v, 1, Aug. 1880, p. 49. Botany Bay, New South Wales.
- 1882 *Synaptura fitzroiensis* De Vis, Proc. Linn. Soc. N. S. Wales, vii, 3, Oct. 28, 1882, p. 319. Mouth of Fitzroy River, Q. Type in Queensland Museum seen. *Id.* Saville-Kent, Gt. Barrier Reef, 1893, pp. 297 and 370. Spelt *S. fitzroyensis* by McCulloch and Whitley, Mem. Qld. Mus. viii, 1925, p. 162.
- 1883 *Synaptura cinerea* De Vis, Proc. Linn. Soc. N. S. Wales, viii, 2, July 17, 1883, p. 288. Moreton Bay, Q.
- 1926 *Brachirus fitzroiensis* and *orientalis* Norman, Biol. Res. Endeavour v, 5, June 15, 1926, p. 293 (refs. and synonymy).

Identity of Synaptura fitzroiensis De Vis.—I have examined a specimen in the Queensland Museum (Regd. No. I.11/79) which is evidently the holotype of *Synaptura fitzroiensis* De Vis and regard this species as inseparable from *S. nigra* Macleay.

The following characters of De Vis' specimen may be noted: Nostrils of the usual *Synaptura* type present, though described by De Vis as "On the upper lip three or four short thick tentacles." About 80 scales on straight part of lateral line system. Dorsal extending forward on to snout.

The following description was made in MS. by the late J. D. Ogilby from De Vis' type in the Queensland Museum:

"D.63;A.50;C.17;P.4.4;V.3/3. L.1.110; 1.tr.44/48.

"Depth of body 1.75, length of head 4.8 in length of body. Eye minute 11.5 in head and equal to interorbital width. Longest ray of right pectoral not quite twice the eye-diameter, 6.25 in head, and a little shorter than that of left pectoral, which is 5.8 in head. Caudal fin 1.35 in same. Scales everywhere ctenoid, except on the lower surface of head, where they are cycloid; both surfaces of vertical fins scaly to the tips; lips and anterior portion of snout naked on right side, without fold; a larger area naked on left side, cirrate. Eyes small and round, the upper partly in advance of the lower interorbital space scaly. Upper anterior nostril preceded by a wide triangular skinny valve, which barely reaches the posterior nostril, which is close in front of the eye near the lip. Cleft of mouth extending to below

⁴⁹ Franz.—Abh. Akad. München, Suppl. Band iv, Abh. i, 1911, p. 80, pl. ix, fig. 72.

⁵⁰ Ogilby.—New Fish. Qld. Coast 1910, p. 127.

⁵¹ Bleeker.—Nat. Tijds. Ned. Ind. vii, 1854, p. 494 (*Dactylopterus*).

⁵² Bleeker.—Nat. Tijds. Ned. Ind. vii, 1854, p. 449 (*Dactylopterus*).

the anterior border of the lower eye; lips not fringed. Dorsal originating in front of the upper eye, its rays increasing in length backwards, its last nearly as long as the caudal. Anal similar to the dorsal. Caudal rounded. Ventrals small and equal, separated from anal by a considerable interspace. Lateral line straight from caudal to head, where it is bent upwards. Both sides now bleached to a uniform dirty white.

"L.177 (mm.), D.100, Head 37, Eye 3.2, Right pectoral 5.9, Left pectoral 6.4, Caudal 27, last dorsal ray 24."

Locality.—Mouth of the Fitzroy River, Rockhampton, Queensland; donated by T. McIlraith. Queensland Museum regd. No. I.11/79.

Synonymy.—Norman regards *Synaptura nigra* Macleay as a synonym of the Indian *S. orientalis* (Bloch and Schneider), but the Australian species is here regarded as distinct in consideration of his statement (*loc. cit.*, p. 294) that Australian specimens "appear to have (generally) a slightly deeper body, and often a somewhat different colouration." I also doubt whether *Solea foliacea* Richardson from China and *Synaptura cinerascens* Günther are conspecific with the Australian form as Norman suggests, and accordingly revive Macleay's name for our species.

Family GOBIIDÆ.

GLOSSOGOBIUS VOMER, *sp. nov.*

(Plate xxxii, fig. 1.)

D.vi/9; A.i/7; P.15. Sc. circa 34.

Depth (10 mm.) 5.8 in length to hypural joint (58). Head (18) 3.2 in same. Eye (3.5) 5.1, interorbital (2) 9, snout (5) 3.6 in head.

Head depressed, naked. A median pore between the eyes and a few smaller ones on top of head. A row of pores along the preopercular ridge and some regular subhorizontal rows along the cheeks. Nostrils inconspicuous with simple openings. Skin of chin plicate, without barbels. Isthmus narrow. Lower jaw longer than upper. Maxillary reaching to below middle of eye. A band of short pointed teeth in each jaw, the inner teeth depressible. Tongue large, with a median notch.

Body elongate, tapering, rounded anteriorly, compressed posteriorly; covered with large scales with narrow, weakly ctenoid edges. No pit or fleshy lobes on shoulder. A naked area around and in front of the vent and genital papilla. First dorsal with six spines, lower than the second. Anal similar to second dorsal but with shorter base. Pectorals almost reaching origin of anal, without silk-like rays. Ventrals united, not reaching vent. Caudal irregularly rounded.

General colour, after long preservation, yellowish-brown becoming lighter below. Head, body, and fins, with brown punctulations which are denser on the back, around the eyes, and on the operculum. A brown mark on shoulder and a prominent blackish blotch on the spinous dorsal membrane. Eye bluish.

Described and figured from the unique holotype, a specimen $2\frac{3}{4}$ inches long. Austr. Mus. regd. No. I.11234.

Loc.—Swan River, Western Australia; collected by A. Abjornson.

Family SALARIIDÆ.

I have noted over two hundred specific names which have been used in literature under the genus *Salaria*, *sensu lato*, and it is therefore hardly surprising that some names have been twice applied to different fishes. Some new names are therefore necessary for some of the preoccupied ones discussed hereunder.

SALARIAS DAYI *nom. nov.*

The name *Salaria alboguttatus* Day⁵³ is preoccupied by *S. alboguttatus* Kner,⁵⁴ a Samoan species later figured by Günther.⁵⁵ Day's species, which was described from the Andaman Islands, requires a new name and may be called *Salaria dayi*.

"SALARIAS FURCATUS *Johnstone.*"

De Vis⁵⁶ described *Salaria furcatus* from Moreton Bay, Queensland, but McCulloch and McNeill⁵⁷ regarded this species as a doubtful *Petroscirtes*. The preoccupied name, *Salaria furcatus*, was, however, proposed for a very different fish by Johnstone.⁵⁸ Johnstone's species apparently does not require a new name as Weber⁵⁹ regards it as a synonym of *Salaria bicolor* Day.⁶⁰

SALARIAS LUCTUOSUS *nom. nov.*

Salaria andersoni Jordan and Starks⁶¹ from Japan is rendered invalid as a name by *Salaria andersonii* Day⁶² from Galle. The Japanese species may be re-named *Salaria luctuosus*.

⁵³ Day.—Fish. India ii, Aug., 1876, pp. 329 and 334.

⁵⁴ Kner.—Sitzb. Akad. Wiss. Wien lvi, 1867, p. 724, fig. 6.

⁵⁵ Günther.—Journ. Mus. Godeff. xliii (Fische Sudsee vi), 1877, p. 205, pl. xviii, fig. B.

⁵⁶ De Vis.—Proc. Linn. Soc. N. S. Wales ix, 3, Nov. 29, 1884, p. 696.

⁵⁷ McCulloch and McNeill.—Rec. Austr. Mus. xii, 1918, p. 23.

⁵⁸ Johnstone.—Suppl. Rept. Pearl Fisher. xv in Rept. Pearl Oyster Fish. G. Manaar, pt. ii, 1904, p. 213, pl. i, fig. 4.

⁵⁹ Weber.—Fische Siboga-Exped., 1913, p. 533.

⁶⁰ Day.—Suppl. Fish. Ind., 1888, p. 798, *ex* Tickell MS.

⁶¹ Jordan and Starks.—Proc. U.S. Nat. Mus. xxx, June 4, 1906, p. 703, fig. 11.

⁶² Day.—Fish. India ii, Aug. 1876, pp. 329 and 331.

SALARIAS SANNA *nom. nov.*

The writer was unconsciously the culprit who gave a pre-occupied name to a Santa Cruz Archipelago species which was called *Salarias macneilli coloratus* in Rec. Austr. Mus. xvi, 1928, p. 229. This name, I have since discovered, is invalidated by *Salarias quadricornis coloratus* Klunzinger⁶³ described from the Red Sea. My Santa Cruz form may now be elevated to full specific rank with the new name *Salarias sanna*.

Family ANTENNARIIDÆ.

ANTENNARIUS COMMERSIONII (*Cuvier*).

(Plate xxxi, fig. 5.)

- 1798 "*La Lophie commerson*" Lacépède, Hist. Nat. Poiss. i, 1798, p. 327. Vernacular name only. "East African Seas."
 1817 *Chironectes commersonii* Cuvier, Mem. Mus. d'Hist. Nat. iii, Oct. 1817, p. 431, pl. xviii, fig. 1. Based on Lacépède 1798. Mauritius.
 1855 ? *Antennarius moluccensis* Bleeker, Nat. Tijdschr. Ned. Ind. viii, 1855, p. 424. Amboina.

The coloured figure depicts a specimen from Watson's Bay, near Sydney (Austr. Mus. No. I.5263), caught in May, 1902. This species is not so common in New South Wales as *A. striatus* Shaw. The type-locality of *A. commersonii* is evidently near Mauritius and it seems probable that the Australian form regarded as that species may not be typical.

Specimens are in the Australian Museum from Port Jackson and Port Hacking, New South Wales.

PTEROPHYRNOIDES HISTRIO (*Linnæus*).

(Plate xxxi, fig. 4.)

- 1758 *Lophius histrio* Linnæus, Syst. Nat., ed. 10, 1758, p. 237; ed. 12, 1766, p. 403. Pelagic, in floating weed, China and Brazil. Type-locality, Sargasso Sea (*vide infra*).

The coloured figure is taken from a New South Wales specimen; Austr. Mus. No. I.5255.

Osbeck⁶⁴ found this species, which is said to have a world-wide distribution, among Sargazo weed in the North Atlantic Ocean in

⁶³ Klunzinger.—Verh. Zool.-Bot. Ges., Wien, xxi (Synops. Fische Roth. Meeres ii), 1871, p. 488.

⁶⁴ Osbeck.—Voy. China and E. Indies (trans. J. R. Forster) ii, 1771, pp. 112 and 114. On p. 331 of the same volume, in Forster's Faunula Sinensis, "*Lophius histrio*. Amœn. Acad. 4, p. 246" is listed from China.

1752 and remarked, in his account of it, "Perhaps Providence has clothed this fish with *fulcra* resembling leaves, that the fishes of prey might mistake it for sea-weed, and not entirely destroy the breed." Linnæus practically based his name *Lophius histrio* on the account given in the original Swedish edition of Osbeck's Voyage, so the type-locality of the species is in the "Grass Sea," North Atlantic Ocean, between 17° and 24° N. lat. and 37° and 39° W. long.

Family ALUTERIDÆ.

(*Monacanthidæ*, auctt.)

Aluterus Cloquet⁶⁵ is an earlier name than *Monacanthus* Schinz,⁶⁶ the first Latinization of "Les Monacanthes" Cuvier,⁶⁷ so the family hitherto known as *Monacanthidæ* should be named *Aluteridæ*.

MEUSCHENIA, *gen. nov.*

Orthotype, *Monacanthus trachylepis* Günther 1870.

Gill-opening short, oblique, below eye. Dorsal spine originating over eye, with two rows of strong barbs posteriorly and two shorter rows of weak barbs anteriorly; a small second dorsal spine. Dorsal and anal fins not angulate, with more than thirty rays. A small immovable ventral spine; dewlap-like ventral flap not developed.

Body elongate, its depth being one-third of total length, less than half length to hypural, and more than length of head. Scales erect, with three to eight strong spines; no cutaneous flaps on body or fins. Length of caudal peduncle less than that of interdorsal space. Normally four strong spines on each side of caudal peduncle, though these may be weak or accompanied by extra rudimentary spines.

Named after Friedrich Christian Meuschen, an eighteenth century zoologist, whose names for fishes I am discussing in another paper in these Records.

Affinities.—The type-species of *Meuschenia* was originally described as a *Monacanthus*, but cannot be retained in that genus because the genotype of the latter is *Balistes chinensis* Bloch 1786, a species, described by Osbeck in a pre-Linnean work from the Chinese Sea,⁶⁸ which has a dewlap-like flap near the prominent

⁶⁵ Cloquet.—Dict. Sci. Nat., ed. 2, i, Oct. 1816, suppl., p. 135.

⁶⁶ Schinz.—Das Thierreich (Cuvier) ii, 1822, p. 225. Mr. Iredale regards the latinizations of Oken, Isis, 1817, p. 1183 as *nomina nuda*.

⁶⁷ Cuvier.—Règn. Anim. ed. 1, ii, "1817" = Dec. 1816, p. 152. Vernacular only.

⁶⁸ Osbeck.—Voy. China and E. Indies (trans. J. R. Forster), i, 1771, p. 177; Reise Ost-Indien China, 1765, p. 147 (*vide* Sherborn); and Bloch, Nat. ausl. Fische ii, 1786, p. 29 (*vide* Sherborn); Ichtyologie v, 1787, p. 26, pl. clii, fig. 1 (China). This species was called *Balistes* sp. by Meuschen, 1781.

ventral spine and is a smaller fish with a relatively deeper body. Neither is *Meuschenia trachylepis* a *Cantherhines* as, in the original description of that genus by Swainson⁶⁹ the characters given are "Body smooth or granulated; pelvis prominent; tail smooth" and "no spines on the side of the tail." The haplotype of *Cantherhines* is *Monacanthus nasutus* Swainson (*loc. cit.*), which is a new name for *Balistes sandwichiensis* Quoy and Gaimard.⁷⁰ It may be of interest to note that I have before me Swainson's copy of Quoy and Gaimard's work and that a note in his handwriting is pencilled in the margin against *B. sandwichiensis* stating "*Monacanthus*. no spines. tail even." An excellent figure of *Cantherhines sandwichiensis* (Q. and G.) has been given by Jordan and Evermann,⁷¹ from which it is seen that caudal spines may be present. This character has, since Swainson's day, been regarded as sexual. However, there is no possibility of confusing this Hawaiian species with *Meuschenia* as it has a deep body, and dewlap-like ventral flap. These characters are also present in *Liomonacanthus* Bleeker,⁷² judging from the figure of the genotype, *L. pardalis*, in the Atlas Ichthyologique.

The genotype of *Pseudomonacanthus* Bleeker,⁷³ the third genus into which *Monacanthus trachylepis* Günther has been placed by authors, is *Monacanthus macrurus* Bleeker,⁷⁴ being designated in the Atlas Ichthyologique. This species has a ventral spine and dewlap-like flap and less fin-rays than *M. trachylepis*. Bleeker's figure⁷⁵ clearly shows that it is not congeneric with *Meuschenia*. Jordan and Fowler⁷⁶ have applied the name *Pseudomonacanthus* to a very different form, *Monacanthus oblongus* Temminck and Schlegel, but whilst this species, which is Japanese, is nearer *M. trachylepis* than is *M. macrurus*, it is still to be regarded as generically distinct because it has a velvety integument and pointed fins, and is nearer "*Pseudomonacanthus*" *degeni* Regan, and *ayraudi* Quoy and Gaimard from Australia.

MEUSCHENIA TRACHYLEPIS (Günther).

(Plate xxxii, figs. 2, a and b).

1870 *Monacanthus trachylepis* Günther, Cat. Fish. Brit. Mus., viii, 1870, p. 248. "Australia"; probably Sydney. Type in Brit. Mus. (Nat. Hist.).

⁶⁹ Swainson.—Nat. Hist. Classif. Fish. Amphib. Rept. ii, July 1839, p. 194 and on 327, as *Cantherhines*. Emended to *Canthorhinus* by Agassiz, Nomencl. Zool., 1846, Index Univ., and used later by Gill.

⁷⁰ Quoy and Gaimard.—Voy. Uran. Physic., Zool., Oct. 1824, p. 214. Sandwich Is.

⁷¹ Jordan and Evermann.—Bull. U.S. Fish. Comm. xxiii (1903), 1, 1905, p. 418, fig. 183.

⁷² Bleeker.—Ned. Tijdschr. Dierk. iii, 1866, p. 13 (*vide* Jordan).

⁷³ Bleeker.—Ned. Tijdschr. Dierk. iii, 1866, p. 11 (*vide* Jordan, Gen. Fish. iii, 1919, p. 340).

⁷⁴ Bleeker.—Nat. Tijdschr. Ned. Ind. xii, 1856, p. 226. Nias.

⁷⁵ Bleeker.—Atlas Ichthyologique v, 1869, p. 134, pl. ccxxviii, fig. 2.

⁷⁶ Jordan and Fowler.—Proc. U.S. Nat. Mus. xxv, 1902, p. 268.

- 1873 ? *Monacanthus baudinii* Castelnau, Proc. Zool. Acclim. Soc. Vict., ii, May 10, 1873, p. 55. Victorian coast and Hobart.
- 1879 *Monacanthus trachylepis* Klunzinger, Sitzungb. Akad. Wiss. Wien lxxx, 1, 1879, p. 422 (98 of reprint).
- 1879 ? *Monacanthus rudis* Castelnau, Proc. Linn. Soc. N.S. Wales, iii, 4, May, 1879, p. 399. Sydney. Not *M. rudis* Richardson, Trans. Zool. Soc. Lond., iii, 1844, p. 166, from Tasmania and not *M. rudis* Castelnau, Proc. Zool. Acclim. Soc., ii, 1873, p. 54.
- 1881 *Monacanthus trachylepis* Macleay, Proc. Linn. Soc. N.S. Wales, vi, 2, Sept. 12, 1881, p. 313. Broken Bay, N.S.W.
- 1893 *Monacanthus trachylepis* Ogilby, Ed. Fish. Crust. N.S. Wales, 1893, p. 195.
- 1904 *Pseudomonacanthus trachylepis* Waite, Mem. N.S. Wales Nat. Club, i, 1904, p. 56.
- 1915 *Cantherines trachylepis* Ogilby, Commerc. Fish. Fisher. Qld., 1915, pp. 43 and 48.
- 1916 *Cantherines trachylepis* Cockerell, Mem. Qld. Mus., v, 1916, p. 57 (scales).
- 1922 *Cantherines trachylepis* McCulloch, Austr. Zoologist, ii, 3, 1922, p. 126, fig. 363e; Check-List, 1922, p. 100.

This species has been well described by Ogilby, 1893. The accompanying figure is of a specimen (Austr. Mus. No. I.6775) from Maroubra, New South Wales, presented by A. R. McCulloch, May, 1904. Others are in the Museum from Port Stephens and Port Jackson.

Meuschenia trachylepis is apparently allied to the following species from Australia:

- Balistes lemniscatus* Lacépède, Ann. Mus. d'Hist. Nat., May, 1804, pp. 202 and 211. "New Holland" (Baudin); probably Bass Strait or Kangaroo Island.
- Aleuterius variabilis* Richardson, Zool. Voy. Erebus and Terror, Fish. 1846, p. 67, pl. lii, figs. 1-7, *Monacanthus* on plate. King George's Sound, W. Australia. The Eastern Australian form of this species has been identified with *Balistes hippocrepis* Quoy and Gaimard, Voy. Uran. Physic., Zool., Oct. 1824, p. 212. Mauritius. *Monacanthus multiradiatus* Günther, Cat. Fish. Brit. Mus., viii, 1870, p. 248, is similar.
- Pseudomonacanthus galii* Waite, Rec. Austr. Mus., vi, 2, Sept. 15, 1905, p. 79, pl. xvi. Sharks Bay, W. Australia.

- Aleuterus maculosus* Richardson, Proc. Zool. Soc. Lond., viii, Aug., 1840, p. 28; Trans. Zool. Soc., iii, Jan., 1844, p. 170 Port Arthur.
- Monacanthus edelensis* Castelnau, Vict., Offic. Rec. Philad. Exhib., 1875, p. 50. Fremantle.
- Monacanthus convexirostris* Günther, Cat. Fish. Brit. Mus., viii, 1870, p. 248. George Town, Tasmania and New Zealand. Apparently not *Pseudomonacanthus convexirostris* Waite (Rec. Canterbury Mus., i, 3, 1911, p. 257, pl. lvii). Comparison of the types of *M. convexirostris* and *M. trachylepis* with one another and with Waite's figure would solve this problem.

Genus ALUTERUS Cloquet 1816.

- 1816 *Aluterus* Cloquet, Dict. Sci. Nat. (Levrault), ed. 2, i, October, 1816, suppl. p. 135. (Ex Cuvier MS.) Logotype, *A. monoceros* (Linnaeus).
- 1816 "Les Alutères" Cuvier, Règn. Anim. ed. 1, ii, "1817" = Dec., 1816, p. 153; ed. 2, ii, 1829, p. 374. Vernacular only.
- 1817 *Alutera* Oken, Isis, 1817, p. 1183 (*vide* Sherborn, and Jordan). *Nomen nudum.*
- 1822 *Alutera* Schinz, Das Thierreich (Cuvier), ii, 1822, p. 256. Based on Bloch t. 147.
- 1831 *Aluterus* Lesson, Voy. Coquille, Zool. ii, 1831, p. 105.
- 1832 *Aluterus* Voigt, Das Thierreich (Cuvier), ii, 1832, p. 488.
- 1840 *Aleuterus* Richardson, Proc. Zool. Soc. Lond., viii, Aug. 1840, p. 28.
- 1846 *Aleuterius* Richardson, Zool. Erebus and Terror (Fish. 1846), p. 67.
- 1846 *Alutarius* Agassiz, Nomencl. Zool., 1846, Index Univ. Emendations for "*Alutera* Cuvier" and *Aluterus* Lesson.

This generic name has been spelt in various ways and quoted as of Cuvier. That author, however, only used the vernacular. Jordan, in the Genera of Fishes, quotes *Alutera* Oken 1817 as valid, but Mr. T. Iredale, who has seen Oken's work in London, regards his names as *nomina nuda*. However, argument upon this point is obviated by reference to Sherborn's Index Animalium where all the various spellings are correctly indexed, and the original and valid reference to Cloquet 1816 is given. Reference to the Dict. Sci. Nat., which was published before Cuvier's vernacular, shows that Cloquet had introduced *Aluterus* from Cuvier's MS. and gave a full definition with two species: *Aluterus monoceros*, based on

Balistes monoceros Linnæus, and *Aluterus kleinii*, based on *Balistes kleinii* Linnæus and *B. auwauwa* Artedi. *Balistes monoceros* Linnæus was formally designated the genotype by me on the third page of Additions in the second edition (*i.e.* impression) of McCulloch's Fishes and Fish-like Animals of New South Wales, 1927.

ALUTERUS MONOCEROS (*Linnæus*).

1758 *Balistes monoceros* Linnæus, Syst. Nat., ed. 10, Jan. 1, 1758, p. 327. Based on Mus. Ad. Fr. 2; *Balistes monoceros* Osb. iter. 110; and "*Unicornu*," etc., Catesb. car. 2, t. 19. Habitat in Asia, America [= near Hong Kong].

Two species of fishes are united by Linnæus under one name, *Balistes monoceros*. One is an American, the other an Asiatic form, but as the name is taken directly from Osbeck, it must be applied to the species described by Osbeck which is probably the same as the one in the Ad. Fr. Mus. The locality "Asia" can be determined by reference to Osbeck's *Iter Chinensis*. The Swedish account quoted by Linnæus is not available to me, but I have Forster's translation from the German edition which gives the type-locality as 22° 4' N. Lat., off the White Rock, Chinese Coast, somewhere about Hong Kong. Osbeck's names in the text of his Voyages are not accepted in taxonomy as the book is a translation of a pre-Linnean work. The list of species at the end of the second volume given by Forster⁷⁷ in the *Faunula Sinensis*, 1771, is valid. The fish names are as follows: p. 331 (*Amphibia nantes*) *Lophius histrio*, *Balistes monoceros*, *B. vetula*, *B. scriptus*, *B. nigro punctatus*, *B. sinensis*, *Tetrodon hispidus*, *T. ocellatus*; p. 332 (*Pisces*) *Trichiurus lepturus*, *Gobius niger*, *G. cleotris*, *G. anguillaris*, *G. pectinirostris*, *Chaetodon pinnatus*, *C. argenteus*, *Sparus nobilis*, *S. chinensis*, *Labrus opercularis*, *L. chinensis*, *Scomber trachurus*; p. 333 *Clupea thrissa*, *C. mystus*, *C. sinensis*, *C. lanatus*, *Cyprinus auratus*, *C. cantonensis*.

As Osbeck's work is rare, I take this opportunity to transcribe below Forster's translation of his account of *Aluterus monoceros* and of a second species, "*Balistes scriptus*." The latter name should apparently date from Forster 1771, not from Gmelin 1789; the species is the haplotype of *Osbeckia* Jordan and Evermann.⁷⁸ A nominal species of *Osbeckia* is recorded from New South Wales, where the genus is represented in the Tasman Sea. This was originally described as *Monacanthus macrurus* by Macleay,⁷⁹ but the name being preoccupied by Bleeker,⁸⁰ was changed to

⁷⁷ Forster.—*Faunula Sinensis*, in Osbeck, *Voy. China and E. Indies* (trans. Forster), ii, 1771, pp. 321-338.

⁷⁸ Jordan and Evermann.—*Bull. U.S. Nat. Mus.* xlvii, 2, 1898, p. 1719.

⁷⁹ Macleay.—*Proc. Linn. Soc. N. S. Wales* vi, 2, Sept. 12, 1881, p. 330.

⁸⁰ Bleeker.—*Nat. Tijdschr. Ned. Ind.* xii, 1856, p. 226.

M. maculicauda by Ogilby⁸¹ and the species was recorded as *Osbeckia maculicauda* by McCulloch.⁸² Probably this species is *O. scriptus* which is oceanic in habitat or pelagic and perhaps strays southward to the waters between New South Wales and Lord Howe Island. I saw a specimen when aboard the Research Ship "Dana" and have picked up a dead *Aluterus monoceros* on Maroubra Beach near Sydney.

"The 8th of August, 22° 4' N.L.

PIEDRA *Blanca*, or the *White rock*, came within our sight, towards noon. The wind abating, the heat became intolerable. Towards the evening we anchored.

BALISTES *Monoceros* is a species of fish which looks like a flounder at a distance, and has almost the same taste, but is not so fat. The fish was half a foot long, and its body covered with a dark-grey rough skin. We caught several with a hook, and this afforded me an opportunity of describing them.

ON each side is a *spiracle*, and next to it, within the skin, two transverse bones: the first *dorsal fin* near the eyes, consists of a reversed brittle bone, which is armed with little hooks; it is the length of a finger's breadth, and a little longer than the other fins: the second *dorsal fin* has forty-seven rays: the *pectoral fins* are the least; each has thirteen rays: the *ventral fins* are wanting; in their stead is a long bone under the skin: the *anal fin* is opposite to the second dorsal fin, and has 51 rays: the *tail* has 12 ramose rays: the *mouth* is oblong and narrow: the lower *jaw* is somewhat longer than the upper; on each side of it stand three pointed, broad *teeth*, connected together below, of which the middlemost is split: the *lips* are moveable."

"The 9th of August.

THE ship hardly moved from the place where it was the day before. We saw besides *Piedra Blanca* the isle of *Lantoa*, and some other isles on the *Chinese coast*, on our right."

"The 10th of August.

IN the forenoon the sky was clear, but the wind against us.

BALISTES *scriptus*. Catesby, vol. ii. 27. A fish equal in size and appearance to the *Balistes monoceros*, but marked over the whole body as it were with blue letters of an Eastern language, was caught here, and put into *Spanish brandy*; but the fine colours vanished as soon as it was dead."⁸³

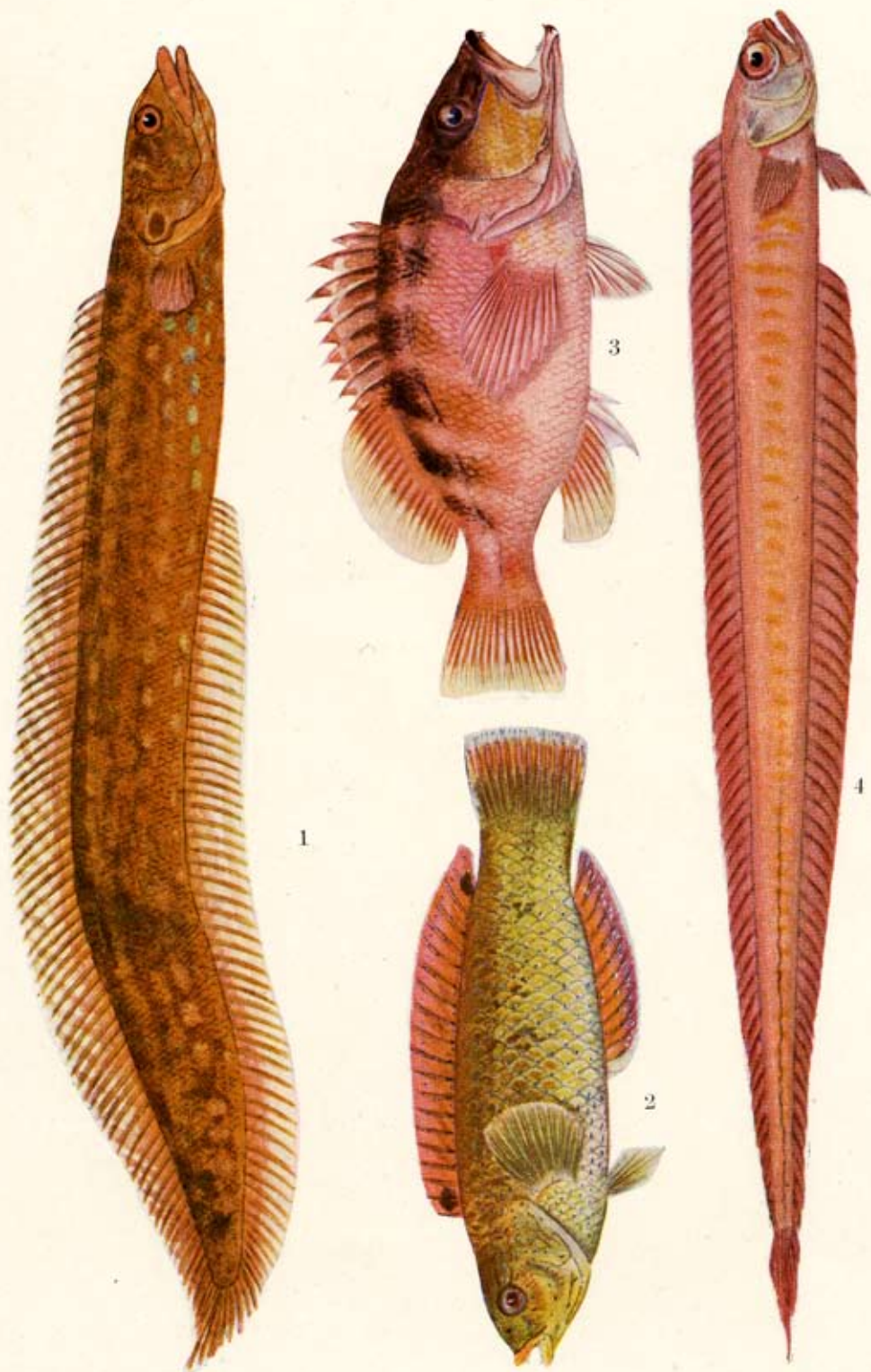
⁸¹ Ogilby.—Cat. Fish. N. S. Wales in Rept. Commis. Fisher, N.S.W. 1886 (1887), Appendix A, p. 64.

⁸² McCulloch.—Austr. Zoologist ii, 3, 1922, p. 127.

⁸³ Osbeck.—Voy. China and E. Indies (trans. J. R. Forster) i, 1771, pp. 172-174.

EXPLANATION OF PLATE XXX.

- Fig. 1. *Congrogadus subducens* (Richardson). A specimen from Darwin, North Australia.
- Fig. 2. *Pictilabrus laticlavius* (Richardson). A specimen from Long Bay, New South Wales.
- Fig. 3. *Ellerkeldia maccullochi* Whitley. A specimen from Rose Bay, New South Wales.
- Fig. 4. *Cepola australis* Ogilby. A specimen from Port Jackson, New South Wales.



Allan R. McCulloch, pinx.

EXPLANATION OF PLATE XXXI.

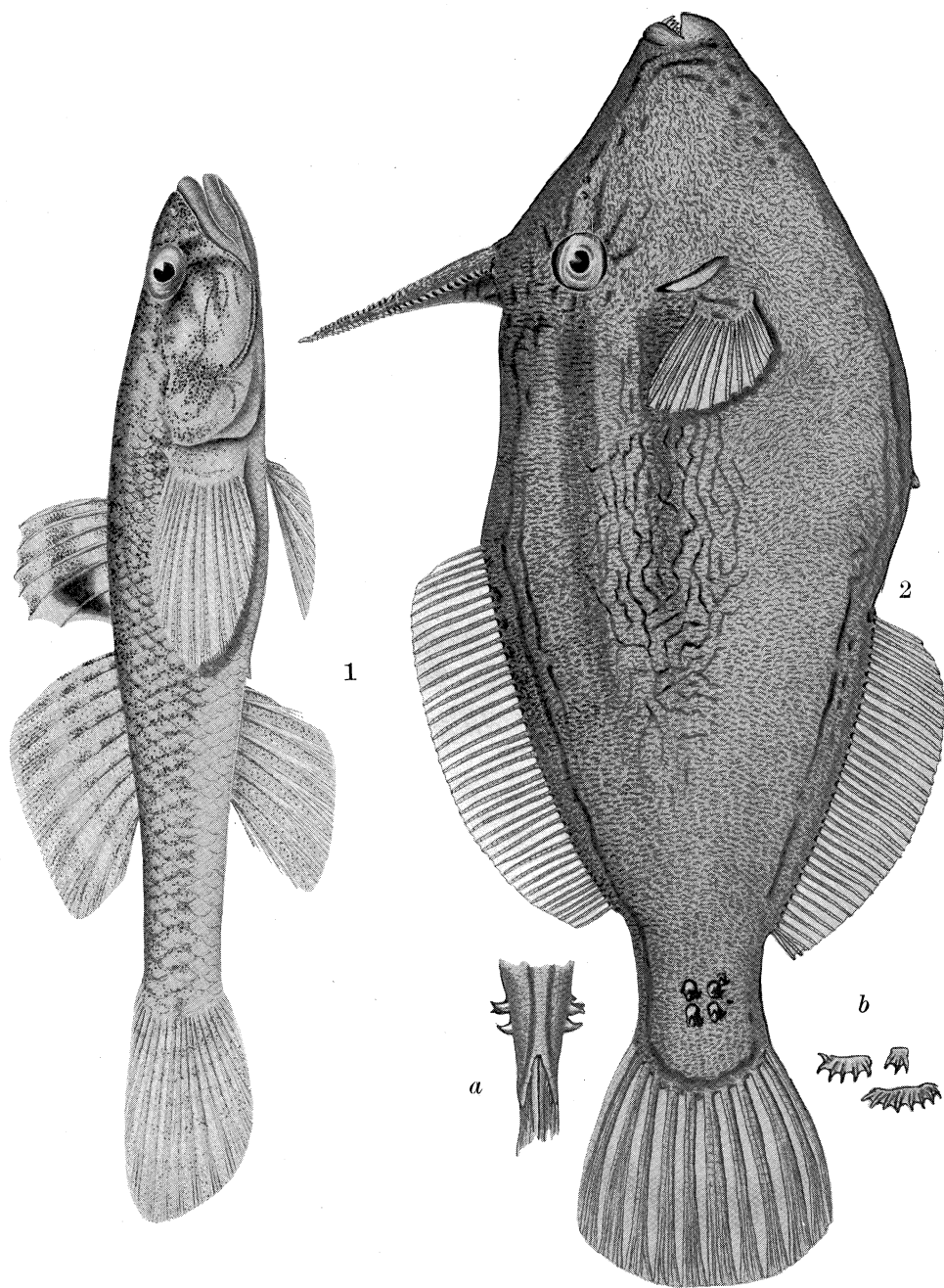
- Fig. 1. *Upeneus signatus* Günther. A specimen from Elizabeth Bay, Port Jackson, New South Wales.
- Fig. 2. *Upeneichthys porosus* (Cuvier and Valenciennes). A specimen from Elizabeth Bay, Port Jackson, New South Wales.
- Fig. 3. *Upeneoides jeffi* (Ogilby). A specimen from Elizabeth Bay, Port Jackson, New South Wales.
- Fig. 4. *Pterophrynooides histrio* (Linnæus). A specimen from New South Wales.
- Fig. 5. *Antennarius commersonii* (Cuvier). A specimen from Watson's Bay, Port Jackson, New South Wales.
- Fig. 6. *Trachurus declivis* (Jenyns). A specimen from Port Jackson, New South Wales.
- Fig. 7. *Alabes parvulus* (McCulloch). A specimen from Coogee, New South Wales.



EXPLANATION OF PLATE XXXII.

Fig. 1. *Glossogobius vomer* Whitley. A specimen from Swan River, Western Australia.

Fig. 2. *Meuschenia trachylepis* (Günther). A specimen from Maroubra, New South Wales. *a.* Caudal spines from dorsal aspect; *b.* two bodyscales and one smaller scale from the tail, magnified.

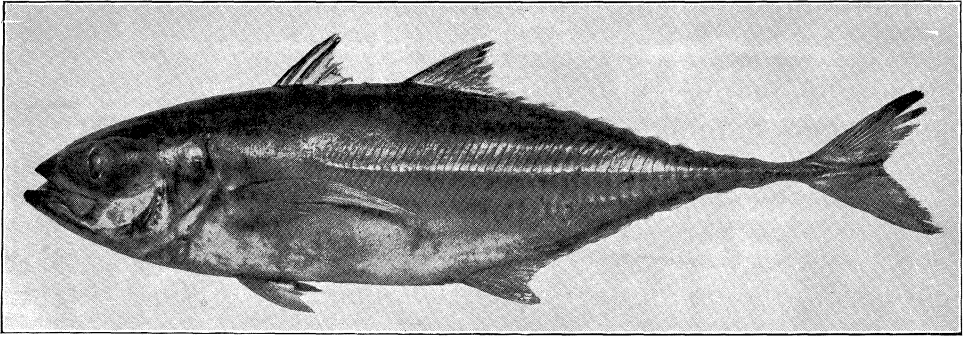


Allan R. McCulloch, del. (1).

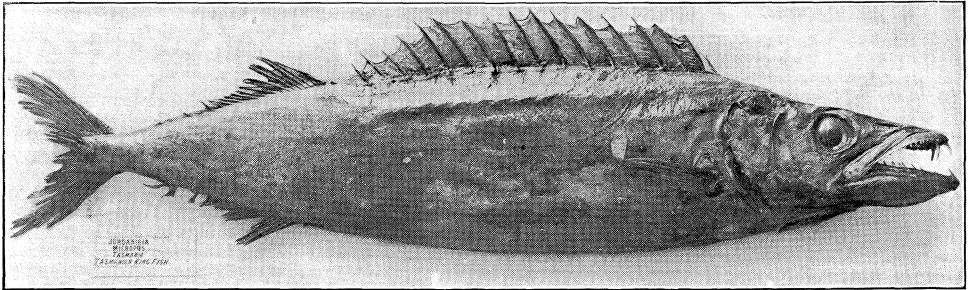
Frank A. McNeill and Gilbert P. Whitley, del. (2).

EXPLANATION OF PLATE XXXIII.

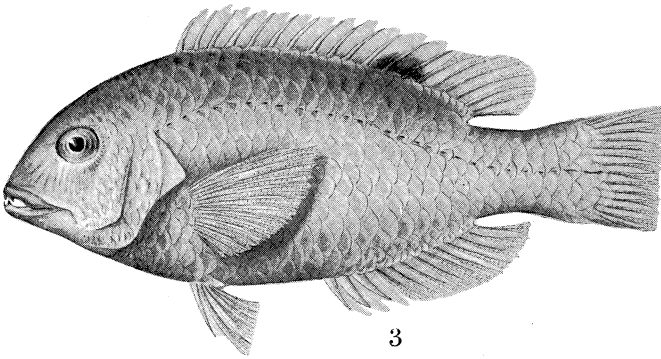
- Fig. 1. *Megalaspis cordyla* (Linnæus). A specimen from Port Jackson, New South Wales.
- Fig. 2. *Rexea solandri* (Cuvier and Valenciennes). Holotype of *Thyrsites micropus* McCoy from Tasmania.
- Fig. 3. *Chærodon monostigma* Ogilby. Cotype from Pine Peak, Queensland.
- Fig. 4. *Chærodon ambiguus* Ogilby. Cotype from off Double Island Point, Queensland.



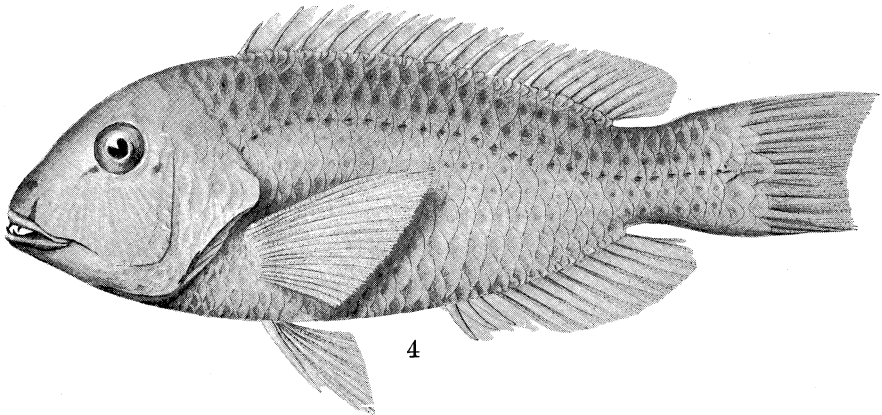
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4

David G. Stead, photo. (1).
Anthony Musgrave, photo. (2).
Phyllis F. Clarke, del. (3-4).

EXPLANATION OF PLATE XXXIV.

Fig. 1. *Amphiprion mccullochi* Whitley. Holotype from Lord
Howe Island.

Fig. 2. *Parma mccullochi* Whitley. Holotype from Rottnest
Island, Western Australia.

