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STUDIES IN ICHTHYOLOGY. No. 13.*

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(Figures 1-11.)

Family LEPTOCEPHALIDAE.

Genus *Fimbriceps* Whitley, 1946.

Orthotype, *F. umbrellabia* Whitley.

A remarkable genus of conger eels with skinny filaments protruding from the snout and over the eyes. Top of snout not swollen. Lips not turned upwards into a flange, but overhanging and with well developed labial bones. Anterior patch of teeth of upper jaw exposed when mouth is closed. Fine teeth on jaws and vomer, none much enlarged. Caudal pointed. Colour plain, brownish.

This combination of characters distinguishes *Fimbriceps* from all the fifty or so nominal genera of congers.

Fimbriceps umbrellabia Whitley, 1946.

Fimbriceps umbrellabia Whitley, Austr. Mus. Mag., ix, 2, 1946, p. 62, fig.

Head (17 mm.) 6.5, depth (7) 16. preanal length (39) nearly 3 in total length (112). Eye (4.4) 3.8, snout (5) 3.4, pectoral (6) 2.8 in head. Head conic, rather bulbous posteriorly. Eyes large, rounded pyriform. Interorbital very narrow.

About 9 or 10 branchiostegal rays each side. No jugostegalia. Opercular elements discernible through skin. Some mucus canals from eye to near gill-opening and down front of operculum. Gill-slits moderate openings before pectoral fins, directed downwards and backwards, and sealed below across a broad isthmus. Mouth reaching below posterior half of eye. Upper jaw the longer. Two keels along chin. Bands of fine pointed teeth on jaws, smaller bluntly conic ones cross roof of mouth, this vomerine patch apparently not extending backward to eye but tapering to cease before the free, well-developed tongue. The anterior teeth in upper jaw are slightly enlarged and form a group exterior to the mouth-opening. Anterior teeth of lower jaw deflected slightly outwards; a couple of posterior teeth in upper jaw are antrorse.

I am unable to distinguish the nostrils, but they are probably before the eye and over the lip anteriorly as usual in congers. The upper lip is not turned upwards into a flange. There are two overhanging flaps of skin over upper jaw, the uppermost simple, the second scalloped and lying over the lips, which are supported by well-developed labial bones.

The snout is not swollen, but pointed, and bears several forwardly directed filamentous processes about one millimetre long. Two similar processes over eye, and some small ones below sides of lower jaw.

Body elongate, tapering, compressed, naked. Tail attenuated, nearly twice as long as rest of fish. Doubtless through abrasion during trawling, much of the skin is missing and the lateral line structure cannot be made out, but there are no white-spotted pores as in some congers.

* For No. 12 see RECORDS OF THE AUSTRALIAN MUSEUM, Vol. xx, Part 4, March, 1939, pp. 264-277, figs. 1-3.

The author is indebted to the Council of the Royal Zoological Society of New South Wales for the loan of blocks from his forthcoming "Fishes of Australia" used in Figures 2, 4, 5, 7 and 9 of the present paper. All figures have been drawn by the author and, unless otherwise stated, the line accompanying each represents one inch.

Dorsal fin originating behind head, over adpressed pectorals. The (a-d) percentage is 14.22. Anal beginning behind vent. Both fins of many short, spaced rays, joined to the pointed caudal, which is 2 mm. long. Pectorals pointed.

Colour (in alcohol) dark brownish above, yellowish to silvery below. Some dark brown spots on cranium and operculum and smaller infuscations along upper jaw and before eye along snout. Fins pale, without black margins.

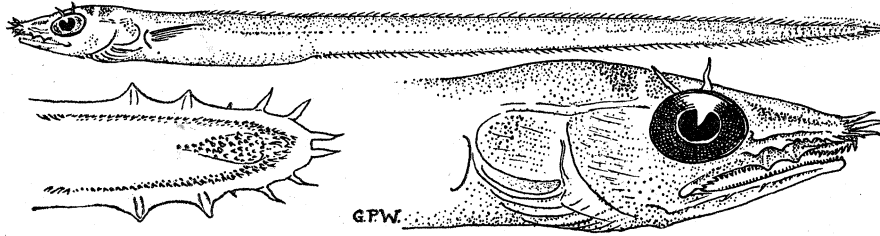


Figure 1.—Fringe-nosed Conger, *Fimbriceps umbrellabia* Whitley. Holotype from off Broughton Id., New South Wales.

Described and figured from the larger of two examples, 90 to 112 mm. long (4½ ins.). Austr. Mus. regd. no. IA.6895 (holotype and paratype).

Loc.—Three miles off Broughton Island, New South Wales; seined in 45 to 50 fathoms; 29 May, 1936. Collected by Mr. Melbourne Ward.

Another example (IA.8013) was obtained by Dr. D. L. Serventy from the stomach of a Tuna (*Thunnus maccoyii*) at Twofold Bay, N.S.W., and was partially digested.

Bassanago, gen. nov.

Orthotype, *Bassanago bulbiceps*, sp. nov.

A genus of deep-sea conger eels with the eyes large, supero-lateral; anterior nostrils, with tubes, below front of snout; cleft of mouth extending to middle of eye. No upper lip developed. Lower jaw much shorter than upper. Teeth small, conic, in bands on jaws and on vomer; anterior intermaxillary teeth exposed when mouth is closed. Head much shorter than trunk. Vent anterior to middle of length. Lateral line not branched. Dorsal originating over anterior part of pectoral. Coloration plain, mostly pale.

Differs from *Bathycongrus* Ogilby, 1898, in proportions of head and trunk and in having a short, bulbous snout. *Rhynchoconger* Jordan and Hubbs, 1925, is diagnosed as having the "premaxillary" patch of teeth larger than the vomerine patch, and my genus also differs in having a blunter snout, different dorsal origin and colouring of fins. From all other genera in the family the novelty is distinguished by the combined characters in the diagnosis above.

Bassanago bulbiceps, sp. nov.

Diagnosis.—A deep-sea conger eel which differs from all other Australasian species by having the dorsal fin arising above the pectoral bases; the snout is broad and swollen.

Description.—Head (38 mm.) 6.8, depth (13) 19.8 in total length (258). Depth of body equal to its width (13). Eye (8) 4.7, snout (10) 3.8, gape (11) equals pectoral (11) 3.4, interorbital (3) 12.7, gill-opening (6) 6.3 in head. Distance between gill-slits, below, 9 mm. Snout to dorsal origin 39. Preanal length about 100. Tail 158. Level of dorsal origin to that of anal 61; (a-d) percentage = 23.6%.

Head swollen, bulbous, spongy, inflated at gills. Snout bluntly truncate, overhanging mouth; without fleshy processes but with some microscopic papillae. Gape broader

than long, rictus barely reaching below posterior half of eye. No flange or fold on upper lip, which continues from mouth to skin of head without interruption. Lower lip developed. Anterior nostrils short tubes opening downwards below snout. Posterior nostrils rather large, just before middle of eye. Bands of small conic teeth on jaws, intermaxillaries and vomer. Anterior teeth external to mouth. The vomer teeth do not extend back as far as eye. Ten branchiostegal rays can be counted through the skin.

Body cylindrical anteriorly to strongly compressed posteriorly. Lateral line conspicuous, not branched, the numerous pores joined to form a continuous channel from head to tail. Myocommas conspicuous except posteriorly; there appear to be at least 150. Vent large, just before anal fin.

Dorsal originating over posterior part of pectoral base, becoming much higher posteriorly and confluent with the long rounded caudal. Pectorals small, pointed, adipose.

Colour, after long preservation, straw-yellowish. Eyes, gill-region and viscera bluish. Vent black. Unpaired fins with broad median dusky (brownish or blackish) area, marginally whitish. Minute brown infuscations on top of head and body.

Described and figured from the unique holotype, a specimen 258 mm. or nearly 10¼ inches in total length.

Loc.—Eastern slopes of Bass Strait, Victoria; 200 fathoms. F.I.V. "Endeavour", 11 December, 1913. Registered no. E.4633.

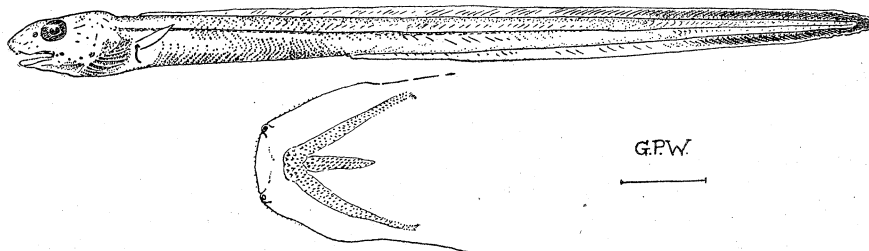


Figure 2.—Swollen-headed Conger, *Bassaniago bulbiceps* Whitley. Holotype from east of Bass Strait. Also nostrils and teeth of upper jaw.

Family MURAENIDAE.

Fimbrinares, gen. nov.

Orthotype, *Fimbrinares mosaica*, sp. nov.

A large reef-eel or moray which differs from other Muraenidae in having the anterior nostrils in short tubes and the posterior nostrils with conspicuous tassel-like exterior fringes. The intermaxillary teeth are curved, depressible fangs in 2 to 3 rows, and there are more than 25 teeth along each side of jaws.

Otherwise much as in *Gymnothorax* of authors, *Aemasia* Jordan and Snyder, 1901, and *Enchelycore* Kaup, 1856.

Fimbrinares mosaica, sp. nov.

Head (150 mm.) 6.8, depth (86) 12 in total length (1033).

Snout to vent (491) less than tail (542). Eye (11) 13.6, snout (32) nearly 4.7, gape (71) 2.1, interorbital (20) 7.5, gill-opening (11.5) 13.9 and width of body (50) 3 in head.

Snout and jaws long, top of head not much swollen. Eye small, covered by skin, subequal to gill-opening. Interorbital broad, flat. Anterior nostrils with short tubes. Posterior nostrils rimmed with conspicuous tassel-like superior fringes, formed by numerous laminae, above and before eyes. Lips entire. Gape reaching well beyond eye.

Mouth not completely closing because of the great development of the long, entire, subulate teeth. The latter are strong, depressible fangs which occur in the jaws as an outer row of smaller teeth with an inner single to double row of longer fangs. Intermaxillary teeth in one to three rows, their bases extending back to level of eye. No median vomerine teeth behind eye-level. No molars. Throat furrowed.

Body deep and rather robust, becoming compressed and blunt towards end of tail. Skin smooth and slimy. Anus small with small separate urinogenital pores, and no radiating plicae, situated in anterior half of fish. Vertical fins fairly well developed as adipose folds. The dorsal origin is before level of gill openings, its height only about one-fifth or one-sixth of body-depth, except towards end of tail, where it is about one-half same. Anal similar to but lower than dorsal, originating a short distance behind vent. Caudal embedded in adipose tissue round end of tail.

Colour in formalin pearly greyish, widely reticulated with a series of open, chain-like, dark purplish-brown markings over body and fins, tending to form about 24 cross bands. The chain-like network breaks up into marbling or mottling in some places, becoming more diffuse or irregular on head and breast, where the pearly ground colour predominates. No dark blotch at corner of mouth or at gill-opening. Nostril fringes yellow.

Described from the unique holotype, 44 inches long. Austr. Mus. regd. no. IA.3926.

Loc.—Caught on the ocean side of Point Banks, near Botany Bay, New South Wales, in 5 feet of water amongst rocks by Mr. H. Warner on 23rd June, 1929; it took 1½ hours to land.

Distinguished from other reef eels by its fringed posterior nostrils and numerous intermaxillary fangs.

Genus *Lycodontis* McClelland, 1844.

Lycodontis longinquus, sp. nov.

Head (91 mm.) 7.9, depth (40) 18 in total length (720). Snout to vent (342) shorter than tail (378). Eye (8) 11.3, snout (15) 6, gape (33) 2.7, interorbital (10) 9.1, gill-opening (7) 13, and width (28) 3.2 in head.

Top of head slightly swollen. Snout blunt, rather long. Eye covered by skin, larger than gill-opening. Anterior nostril with tube; posterior pore-like near top of eye. Lips minutely papillate. Gape reaching well beyond eye, mouth not completely closing. Spaced, compressed, entire teeth in single rows on jaws and vomer. Intermaxillary teeth fang-like, not depressible like the vomerine fangs. No molars. Throat furrowed.

Body elongate, compressed, particularly at end of tail. Skin smooth and tough. Anus large, with radiating plicae, in anterior half of fish. Vertical fins developed, the dorsal originating over head and continuing back as a low fold and becoming higher over posterior part of tail. Anal fin similar, commencing behind vent. Caudal reduced to a few short rays sandwiched between posterior dorsal and anal rays.

Colour in alcohol fairly uniform dark chocolate brown, with some ill-defined traces of lighter brown mottling. Eye greenish-silvery, surrounded by dark brown ring. Gill-opening yellowish. Dorsal, anal and end of tail blackish posteriorly. No special colour-markings.

Described from the unique holotype, 720 mm. or 28 inches long, from north of Mackay, Queensland (Mr. Charles Volskou). Austr. Mus. regd. no. IA.6953.

Characterized by its dull brownish coloration, the single rows of compressed fangs, and by its proportions.

Family SERRIVOMERIDAE.

Bertinulus, gen. nov.

Orthotype, *Oxystomus hyalinus* Rafinesque, Ind. ittiol. Sicil., May, 1810, pp. 49 and 62, pl. = *Bertinulus hyalinus*.

New name to replace *Oxystomus* Rafinesque, 1810 (*loc. cit.*), which is preoccupied by *Oxystomus* Fischer de Waldheim, 1803, a genus of mammals, and *Oxystoma* Dumeril, 1806 (Coleoptera) *non* Blainville, 1825 (Mollusca). The fish genus has generally been regarded as a juvenile Snake Eel (*Leptognathus*) but Bertin (*Comptes Rendus Acad. Sci. Paris*, cc, 1935, p. 1878) has recently demonstrated its distinctness and alliance with the Serrivomeridae.

Two species: *Bertinulus hyalinus* (Rafinesque) and *Bertinulus danae* (Bertin).

Family SYNGNATHIDAE.

Maroubra, gen. nov.

Orthotype, *Maroubra perserrata*, sp. nov.

Axis of the head in line with that of the body, which is slender, not compressed. Eyes not prominent. Snout ridged, broader than deep, not spiny, about half the head. The entire superior rostral ridge rises gently to the forehead. Operculum with transverse keel, curved, concave side upwards, with radii. Occiput with entire crests. Trunk heptagonal, tail tetragonal, equal to about half total length. Shields with edges prominent, entire, with a backwardly directed spine on each crista of each annulus. No cutaneous appendages apparent. Prenuchal and nuchal shields present, also intermedial scutella. Disposition of body-ridges as in no. 7 of Duncker's scheme (*Mitt. Zool. Mus. Hamburg*, xxxii, 1915, p. 14, fig. 7), viz., median cristae of trunk continuous with superior cristae of tail, inferior cristae of trunk and tail continuous, superior cristae of trunk and tail discontinuous. Broodpouch probably subcaudal.

Dorsal fin mostly on tail, its base not elevated. Pectorals well developed. Anal obsolete. Caudal very small, the tail not prehensile.

The spiny ridges to the body and tail-rings and the disposition of the cristae distinguish the new genus from other Syngnathidae, as well as the formulae given below.

Maroubra perserrata, sp. nov.

General characters as described for genus.

D. 21, A. 0, P. circa 18, C. 6. Rings $18 + 26 = 44$. Subdorsal ann. $1 + 5$.

Head (9 mm.) 6.6, depth (2.5) 24 in total length (60). Snout (4.5) half head and greater than postorbital (slightly less than 3), which is about twice eye-diameter (1.5). Length of dorsal base (6) 1.5 in head.

Orbits not prominent. Interorbital concave, transversely striate. Rostrum with thin, elevated, entire ridge, separated by a pair of spines from the supraorbital ridges. Curved nuchal ridges.

Preanal length 31, postanal 29 mm. Dorsal ridges of trunk and tail discontinuous. Median ridge of body connecting with superior ridge of tail. Inferior ridges of trunk and tail continuous. Ventral carina present. Each body-ridge forming a sharp, obliquely receding spine on each annulus. Oval scutella present between the plates.

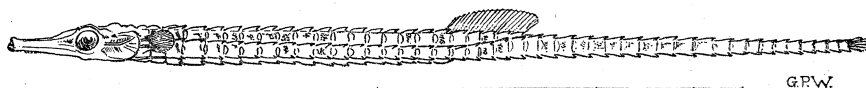


Figure 3.—Sawtooth Pipefish, *Maroubra perserrata* Whitley. Holotype from Maroubra, New South Wales.

No broodpouch in this specimen, but the organ would doubtless be subcaudal since the strongly developed ventral carina would not permit it to occur below the body. No cutaneous appendages. Dorsal base not elevated.

Colour in alcohol, yellowish with darker brown or reddish markings extending along middle of head and sides. Throat plain. Eyes bluish.

Described and figured from the unique holotype, a specimen 60 mm. or 2½ inches long. Austr. Mus. regd. no. I.12659.

Loc.—Maroubra Beach, near Sydney. New South Wales; Allan R. McCulloch, Sept., 1912.

Distinguished from other pipefishes by the formulae given above, the disposition of the body-ridges, and the well-developed spines on each ring.

Pugnaso, gen. nov.

Orthotype, *Syngnathus curtirostris* Castelnau, 1872.

Differs from the much larger, typical *Syngnathus (acus* L.) in having the snout very much shorter and deeper, fewer dorsal rays (20 to 24 instead of 36 to 45), fewer pectoral rays, and brood-rings 16 instead of 25 to 28, besides minor details. No opercular ridge. For full description and figure, see Waite and Hale, Rec. S. Austr. Mus., i, 1921, p. 300, fig. 42.

Filicampus, gen. nov.

Orthotype, *Syngnathus superciliaris* Gunther, 1880.

Differs from *Syngnathus* in having a conspicuous filament over eye, fewer dorsal rays, fewer tail-rings, much shorter snout, and in proportions generally.

Mitotichthys, gen. nov.

Orthotype, *Syngnathus tuckeri* Scott, 1942.

Snout shorter than in true *Syngnathus* and with a median crest. Rings 23 + 42. No opercular keel, only radiating striae.

Dorsal fin situated mostly over body, with more rays (35) than most Australian pipefishes.

Broodpouch on 12 rings (instead of 25 or more as in true *Syngnathus*).

Larvicampus, gen. nov.

Orthotype, *Festucalex (Campichthys) runa* Whitley, Austr. Zool., vi, 1931, p. 313 = *Larvicampus runa*.

D. 14. Rings 13 to 14 + 46 to 47. Subdorsal rings 3.

Snout very short, tilted upwards. No opercular keel. Ridges rather obscure, median ones continuous with inferior cristae of tail. Rings with a minute tubercle at their hinder ends. Minute tentacles on body, broodpouch and tail. Length less than four inches.

Differs from true *Campichthys (tryoni)* in having more than 45 tail-rings instead of about 35, fewer dorsal rays, snout very short, and median cristae continuous with inferior caudal ones.

Stipecampus, gen. nov.

Orthotype, *Ichthyocampus cristatus* McCulloch and Waite, Rec. S. Austr. Mus., i, 1918, p. 40, fig. 26 = *Stipecampus cristatus*.

The genotype of *Ichthyocampus* Kaup, 1853 [= *Hippichthys* Bleeker, 1849], is *Syngnathus carce* Hamilton Buchanan (Acc. Fish. Ganges, 1822, p. 13), an Indian species which differs so much from the South Australian *cristatus* that the latter cannot be maintained in the same genus. A Calcutta specimen of *carce* differs from *cristatus* as follows:

- A. Snout subequal to postorbital, with three ridges above. Interorbital concave. About 23 dorsal rays. Annuli 16 + 39 or 40. Subdorsal rings 6, all on tail. Head about 2 in trunk *Hippichthys (carce)*
 AA. Snout much shorter than postorbital, with elevated crest. Interorbital flat, with median ridge. More than 25 dorsal rays. Annuli 19 to 20 + 40 to 41. Subdorsal rings 1 to 2 on trunk + 5 on tail. Head about 3½ to more than 4 in trunk .. *Stipecampus (cristatus)*

Hypselognathus, gen. nov.

Orthotype, *Histiogamphelus rostratus* Waite and Hale, Rec. S. Austr. Mus., i, 1921, p. 303 = *Hypselognathus rostratus*.

The name *Hypselognathus* was suggested in manuscript by the late E. R. Waite as long ago as 1919 but has not hitherto been published. The type-species is readily distinguished from all the species of *Histiogamphelus* by the extraordinarily long snout, and increased number of dorsal rays (32 to 35 instead of 23 or 24) and tail-rings (44 instead of 27 to 36). Subdorsal rings 1 to 3 + 7 to 8. Upper part of snout raised into a knife-like ridge. Young with anterior opercular keel and serrated tail-ridges, but these characters disappear with age.

***Histiogamphelus maculatus robensis*, subsp. nov.**

D. 24, P. 14, A. 3, C. 8. Rings 20 + 36. Subdorsal annuli $4\frac{1}{2}$ + 3. Female, so no brood-rings.

Head (11.3 mm.) 3.4 in length of trunk (39) or 8.3 in total length (94.5). Eye (2) more than 2 in snout (4.3) which is 2.6 in head and slightly less than postorbital (5). Trunk about two-thirds tail (55). Caudal length equal to snout. Pectoral length, 3 mm. Depth 3.3 mm. below dorsal fin, much more than width (2.5).

Rostral crest roundly sloping from behind lips to a slight dip before attaining its greatest height over posterior half of snout, after which it descends gradually to between two posteriorly divergent ridges which cease on the reticulated interorbital which is sunken between the supraorbital ridges which are distinct from the rostral. A prenuchal and two nuchal scutes, not joined to rostral crest which ceases above front of eyes. No median dorsal ridge. A simple, slightly curved opercular keel (concave side downwards) and forty or more radiating ridges. The ridge defining the upper margin of the snout below the rostral crest slopes down towards middle of eye or little below that level. The supraorbital ridges touch the profile.

Dorso-lateral body-ridges ending on each side of dorsal base, on second tail-ring, not continuous with dorso-lateral tail-ridges which extend to upper part of last body-ring, over but separate from the free end of the median body-ridge. Ventro-lateral ridges of body continuous with inferior tail-ridges. Ventral carina on trunk.

Dorsal base elevated anteriorly, less so posteriorly. The dorsal rays are difficult to count but do not appear to exceed 24. Anal minute. Caudal lanceolate.

Colour in alcohol dark brownish with irregular darker markings. Dark chocolate base to dorsal rays. Caudal blackish. Pectoral brown basally, rest yellow. Some rings with dark brown spots and often a spot at middle of ring on ridges.

Described from the holotype of the species, a female 94.5 mm. or 3.7 inches long, kindly lent for the purpose by Mr. H. M. Hale, Director of the S. Australian Museum, Adelaide, where the specimen is regd. no. F.2611.

Loc.—Near Robe, south-eastern South Australia; Mr. Bruce Hendon, 17 Feb., 1947.

The new subspecies seems closest to *H. maculatus* Hale, 1939, which, however, has notch further back in rostral crest, fewer tail-rings and pectoral rays, no opercular keel, less sculpture and different proportions. Also similar to *H. gallinaceus* Hale, 1941, but comparatively stouter in build, with longer caudal fin, rostral crest not so elevated and not continued beyond interorbital, supraorbital touching profile, and snout longer. *H. cristatus* (Macleay, 1881) has only 18 + 27 rings, according to the original description; the type has decomposed. *H. briggsii* McCulloch, 1914, the genotype, has a high concave rostral crest, no opercular keel, and shorter caudal fin. *H. meraculus* Whitley, 1948, has caudal fin much shorter than the rather long snout and different head-proportions.

Genus *Parasyngnathus* Duncker, 1915.

Parasyngnathus Duncker, Mitt. Naturh. Zool. Mus. Hamburg, xxxii, 1915, pp. 14, 29 and 79. Orthotype, *Syngnathus argyrostictus* Kaup, Cat. Loph. Fish. Brit. Mus., 1856, p. 33 *ex* Kuhl and van Hasselt MS., Java.

Parasyngnathus wardi, sp. nov.

D.22. A.2. P.15. C.9. Rings 14 + 36. Subdorsal 1 + 5.

Head (10 mm.) 8.4, depth (4) 21 in total length (84). Snout, 4.5 mm.; eye, 1.5; postorbital, 4; width of body, 2.3; preanal length, 29; postanal, 55; length of dorsal base, 6.5; length of caudal fin, 3.3.

Snout in line with axis of head and body, sculptured laterally and surmounted by a thin, entire, gently rising keel which ceases between the eyes and is separate from supraorbital ridges. Prenuchal and nuchal crests present. Operculum crossed by a straight keel with fine, interrupted radii. Eyes not prominent, each preceded by a spine, otherwise no spines on head.

Body heptagonal, rather deep; tail tetragonal. Superior ridges of trunk and tail discontinuous. Medial body ridge dipping and just joining tail ridge over vent. Inferior ridges of body and tail continuous. Ventral carina present. Ridges well marked, but without spines or appendages. Scutella present. None of my specimens has a brood-pouch but this organ would doubtless be subcaudal.

Dorsal base not raised. Anal very reduced. Caudal small, middle rays longest. Pectorals developed.

Colour in alcohol yellowish-brown with some darker brown marblings on snout, head and body, tail and dorsal fin. Throat plain. Ventral carina with dark brown crest. Caudal with blackish central area, lighter around same.

Described from the holotype, evidently a female (as it has no brood-pouch), the largest (3¼ inches) of seven specimens. Austr. Mus. regd. nos. IB. 1911 (holotype) and 1912 (paratypes).

Loc.—Lindeman Island, Queensland; Mr. Melbourne Ward.

The six paratypes show the following variation: D.22 to 24. Rings 13 + 35 in all six. Subdorsal rings 0 to 1 + 4 to 5.

The low numbers of dorsal fin-rays and ring-counts and the more anterior situation of the dorsal fin separate the new species from *P. altirostris* (Ogilby, 1890), its nearest ally, and other species of *Parasyngnathus*. *Ozleyana parviceps* (Ramsay and Ogilby, 1886) also has a much shorter snout. Types directly compared at the Australian Museum.

Parasyngnathus howensis, sp. nov.

D.30; A.4; P.15; C.8. Rings 16 + 35, Subdorsal rings 1 + 7. Brood-rings 14.

Head (9 mm.) 9.1, depth (4.2) 17.1 in total length (82). Snout, 4 mm.; postorbital, nearly 4 mm.; eye, nearly 1 mm.; width of body, 3.5; preanal length, 33; postanal length, 4.9; length of dorsal base, 10.5; of caudal fin, 2.

General characters as in *P. altirostris* and *P. wardi*, but opercular keel reduced to anterior half of operculum which has well-defined radii. Median body-ridge ending on middle of sides above vent.

Colour in alcohol pale yellow. A brown bar along snout through eye to operculum. Series of brown spots along ridges where they join rings. Ventral carina, caudal fin, and broodpouch pale yellow. Eye bluish. Throat plain.

Described from the male holotype, 82 mm. or nearly 3¼ inches long. Austr. Mus. regd. no. IA.5473.

Loc.—Lord Howe Island.

Distinguished mainly by its formulae and reduced opercular keel.

Campichthys tryoni lindemanensis, subsp. nov.

Ichthyocampus tryoni Ogilby, Rec. Austr. Mus., i, 1890, p. 56. Moreton Bay.

D.20. P.8. C.11?. Rings 14 + 40. Subdorsal rings 1 + 5.

Head (7 mm.) 12, depth (3) 28 in total length (84). Snout, 3 mm.; eye, less than 1; postorbital, nearly 4; width of body, 2.5; preanal length, 24; postanal length, 60; length of dorsal base, 7; length of caudal fin, 2.

Snout in line with axis of head and body, short, little sculptured, its superior ridge horizontal, not elevated, continuous with supraorbital ridges. Head covered by skin, nuchal crests obsolete. Opercular keel obsolete and with obsolete radii (but compare remarks on variation below). Eyes small, not prominent. No spines or appendages.

Body heptagonal, the ridges rather rounded and weak, and the annuli poorly marked. None of the ridges toothed. Superior ridges of trunk and tail continuous. Median body-ridge ceasing at middle of sides before level of vent. Inferior ridges of trunk and tail continuous. Ventral carina blunt. Scutella present. A conspicuous l. lat. pore on each side of each ring. Broodpouch subcaudal, on first thirteen tail rings, with sides coalesced over embryos.

Dorsal base not raised. Anal overgrown by broodpouch. Pectoral reduced. Caudal small.

Colour in alcohol brown to dark chocolate with darker spots around orbit, on body, etc. Throat plain; a dark brown band along ventral carina. Caudal dusky with light edges. Broodpouch with dark longitudinal striations.

Described from the male holotype of the subspecies, an embryo-carrying specimen, 84 mm. or about $3\frac{1}{4}$ inches long. Austr. Mus. regd. no. IA.6134.

Loc.—Lindeman Island, Queensland; collected by Mr. Melbourne Ward from *Zostera* flats on the north-west side of the island, July, 1934.

Also four smaller paratypes of both sexes (regd. nos. IB.1909–1910) from same place and collector. Females are lighter brown in colour with dark brown bar from chin, through eye, and across operculum. Some have short black streaks on the body-rings. A vestigial anal fin is present. In males the median ridge unites with the inferior ridges above the vent. In females, it ends on the median line on the first or second tail-ring. A curved keel is present on anterior half of operculum, its concave edge uppermost in some specimens, but it is vestigial in others or covered with skin. Paratypes have D. 18 to 20, Rings 13 to 16 + 35 to 41, Subdorsal Rings 1 + 4 or 2 + 3, Broodrings 12.

Distinguished by the short snout, smooth head, weak rings and ridges, small pectoral and anal fins. Very near *Campichthys tryoni* (Ogilby, 1890), but differing in having the ridge on the snout submerged by skin, longer tail and more tail-rings. Ogilby's holotype has the following characters: D. 18?, A. 2 or 3, P. 8, C. 10, rings 17 + 36, subdorsal rings 1 + 4, broodpouch rings 14. Head (7 mm.) 10, depth (3) 23 in total length (70). Snout, 2 mm.; eye, 2; postorbital, 3; width of body, 3; preanal length, 24; postanal length, 46; length of dorsal base, 6; of caudal fin, nearly 2. Snout with elevated, undulating and entire edges, laterally sculptured, superior ridge, continuous with supra-orbital ridges and not obscured by skin. Nuchal crests practically obsolete, merging into sculpture of vertex. Operculum with very short anterior keel and interrupted radii. Body-ridges and rings well marked. Posterior scutella elongate-lenticular. Median ridge ending on 2nd (left) or 3rd (right) tail-ring.

A series of fifteen small specimens collected by Mr. Melbourne Ward at Southport, Queensland, in October, 1937, agree with the typical southern species, having D. 17 to 20, rings 16 to 17 + 33 to 36, subdorsal rings 1 to 2 + 2 to 4, broodpouch rings 13 to 17. A ridge is developed over the snout of each.

TRIPTEROPHYCIDAE, fam. nov.

A new family of the Order Anacanthini, intermediate in some respects between Macrouridae and Gadidae, agreeing in general aspect with the former but differing in having three dorsal fins and an isocercal true caudal fin with small peduncle. The third dorsal fin is more reduced than the second dorsal of most Macrouridae, being much less developed than the anal. The single row (except anteriorly) of incisor teeth in each jaw contrasts sharply with the bands of teeth usual in the other families. The blunt snout, lack of scaly ridges on head, few-rayed ventrals, and black glandular area around and before the vent are noteworthy characters. The dorsal rays are not barbed and the small scales are deciduous and have not the sculptured spines of most Macrouridae.

One genus originally described by Boulenger as occupying "an isolated position in the Phycine group of the Gadidae, being the only one to combine a tripartite dorsal fin with a single anal".

Genus *Tripteroptychys* Boulenger, 1902.

Tripteroptychys Boulenger, Ann. Mag. Nat. Hist. (7), ix, May 1, 1902, p. 335. Haplotype *T. gilchristi* from South Africa.

Id., Boulenger, Mar. Invest. S. Africa, ii, 1904, p. 168, pl. xii.

Id., Brauer, Wiss. Ergebn. Deutsch. Tiefsee Exped. Valdivia, xv, 1, 1906, p. 275, text-fig. 171.

Id., Gilchrist, Spec. Rept. S. Africa. Fish. Mar. Surv. Spec. Rept., ii, 1922, p. 64.

Id., Barnard, Ann. S. Afr. Mus., xxi, 1925, p. 329.

Id., Weber and Beaufort, Fish. Indo-Austr. Archip., v, 1929, p. 11, fig. 4.

General characters as diagnosed for the family. Head rather bulbous, without rough ridges. Body long and tapering, with small deciduous, cycloid scales. Back elevated below second dorsal fin, which corresponds to the first dorsal fin of Macrourid fishes. A small first dorsal fin on the ascending profile and a rudimentary long-based third dorsal fin which, like the better developed anal fin, is distinct from the isocercal caudal. Anal not notched. Vent with glandular organs.

South Africa, N.W. of Sumatra, S. Australia and Victoria. About 150 to 450 faths.

Tripteroptychys intermedius, sp. nov.

Head about as wide as deep, longer than wide, snout bluntly rounded to truncate, nostrils large, adjacent openings with skinny rims, but no barbels, near front of the large eye which is longer than the width of the scaly interorbital. Preorbital shallow. Most of posterior part of head with deciduous scales. No notable muciferous caverns. No spines or sculpturing on the papery skull-bones. Mental barbel short. Jaws reaching below front half of eye, subequal anteriorly. Premaxillary pedicels short and blunt. Maxilla truncate, without supplementary bone.

An even, single row of about forty fixed, compressed, incisor teeth around the outer margin of each jaw, not interrupted at symphysis, where a second row appears in the front part of each jaw. A narrow velum maxillare. No inner series of teeth. No teeth on vomer or palatines. Tongue adnate to floor of mouth. Opercles spineless, entire; preoperculum concealed beneath the skin. Some inconspicuous pores around chin and part of eye. Seven branchiostegal rays. Gill openings wide, gill membranes united across isthmus. No fold of membrane attached to first gill-arch to restrict the gill-slit. Gill-rakers slender, not tubercular, on first gill-arch (2/12 on first gill-arch of a paratype), the longest less than one-third eye-diameter. No slit behind fourth gill-arch. No pseudobranchiae.

Body much deeper than broad anteriorly and very compressed posteriorly. Except for the angularly-raised bases of the first two dorsal fins, the upper profile is almost straight from eye to top of tail; lower profile elongate-convex. Body with moderate to small deciduous scales which are mostly lacking so that it is not possible to count them.

They are apparently cycloid, without rows of spines as in Macrouridae. Lateral line inconspicuous. Belly rather swollen, with flaccid skin, which also invests some of the unpaired fins.

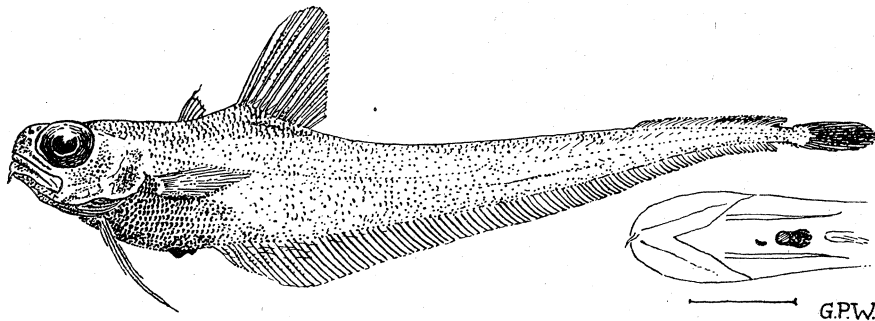


Figure 4.—Grenadier Cod, *Tripteroptychys intermedius* Whitley. Holotype from Great Australian Bight. Also glandular area at vent.

Vent little advanced before anal fin, surrounded by a black area which also embraces a disc-shaped glandular area preceding the urino-genital opening. These organs are doubtless comparable with the anal glands of *Malacocephalus* as described by Hickling,¹ but they are not preceded by any naked depressed areas.

(Dissection of a paratype (IB.1727) reveals 72 vertebrae and 14 ribs. Airbladder a simple bag without horns and with elongated neck anteriorly; it ends below the 19th vertebra. Immature male. It is probable that all the specimens are immature so that the species may grow to a considerably greater size. I am unable to detect any indications of sexual dimorphism in the series before me, but some have the first dorsal rays more produced than in the type.)

Fins: D. 5/13/c.30; A. c. 100; P. 18; V. 4 or 5; C. 13 branched rays.

Three dorsal fins of weak slender rays. The first is small and originates over the pectoral rays and consists of five filiform rays, its base is half its height. The second is similar in position and form to the first dorsal of Macrouridae; its first inch-long ray has a trenchant anterior edge, without barbs; the following rays are branched, the fourth being longest. The third dorsal fin begins inconspicuously as low rays well behind the second and ceases at the caudal peduncle; it is not nearly as well developed as the anal fin which extends (without notable notch or dwarfed rays) from a little behind vent to caudal peduncle. The first five anal rays are simple, most of the remainder are branched. Pectorals pointed, the fourth ray longest but shorter than head without snout, without a peduncle. Ventrals with five filiform rays, more produced than the rays of the other fins, the third and fourth sometimes united. Caudal well developed, elongate-ovate, just separated from the dorsal and anal fins by a very short peduncle; it has thirteen branched rays and several simple external ones.

Colour (in alcohol) brownish-pink. Eyes and viscera blue. Fins pale yellowish or whitish. Brown spots on sides of head and thickly distributed below head. A conspicuous blackish area around vent. Inside of mouth pale brownish. Fins more or less infuscated on the rays; median area of caudal dusky. Middle portions of posterior third dorsal rays dusky. One or more dark brown chromatophores at base of each anal ray.

Described and figured from the holotype of the species, a specimen 207 mm. or 8¼ inches in total length. It is the largest of seven specimens from the Great Australian Bight, trawled by the F.I.V. "Endeavour", south of Eucla in 350 to 450 faths., 14/5/1913. Regd. no. E.3555, on deposit in the Australian Museum.

¹Hickling, *Journ. Mar. Biol. Assoc. (n.s.)*, xiii, 4, 1925, p. 914, pls.; *et ibid.*, xiv, 2, 1926, p. 495 and figs.

Thirteen paratypes 150 to 207 mm. long. were obtained by the "Endeavour" at the following localities:

Great Australian Bight, south from Eucla; 350 to 450 faths., 14/5/1913. (Six specimens, regd. nos. E.3555 (part), IB.1726, 1727 (dissected) and 1728).

Off Victoria (Lat. 38° 10' S. by Long. 149° 55' E.); 190–240 faths., 11/9/1914 (one specimen, E.5505).

Thirty miles S.W. of Gabo Island, Victoria; 240 faths., 12/9/1914 (two specimens, E. 5496–7, the latter being the smallest specimen, 150 mm.).

S.S.E. of Genoa Peak, Victoria, 200 faths., 5/10/1914 (four specimens, E.5503–4).

Range: Victoria and South Australia, 190 to 450 faths.

Suggested vernacular name: Grenadier Cod.

Measurements of largest and smallest specimens.

Dimensions in mm.	Holotype E.3555.	Smallest specimen, E.5497.
Total length	207	150
Length to anus	50	30
Predorsal length (from first dorsal)	40	26
Predorsal length (from second dorsal)	54	37
Length of head	31.5	22
Length of orbit	13	8
Interorbital width	9	6
Depth of suborbital	2	1.5
Orbit to preopercle	8	4
Length of snout	8	5
Length of upper jaw	13	9.5
Length of barbel	3	1.5
Depth of body at second dorsal origin	33	22
Depth of caudal peduncle	3	3
Height of first dorsal fin	9	10
Height of second dorsal fin	28	25
Space between second and third dorsal fin (approx.) ..	74	55
Length of pectoral	23.5	15
Length of ventral	30	21
Length of caudal	15	9.5

Closely allied to *T. gilchristi* Boulenger, 1902, from deep water off Table Mountain, South Africa, but differing in having a steeper, shorter and more rounded snout, comparatively larger eye with consequent different proportions of the eye, interorbital and muzzle in relation to the head. The barbel of the Australian species is less than one quarter the eye-diameter, the third dorsal fin has a shorter base; the anal originates further forward and its anterior rays are longer in typical *gilchristi*. The Australian fish has 18 pectoral rays instead of 15, and the caudal fin is less pointed. However, some variation in fin-counts has been noted by Barnard (1925).

Family GADIDAE.

Subfamily MORINAE.

Genus *Mora* Risso, 1826.

Mora Risso, Hist. Nat. Europe Merid., iii, 1826, p. 224.

Haplotype, *M. mediterranea* = *Gadus moro* Risso, Ichth. Nice, 1810, p. 116, from Mediterranean.

Id. Gunther, Cat. Fish. Brit. Mus., iv, 1862, p. 341.

Id. Holt, Sci. Proc. Roy. Dublin Soc., (2) vii, 1891, p. 122.

Id. Holt and Calderwood, Trans. Roy. Dublin Soc., (2) v, 1895, p. 436, pl. xxxix, fig. 3, pl. xlv, figs. A and A' (q.v. for refs. and synon.).

Id. Murray and Hjort, Depths of the Ocean, 1912, p. 400, fig. 278.

Id. Waite, Trans. N. Zeal. Inst., xvi, 1914, p. 128.

Id. Saemundsson, Vidensk. Medd. nat. For. Kjobenh., lxxiv, 1922, p. 166.

Id. Benham, Otago Univ. Mus. Ann. Rept., 1925 (1926), p. 6.

Id. Oliver, Rept. Domin. Mus. Wellington, 1941, p. 8.

***Mora dannevigii*, sp. nov.**

D. 8/49, A. 19 + 3 + 17, P. 19, V. 6, C. 22 branched rays. L.lat. circa 60. Tr. 6/14 to 16.

Head (55 mm.) 4.4, depth (47) 5.1, length of caudal (25) 9.6 in length (242). Eye (23) 2.4, snout (13) 4.2, and interorbital (11) 5 in head. Snout to vent 108 mm.

Head broadly rounded. Mouth extending below middle of the large elliptical eye. Interorbital space flat. Barbel present. Upper jaw the longer. Small, subequal, curved teeth in bands on jaws, not separated by grooves. Similar teeth in two vomerine patches. Gill-rakers slender and spinate, 4/11 on first branchial arch.

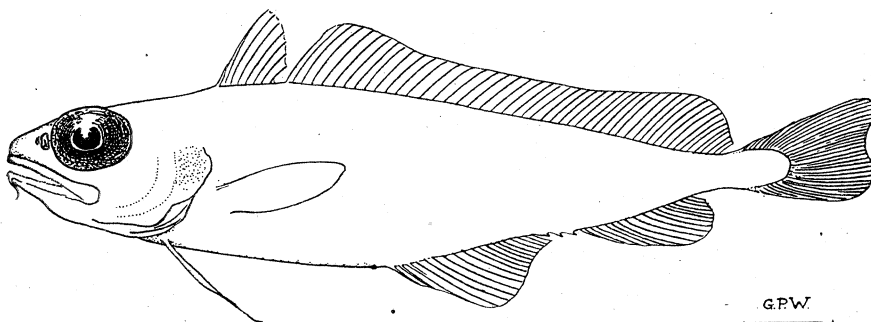


Figure 5.—Ribaldo, *Mora dannevigii* Whitley. Holotype from Great Australian Bight.

Body robust anteriorly, tapering to caudal peduncle whose depth is subequal to interorbital. Head and body with deciduous scales; lateral line complete with about sixty scale-pockets. Peritoneum black. Airbladder extending back to 24th vertebra. Vertebrae 53.

Two dorsal fins, the first of eight rays, the second of 49. Only some of the rays equal the eye in length. First anal originating nearer snout than caudal, with about nineteen rays, followed by a few dwarf rays between it and the second anal, which is smaller. Pectoral rather low, not reaching level of vent. Ventrals with six rays, filiform, longer than postorbital, but not greatly elongated. Caudal forked, upper lobe longer.

Colour after long preservation, generally pinkish to fleshy with blue tinges on opercles, body and eye. Fins pale yellowish with some dusky brown on first dorsal fin and anterior edge of second dorsal. Vent and inside of mouth, body and gills black.

Holotype and seven paratypes, 7¼ to 9¼ inches in total length (regd. nos. E.3544 and IB.1729-31) from the Great Australian Bight: Long. 129° 28' E., South Australia; 350 to 450 faths. F.I.V. "Endeavour", 14 May, 1913. Preserved by H. C. Dannevig and deposited in the Australian Museum.

From the Old World type of the genus, *Mora moro* (Risso), generally called *M. mediterranea* Risso, and of which Holt and Calderwood (Sci. Trans. Roy. Dublin Soc., (2) v, 1895, p. 436, pl. xxxix, fig. 3, pl. xlv, figs. A-A') have given a thorough account, the Australian species differs in having slightly different proportions, fewer lateral line scales (about 60 instead of 87 to 95), barbel not black, fewer vertebrae, and in its paler coloration.

The larger eyes, slenderer body and fewer scales also distinguish the new Australian species from *Mora pacifica* Waite (Trans. N. Zeal. Inst., xlv, 1914, p. 128, pl. v) from New Zealand.

Subfamily GADINAE.

Genus *Merlangius* Geoffroy, 1767.

Merlangius Geoffroy, Descr. 719 Plantes et 134 animaux, 1767, p. 401, pl. 661. *Genus caelebs*. Logotype, *Gadus merlangus* Linné, by present designation = *Merlangius merlangus*, comb. nov.

Geoffroy's name is earlier than *Merluccius* or *Merlangus* Rafinesque, 1810; *Stomodon* Mitchill, 1814; *Polydatus* Gistel, 1847; and *Merlus* Guichenot, 1849 (preocc.) and should be used in their stead.

Family DIRETMIDAE.

Paradiretmus, gen. nov.

Orthotype, *Paradiretmus circularis*, sp. nov.

Allied to *Diretmus* but differs in having the anterior dorsal and anal rays spinous and preceded by a procumbent spine, the preoperculum is not produced so far down-

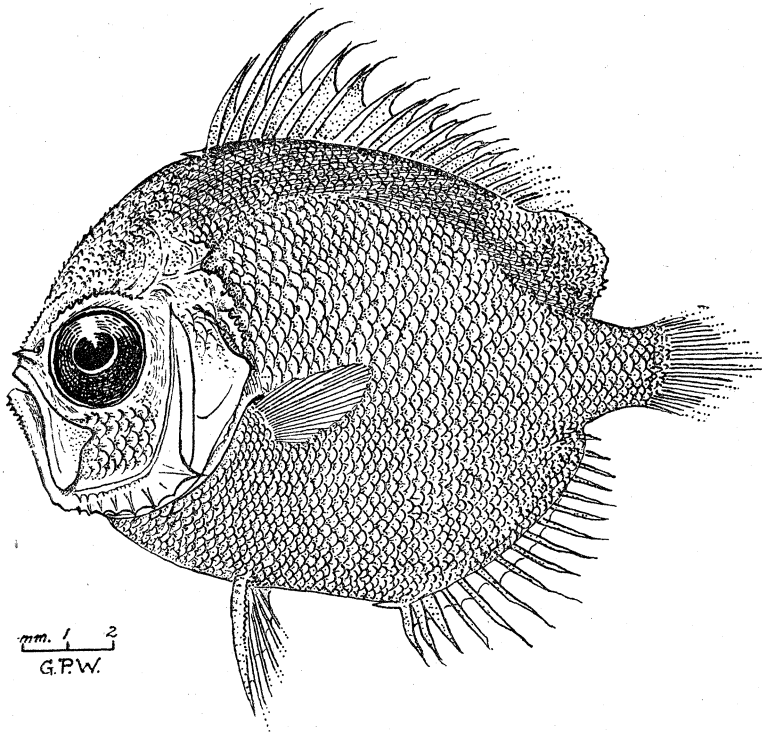


Figure 6.—Disc Dory, *Paradiretmus circularis* Whitley. Holotype from Lord Howe Island.

wards, scales are not so spinate, opercles are without raised laminae, etc. It cannot be the young of *Diretmus* because it is subcircular in shape, not skewed as in young *Diretmus*, and there are several fine preopercular spinules instead of one long spine.

General characters as described for the species.

Although such a small fish, it has metamorphosed and is not in a larval phase such as a *Rhynchichthys*.

Paradiretmus circularis, sp. nov.

D. 16 + 9?, A.iii 13, P. 16, V.i 5, C. c. 13, Sc. c. 30.

Head (5 mm.) 2.8, depth (10) 1.4 in standard length (14). Eye, 2 mm.; interorbital 1.2; snout, less than 1; length of maxillary, about 2.3; equal to pectoral; depth of caudal peduncle, about 2.

Head compressed, high. Premaxillary extensible, with broad notch at symphysis. Maxillary broad posteriorly, its margin weakly sigmoid. I am unable to trace any supramaxillaries or teeth. Mandibulatory rami curved and sweeping, not elevated. Chin with a row of spines down each side. Nostrils large, with papery edges, each preceded by a forwardly-directed spine and a spiny ridge. Eye large, supraorbital denticulated. Suborbital shallow. Top of head with spiny or lanceolate scales, descending over interorbital. About 5 or 6 rows of cheek-scales; cheeks not very deep. Preopercular edge papery with few fine spines below. Interoperculum with about six larger spines, the one at the angle reaching gill-cleft. Operculum smooth, lacking laminae as in *Diretmus*, and at least partly scaly; it ends in a spineless point, its superior margin being excavated around the base of a spiny scale. Another spiny scale above origin of lateral line. Gill-rakers slender, not numerous. No barbel. Form subcircular, very compressed. No bony bucklers. Caudal peduncle deep. Body covered with thin, imbricate, cycloid scales, some of which bear a central tubercle, but most have a median depression. Abdominal scales not keeled. Scales not extending over fins, but sheaths cover bases of posterior dorsal and anal rays. Lateral line obsolescent, merely a steeply ascending groove behind head and below anterior dorsal spines. Vent apparently about half-way between ventral base and anal origin.

Dorsal fin preceded by a procumbent spine, its anterior ten rays or so spinous and with pennate and incised membranes; posteriorly the rays are lost in a raised pad of back-flesh. Anal with procumbent spine, three thick pencilled spines and about thirteen filament-tipped rays, the posterior ones being sheathed by body-scales. Spinous fins not separated from soft. No perforations along base of membranes. Pectorals rather small and pointed. Ventral origin thoracic, slightly before level of pectoral. Caudal damaged, without procurvent rays. Fins without fulcra. The fin-rays do not appear to be divided or articulated.

Colour in alcohol: Unpaired fins yellowish. Base of dorsals and most of top of head grey. Back brown, indistinctly margined below with grey; the sides and breast silvery. Front of head and jaws yellow. Paired fins whitish. Eye blue and black.

Described and figured from the unique holotype, a specimen about 14 mm. in standard length or $\frac{5}{8}$ in. overall. Austr. Mus. regd. no. IB.1944.

Loc.—From stomach of Kingfish (*Regificola grandis*) caught off Lord Howe Island, South Pacific; Mr. Robert Baxter, 1947.

This interesting little novelty swerves from *Diretmus* in the direction of the more normal Berycoid families and has something of the facies of such Zeomorphs as *Capromimus* and *Cyttus*, from which it is distinguished by the deeper caudal peduncle and spinous portions of dorsal and anal fins not separated from soft. The reduced number of ventral rays (i, 5) is an important character in the new genus, again suggesting affinity with *Diretmus* and the Caristiidae rather than the Berycoids and Zeoids. The normal scales of *Paradiretmus* are quite different from the ridge-like squamation of the Grammicolepidae.

Suggested vernacular name: Disc Dory.

Family REGALECIDAE.**Regalecus pacificus** Haast.

Regalecus pacificus Haast, Trans. N.Z. Inst., x, May, 1878, p. 246, pl. vii. New Brighton, New Zealand.

Occurrences of the rare Oar Fish are always worthy of record. Reviews of the Australasian cases of this species having been captured or stranded have been given by the present writer (Rec. Austr. Mus., xix, 1933, p. 70, and Austr. Mus. Mag., viii, 12, 1945, p. 425, figs.).

On 16th July, 1946, a further example came to light at Dee Why, New South Wales, where it was washed up in a fresh condition on some rocks. It was 11 ft. 6 in. (349 cm.) long and 11 inches deep, but had been damaged before I saw it the same afternoon. The tip of the tail appeared to have been bitten off, as usual in stranded specimens, but had healed, although there was still a little bleeding at the end of the vertebral column. The head, about 9 inches long, was preserved. Eye nearly $1\frac{1}{2}$ in. Snout to vent, 54 in. The fins were very broken and the colours had faded. D. 243, the posterior rays further apart than the anterior ones.

The specimen was a female with fusiform ovaries, 3 ft. long by about $1\frac{1}{4}$ in. in diameter, containing thousands of minute, forming eggs. Peritoneum white. Liver bright salmon-reddish. Gall-bladder large and with much green bile. The stomach had about ten longitudinal plicae but contained nothing but some coarse sand which had probably been washed into it when the fish was cast ashore. Pyloric caeca numerous. No parasites. Austr. Mus. regd. no. I.B.1679.

The sea was almost flat calm, due to a N.W. wind, when the fish came ashore, and there had not been any stormy seas for some time beforehand. A second specimen was reported from Palm Beach on 24th July, 1946. On 27th June, 1947, another was washed ashore at Long Reef, not long after some very rough weather in Bass Strait and between Australia and New Zealand, the probable source of such stranded specimens. On 17th August, 1946, a Newcastle example is said to have been recorded in the "Newcastle Herald", and another Oar Fish was stranded on Manly Beach on 30th May, 1948.

Western Australian Examples.—In the Museum at Perth there is a very fine cast of this species and the following Western Australian specimens or records:

Regd. no. P.23. Rottnest Island.

P.1145. North Cottesloe, 8 ft.

P.1849. Mandurah; 26th January, 1938, hooked. $113 \times 6 \times 2$ inches.
Tail missing. Also a photo (P.2084).

P.1915. Busselton; December, 1938. $13\frac{1}{2}$ ft.

— North end of Garden Island; November, 1947. About 9 ft.
("Daily News", Perth, 18th November, 1947).

A Tasmanian Record.—The Hobart "Mercury" of 25th June, 1946, published a photograph of an Oar Fish, said to have been 11 ft. long, found at Sisters Creek, Tasmania, during the past week. It was preserved at the Queen Victoria Museum, Launceston.

In Victoria.—A specimen 13 ft. 3 in. long was lassoed by fishermen at Mordialloc, Victoria, on 31st May, 1946, and portrayed in the "Daily Telegraph", Sydney, 1st June, 1946.

Family ATHERINIDAE.

Craterocephalus marjoriae, sp. nov.

D.v/i 6, A.i 8, P.i 11, V.i 5, C. 17. Sc. 30 (28 on silver band). Tr. 7 or 8. Predorsal sc. 10. Interdorsal sc. 4.

Head (12 mm.) 3.0, depth (10) 3.7 in standard length (37).

Eye, 4 mm.; interorbital, 4.5; snout, nearly 4; depth of caudal peduncle, 4; length of pectoral, 6; predorsal length, 19; width of body at pectoral base, 6.

Form deep, compressed. Head flattened above, tapering down towards ventral profile; snout acutely pointed. Lower jaw included, mouth obliquely flexed rather as in *Pseudomugil*, extensile, the premaxillary pedicels shorter than eye. Teeth apparently microscopic or absent. Maxillary hardly reaching below anterior margin of eye.

Mandibular rami not elevated. Head scaly, except before eyes. About 7 + 10 short gill-rakers on first branchial arch.

Body covered with large, entire, cycloid scales, in about thirty transverse rows between head and hypural. Vent about 3 scales ahead of anal fin and hardly reached by adpressed tips of ventral fins. Two scale-rows between dorsal fins and lateral band. Four scales between base of pectoral fin and middle of chest.

No produced fin-spines. Origin of first dorsal nearer snout than root of tail. Anal base longer than that of second dorsal, about half its distance from caudal. Anal origin in advance of level of second dorsal origin. Third pectoral ray longest, reaching to above ventral base which is in advance of level of first dorsal. Caudal forked.

Colour after long preservation, light brown to yellowish, with a silvery lateral band nearly one scale wide. Eye silvery-yellowish. Fins plain or with few dark specks. Slight speckled edges to dorsal scales, but no spots as in *C. stercus-muscarum*. A median streak along caudal peduncle ventrally. Top of head dark-speckled.

Described and figured from the holotype, a specimen 37 mm. in standard length or 45 mm. overall, one of a series with eight paratypes, 1½ to 2 inches long. Austr. Mus. regd. no. I.12770.

Loc.—Eidsvold, Burnett River, Queensland; from Dr. T. L. Bancroft, 1913. Freshwater.

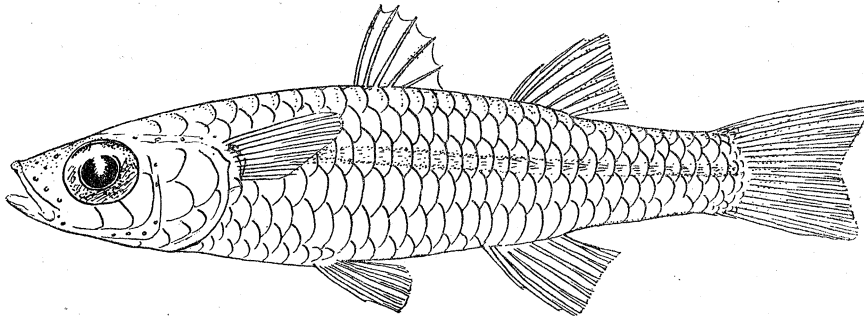


Figure 7.—Silverside, *Craterocephalus marjoriae* Whitley. Holotype from Eidsvold, Queensland.

This species is close to *C. cuneiceps* Whitley (Austr. Zool., x, 3, 10th May, 1944, p. 266, from Belele Station, Western Australia), but has about 30 scales and ventrals before level of first dorsal, whereas *cuneiceps* has about 38 scales and ventrals about opposite first dorsal. From other species it differs in proportions, scale-counts, etc.

***Craterocephalus worrelli*, sp. nov.**

D.v/i 9, A.i 8, P.i 11, V.i 5, C. 17. Sc. 33. Tr. 8. Predorsal sc. 13. Interdorsal sc. 5.

Head (14 mm.) 3.7, depth (10) 5.2 in standard length (52). Eye, 4 mm.; interorbital, 6; snout, 3.5; depth of caudal peduncle, 5; length of pectoral, 6; predorsal length, 25; width of body at pectoral base, 7.

Interorbital broad, scaly; head rather like a truncated pyramid. Lower jaw included, upper not flexed or concave laterally. Premaxillary pedicles shorter than eye. Teeth small, in bands. Maxillary not nearly reaching eye. Mandibular rami not elevated.

Form robust, scales cycloid. Vent 5 or 6 scales ahead of anal fin and situated between tips of ventrals. Three scale-rows between dorsal fin and main lateral band. Three and a half scale-rows between pectoral base and middle of chest.

Dorsal fin-spines slender, not produced. Origin of first dorsal nearer snout than root of tail. Anal base slightly longer than that of second dorsal and 1½ in its distance

to caudal root. Anal origin in advance of level of second dorsal origin. Pectoral reaching level of ventral origin which is well ahead of level of first dorsal.

Colour in alcohol yellowish, with broad dark bar from snout, through eye, to tail, and having several less distinct dark bands above and below it. A median infuscated line along ventral surface of posterior half of fish. Fins and top of head mostly plain. Eye blue and silvery.

Described from the holotype, 52 mm. in standard length or $2\frac{1}{2}$ inches overall. Austr. Mus. regd. no. IB.1915.

Loc.—Mataranka, Roper River system, Northern Territory of Australia; collected by Mr. Eric Worrell, 1947. Freshwater.

Distinguished from other species by the formulae, banded coloration, long snout and broad interorbital.

***Atherinosoma (Taeniomembras) tropicalis*, sp. nov.**

D.vi/i 9, A.i 11, P.i 17, V.i 5, C. 15. Sc. 45 (43 on silver band). Tr. 6. Predorsal sc. 20. Interdorsal sc. 7.

Head (11 mm.) 3.6, depth (8) 5 in standard length (40). Eye, 4 mm.; interorbital, 4.1; snout, 2.5; depth of caudal peduncle, 3.3; length of pectoral, 7; predorsal length, 22; width of body at pectoral base, 6.

Form slender. Snout rounded. Lower jaw included, mouth oblique, not flexed, extensible. Premaxillary processes short. Teeth extend along upper jaw externally, elsewhere they are microscopic or absent. Mandibular rami elevated. Head scaly, except before eyes. Gill-rakers slender and numerous (more than 15 on lower part of first arch). No conspicuous pores on vertex but a series on snout and around chin.

Body covered with large, entire, cycloid scales, some of them pored, especially along silver band, where there are more than 40 scales. Vent about 7 scales ahead of anal fin and lying near ventral tips. Two scale-rows between dorsal fin and lateral band. Five scale-rows between pectoral base and middle of chest.

No produced fin-rays. Origin of first dorsal nearer snout than root of tail, behind level of vent. Anal base somewhat less than its distance to caudal.

Colour, in alcohol, yellowish-brown with a broad lateral silvery band, bordered above and below with darker, occupying nearly 2 scales in depth. Scales of back with two or three milky or blue spots, sometimes joined, and the usual punctulations. Snout and end of caudal dusky. Top of head dark with milky markings. Some brown along bases of pectorals and anal. No dark bars or spots on body. Fins plain. Eye silvery. No median ventral streak along caudal peduncle.

Described from the unique holotype, a specimen 40 mm. in standard length or nearly 2 inches long overall. Austr. Mus. regd. no. IA.1553.

Loc.—Whitsunday Passage, near Bowen, Queensland; Mr. E. H. Rainford, 1923.

A marine species distinguished from other Australian Atherines by its fin and scale-counts, short premaxillary pedicels, external teeth, numerous gill-rakers, etc., as described.

Family NOMEIDAE.

***Caristioides*, gen. nov.**

Orthotype, *C. amplipinnis*, sp. nov.

A genus of rather small Stromateiform fishes with the body ovate, strongly compressed, with firm flesh. Eyes large, with very narrow rims. Interorbital broad, flat, converging anteriorly. Snout tumid. Upper jaw not protactile. Maxillary rounded, reaching below front of pupil, with supplementary bone. A row of spaced, conic, well-developed teeth in each jaw, largest near upper symphysis and sides of mandible. Tongue and palate toothless. Oesophageal teeth cannot be examined without damaging the unique specimen. Head with some mucus pores and a series of tubes

around preopercular limb, the edge of which is not serrated. Cheeks and opercles scaleless, perhaps through scales being deciduous. Interoperculum and operculum not spinous. Gill-openings very wide, joining across the narrow isthmus. Pseudobranchiae present. Nostrils small, near end of snout. Gill-rakers rather thick, about one-third eye-diameter, about 13 on lower part of first branchial arch. First dorsal fin with ten weak spines. The last is joined by membrane to the soft dorsal fin, which is higher, has about thirty rays and forms a pointed lobe overhanging tail. The anal fin is damaged but was evidently similar to soft dorsal. Pectorals fairly large, median rays longest. Ventrals long and slender, reaching anterior anal rays, their origin behind level of pectoral base. Caudal long and forked. Body deep, compressed strongly, axis of caudal peduncle bent downwards. Body-scales very small, imbricate, cycloid. L. lat. with small, simple, close-set tubes, near and roughly parallel to outline of back and ceasing below posterior dorsal rays. Vent slit-like. Scales extend little, if at all over fins. Coloration plain.

Differs from all the Stromateiformes in having the above combination of characters, and easily distinguished by its numerous finrays and scales, forked caudal and extensive fins. It is apparently nearest *Psenes* (Cuv. and Val., Hist. Nat. Poiss., ix, 1833, p. 259, pl. 265), but has more numerous finrays, much higher soft dorsal and anal fins, and much smaller scales.

Caristioides amplipinnis, sp. nov.

D. *circa* x 31, A (iii?) 30, P. 20, V.i 5?, C. 17. L.lat. *circa* 93 (left) or 75 (right).

Because of the vestigial nature of some of the spines, rays and of l.lat. scales, only an approximate formula can be given.

Head (27 mm.) 2.6, depth (40) 1.7 in standard length (71). Eye (8.5) greater than snout (7) which is subequal to interorbital (7.5). Length of pectoral, 22 mm.; of ventral, 23; upper caudal lobe, 27. Height of dorsal lobe, 18 mm.

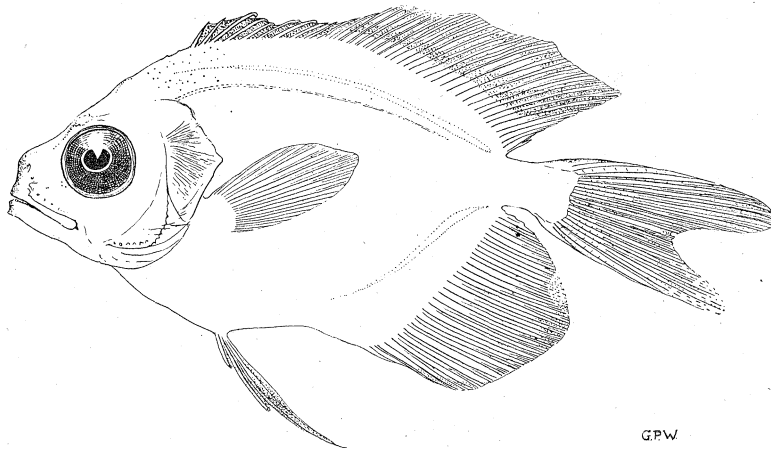


Figure 8.—Harvest Fish, *Caristioides amplipinnis* Whitley. Holotype from Lord Howe Island.

General characters are defined for genus. Third dorsal spine lengthened. Last dorsal ray divided to base.

Coloration (in alcohol), plain yellowish to pale brown, finely dotted.

First dorsal and ventrals dark brown. Other fins with brown and white transverse areas. Pale bars at junctions of fins with body. Eye blue. Total length 100 mm. or 4 inches.

Described from the unique holotype. Austr. Mus. regd. no. IA.1395.

Loc.—Lord Howe Island; Mr. R. Baxter. Found washed ashore in 1923. Suggested vernacular name: Lord Howe Island Harvest-Fish.

Family EPINEPHELIDAE.

Genus *Trachypoma* Gunther, 1859.

Trachypoma Gunther, Cat. Fish. Brit. Mus., i, 1859, pp. 54 and 167. Not *Trachypoma* Giebel, Z. ges. Naturw., xxxvii, 1870, p. 97 = *Eremophilus* Humboldt, 1805, a genus of Catfishes, *vide* Gunther.

Trachypoma macracanthus Gunther.

Trachypoma macracanthus Gunther, Cat. Fish. Brit. Mus., i, 1859, p. 167. Norfolk Islands. *Id.* Boulenger, Cat. Perc. Fish. Brit. Mus., (2) i, 1895, p. 146, pl. ii (type). *Id.* Waite, Trans. N.Z. Inst., xlii, 1910, pp. 377 and 381 (Kermadecs, Norfolk and Lord Howe Iss.). *Id.* Kendall and Radcliffe, Mem. Mus. Comp. Zool., xxxv, 1912, pp. 107 and 168 (as *macracanthum*). *Id.* Regan, Proc. Zool. Soc. London, 1913, pt. 3, p. 373. *Id.* Rendahl, Nat. Hist. Juan Fernandez and Easter Id. (ed. Skottsberg), iii, 1920, pp. 60 and 63 (Easter Id.). *Id.* Fowler, Mem. Bern. P. Bish. Mus., x, 1928, p. 171.

This species may now be added to the Australian list as the late G. McAndrew obtained a specimen from Shellharbour, New South Wales, in May, 1925. It was nearly 9 inches long, a record length. Austr. Mus. regd. no. IA.2458. The Pacific Perch, as this may be called, is common at Lord Howe Island; the types came from Norfolk Island, and the species has been recorded from the Kermadecs and Easter Island.

Epinephelus thompsoni, sp. nov.

Br. 7, D.xi 13, A.iii 8, P. 18. L.lat. about 83 to hypural joint + 7 to caudal base. L.tr. about 17/1/43 from dorsal origin to vent, and 10/1/10 on caudal peduncle.

Head (200 mm.) 2.4, depth (153) 3.2 in standard length (about 490). Eye (36) 5.5, snout (about 50) about 4 in head. Interorbital, 29 mm.; snout to end of maxilla, 94; depth of maxilla, 25; depth of cheek, 68; length of pectoral, 100.

Head large, deep, only naked before eyes and on lower surfaces. Interorbital scaly, broadly convex. Only the posterior margin of preoperculum serrated plus some enlarged and jutting serrae at angle. Opercular flap rounded, its upper margin slightly convex. Three opercular spines, the upper one small and most anterior, the middle and lower large and strong and closer together. Maxillary truncate, naked, with narrow supplemental bone. Tongue small and rounded. Strong cardiform teeth on jaws, vomer, and palatines, some of them enlarged near upper symphysis and along the mandibles at the sides of which the teeth are in two rows. One or two small canines on each side of symphysis in each jaw, these not depressible like the cardiform teeth. Nostrils subcircular, anterior with skinny flap. Gill-rakers, excluding rudiments, 7/15 on first branchial arch; they are short and spiny, the longest (10 mm.) at the angle.

Body compressed but robust, deepest at level of gill-flaps. Comparatively large adherent ctenoid scales, longitudinally striated and with numerous basal radii, cover the body but hardly trespass on the fins. The scale-rows do not ascend steeply but more or less regularly follow the body-contours. Course of l.lat. normal, its tubes simple.

Bases of spinous dorsal fin notably longer than that of soft, its third spine longest (58 mm.) and subequal to longest rays. Anal spines strong, third longest. Pectorals rounded, 7th ray longest. Ventrals with strong spine, rooted below pectoral axil. Caudal broadly convex.

General colour, after long preservation in formalin, light brown. Margins of unpaired fins dark brown. A dark spot on each body-scale. No dark moustache or other conspicuous markings.

Described from the holotype of the species, a gutted specimen about 490 mm. in standard length or about 23 inches overall. Regd. no. E.2116.

Locality.—36½ miles N.E. of Cape Moreton, Queensland; 70 to 75 fathoms. F.I.V. "Endeavour".

Named in honour of Dr. Harold Thompson, Chief of the Division of Fisheries, C.S.I.R.

Distinguished especially by its rather large size, plain coloration, two rows of mandibular teeth, small round tongue, and rather large scales.

Apparently nearest *malabaricus* but has deeper body, and upper opercular spine not so advanced in relation to lowest, and maxillary naked, no large brown spots or blotches, etc.

Family CARANGIDAE (?) or JUVENELLIDAE, nov.

Juvenella, gen. nov.

Orthotype, *J. carangoides*, sp. nov.

Superficially similar to a young trevally (*Usacaranx*) but at once separable by its deeper, compressed caudal peduncle, without scutes, more convex ventral profile, and ten dorsal spines, the posterior ones not much shorter than the longest anterior ones. Body with ctenoid scales which extend over all the breast. Dorsal and anal spines contiguous to their rays.

General facies as figured and details as described for species.

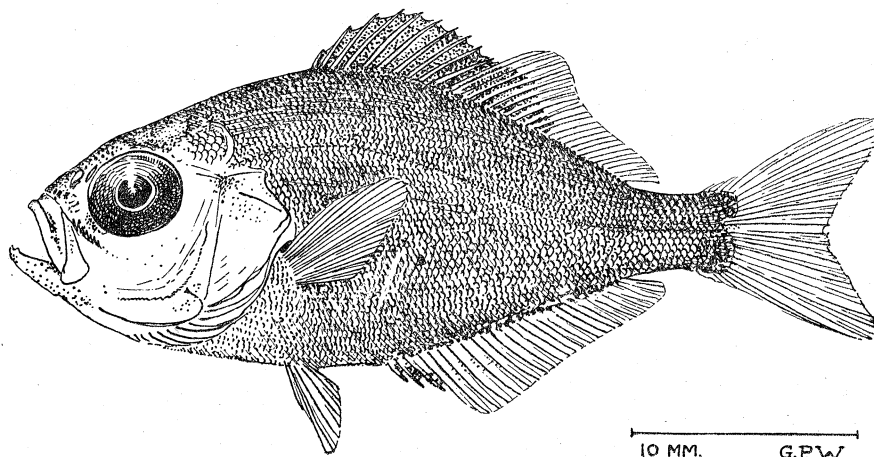


Figure 9.—False Pompano, *Juvenella carangoides* Whitley. Holotype from Newport, New South Wales.

Perhaps this new genus is nearer *Lactarius* and *Bathystethus* than the more typical Carangidae, which have the anal spines remote from the anal rays, or it may be thought sufficiently distinct to represent a new family, the Juvenellidae.

Juvenella carangoides, sp. nov.

Br. 7, D.x 25, A.iii 26, P.i 18, V.i 5, C. 15 branched rays. L.lat. 83 to hypural. L.tr. 17/1/36 to 5/1/5 on caudal peduncle. About 20 predorsal scales.

Head (10 mm.) 3, depth (13) 2.3 in standard length (30). Snout (2) 2 in eye. Eye (4) 2.5, interorbital (3) 3.3, depth of caudal peduncle (3.2) 3.1 in head. Length of pectoral, 6.5 mm.

Head naked, except on temples. Few pores. Nostrils large, pear-shaped, front ones with raised posterior rim. Eyes large; interorbital convex. Mouth small, maxillary

bluntly rounded, reaching below front portion of eye. Premaxillary pedicels short. Bands of fine teeth on jaws; some fine, enlarged teeth in an outer row on dentary. Apparently no palatal teeth. Tongue-tip rounded, free. Velum maxillare present. Preorbital serrated. Margin of preopercle denticulated, other opercles entire. Blunt opercular spines. Gill-openings wide, the membranes joined to a very narrow isthmus. Gill-rakers long and slender, 25 on lower portion of first branchial arch, about as long as second row of gill-fringes, the first row of gill-fringes being short. Pseudobranchiae present.

Body compressed, deep, covered with very small scales which are strongly ctenoid and have several conspicuous concentric rings. The body is broadest immediately behind the head. Lateral line complete, only slightly and evenly bowed, each of its scales with a simple, raised tube. No scutes. Breast not naked. No axillary processes or scales. Vent on the flattened abdomen a little in advance of anal fin; no genital papilla. No scaly sheaths to fins. Caudal peduncle compressed, without keel. Dorsal and anal fins with their spines contiguous to the soft rays, their form as figured. Pectorals and ventrals rounded. Lower pectoral rays normal, not finger-like. Caudal forked. No finlets or produced rays or procumbent spine.

Colour, brownish to dark blue above, steel-blue to grey on the sides, and silvery below. Snout, top of head, caudal base, spinous dorsal and antero-proximal part of soft dorsal densely infuscated; some dark dots along anal base. Fins otherwise whitish. Eye bluish. Snout and front of head pale whitish. In the two small paratypes the foremost dorsal rays are white, followed by a dusky patch.

Described and figured from the holotype (the largest of three specimens with the same data), 30 mm. in standard length or $1\frac{1}{2}$ inches overall. Austr. Mus. regd. no. IB.1733.

Loc.—Newport, near Sydney, New South Wales; in rockpool, 11th October, 1946. Miss Elizabeth Pope.

Miss Pope later (29th December, 1947) collected another small paratype at Long Reef, New South Wales. It was in a pool at low water among the alga *Phyllospora* which it resembled remarkably in colour. It is 34 mm. overall and has about seven fuscous cross-bars, the second dorsal fin is nearly all dusky olivaceous and there is a similar dark patch on anal fin anteriorly; iris pinkish, surrounded by yellow which extends over top of head. Austr. Mus. regd. no. IB.1983.

The affinities of this puzzling little fish are uncertain. At first sight it appeared like a young Carangid, even having a coloration somewhat suggestive of the *Nauclerus* stage of *Naucrates*, but its fin-formulae, with the spines and rays in contact, clearly separate it from any member of the Carangidae. It probably grows to a considerably larger size than the described specimen which, however, has quite lost its larval characters though, possibly at a later stage of growth, it might develop scales on the cheeks.

I have been unable to trace any genus like this fish in the Museum collections or described in literature.

Suggested vernacular name: False Pompano.

Family SERIOLIDAE.

Regificola parilis, sp. nov.

D.vi/i 32, A.ii 21, P.i 22. L.lat. c. 140 to hypural joint or 165 altogether.

Head (191 mm.) 3.7, depth (160) 4.4 in length to caudal fork (715). Eye, 33 mm.; interorbital, 69; snout, 62; maxillary, 82; base of first dorsal, 60; of second, 262; of anal, 180; length of pectoral, 83; of ventral, 100; depth of caudal peduncle, 27.

General characters as in the common Yellowtail Kingfish, *Regificola grandis* (Castelnau, 1872), but that species has smaller eye (more than 7 in head), more

slender form and less arched upper profile of head, lower dorsal spines and more gill-rakers.

In the new species the maxillary is deep, reaching below anterior third of eye and with distinct supramaxillary. Gill-rakers 3/12, all less than eye-diameter. Anal rays higher than those of dorsal. Lateral line very slightly curved. First dorsal originating well behind level of pectoral base.

Described from the holotype, a specimen 714 mm. in length to caudal fork or 33 inches overall. Qld. Mus. regd. no. I.6709.

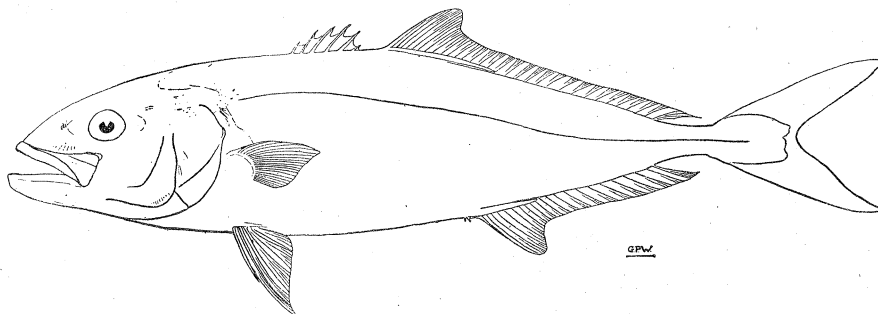


Figure 10.

Allied Kingfish, *Regificola parilis* Whitley. Holotype from southern Queensland.

Loc.—Mooloolabah, Queensland; caught by Mr. F. Z. Eager in May, 1939. Other specimens seen in the Brisbane Fish Markets.

This is the *Seriola dumerili* recorded by Marshall (Mem. Qld. Mus., xii, 1941, p. 57) but it differs from the *Seriola* or *Caranx dumerili* of Risso (Ichth. Nice, 1810, p. 175, pl. vi, fig. 20), the latter having 18 pectoral rays, larger teeth, more pointed head, etc.

Family CHANDIDAE.

Denarius, gen. nov.

Orthotype, *D. bandata*, sp. nov.

Near *Ambassis* Cuvier and Valenciennes (*Hist. Nat. Poiss.*, ii, 1828, p. 176, pl. xxv) but differs in having a much smaller mouth, fewer scales between head and tail, obsolete lateral line, fewer pectoral rays, no procumbent dorsal spine, no supraorbital spine and in its darker, banded coloration.

General characters as described below and facies as figured.

The original figure shows five rows of cheek-scales in *Ambassis* but Bleeker's "Atlas" figures it with only two as in my new genus, which also has no lingual teeth and only 13 caudal vertebrae.

This new genus is evidently nearer to *Ambassis* (sensu lato) than *Xenambassis* Schultz (*Proc. U.S. Nat. Mus.*, xcvi, 1945, p. 115), having the strongly notched dorsal fins and peaked spinous dorsal of the former genus.

Denarius bandata, sp. nov.

D.vii, i, 9; A.iii, 9; P. 9; C. 17; Sc. 25; l. lat. obsolete; l. tr. 12; Predorsal sc. 11.

Head (9) 2.5, depth (10) 2.3 in standard length (23). Eye (2.7) 3.3, snout (2) and length of maxillary (2) equal to interorbital (2) 4.5 in head; depth of caudal peduncle (4) less than postorbital (4.1). Longest dorsal spine, 5 mm.; longest anal spine, 4 mm. Anterior profile not much notched over eyes. Supraorbital spineless. Interorbital flat with two ridges. Eyes large. Mouth small, slightly protractile, barely reaching eye.

Lower jaw the longer. Teeth minute on jaws, vomer and palatines; none on tongue. Maxillary exposed, its posterior edge convex. Nostrils large. Some mucus pores around eye, nape and preopercular flange. Preorbital and lower edge of preoperculum and its angle denticulate. Interoperculum entire. Operculum pointed. Cheeks shallow; two rows of cheek-scales, the lower smaller. Opercles scaly. Gill-membranes united, free of the narrow isthmus. About six short gill-rakers on lower limb of first branchial arch.

Dorsal profile more convex than ventral. Body compressed, fairly deep, covered with small cycloid scales except on top of head. Lateral line obsolete (very faint traces of up to five rudimentary tubes with 3 or 4 rows of scales above them in a few paratypes). About eleven (10 to 13 in paratypes) predorsal scales form a faint ridge posteriorly. Eight scales before ventral fins. Vent half-way between ventral and anal origins.

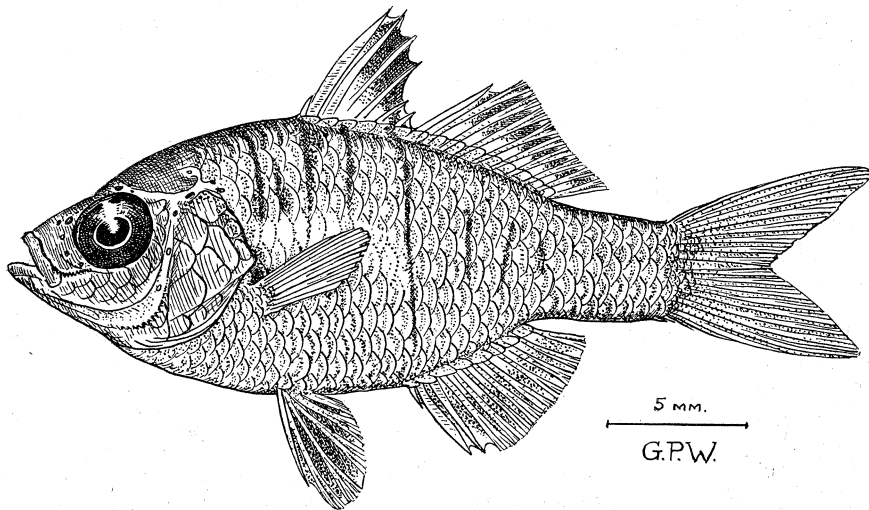


Figure 11.

Chanda Perchlet, *Denariusa bandata* Whitley. Holotype from the Northern Territory.

Dorsal fins deeply notched, the short seventh spine connected by membrane to near base of spine of second dorsal fin. Spinous dorsal much higher than soft dorsal. Second dorsal spine long, reaching, when depressed, beyond base of spine of second dorsal fin. Two dorsal bases about equal in length. Second anal spine slightly shorter than third. Soft dorsal and anal with scaly sheaths. About nine simple rays in the small pectoral fins. Ventrals reaching vent, with small axillary scales, their insertion behind level of pectoral base. Caudal forked.

General colour in preservative, brownish with scales darker towards their margins. Up to six vertical dark brown bars on body. Dorsal with a broad black inframarginal area. Anal and ventral dusky. Pectorals and caudal lighter, plain. A cluster of dark chromatophores form a small blotch over pectoral axil. Eye blue. No silvery lateral band, no dark stripe along caudal peduncle.

Described and figured from the holotype of the species, a specimen 23 mm. in standard length, or $1\frac{3}{16}$ inches overall, largest of a series of fifteen. Austr. Mus. regd. no. IB.2035 (holotype) and 2036–2037 (14 paratypes). The paratypes show little variation; dorsal rays 9 to 11; anal rays 8 to 9; Sc. 21 to 25.

Loc.—Coastal plains of Arnhem Land, Northern Territory of Australia; “found in brackish waters in large numbers after the wet season”. Submitted for identification by Dr. D. Thomson, Dept. of Anthropology, University of Melbourne.

Family TRICHIURIDAE.*Tentoriceps*, gen. nov.

Orthotype, *Trichiurus cristatus* Klunzinger (Fische Rothen Meeres, 1884, p. 120, pl. xiii, fig. 5, Koseir) = *Tentoriceps cristatus*.

Profile of head convex, ridge-like, trenchant; a high, leaf-like, curved crest springs from dorsal origin over interorbital and snout; the front part of the latter, however, not more sharpened. The eyes are situated well below the profile. Ventrals in the form of a pair of scales. Lateral line descends very gradually backwards and runs a little above the lower third of the body. Anal with only rudimentary, hardly perceptible spinelets. Eye large, 5 in head and 2 in snout. Head fairly long, $2\frac{3}{4}$ times depth of body and 9 in total length. Depth 20 to 24 (latter in older specimens) in total length, body thus very elongate. Dorsal rays $1\frac{1}{4}$ in depth of body, $3\frac{1}{2}$ in head, thus rather low. Pectorals short, 7 in head (if not broken short). Whiptail short, only $\frac{1}{2}$ head. Front teeth entire, without barbs. Colour silvery, dorsal transparent.

Family CALLYODONTIDAE.*Callyodon laxtoni*, sp. nov.

D.ix 10, A.iii 9, P.ii 11. L.lat. 16 + 18. Tr. 2/1/6. Predorsal 6.

Head (81 mm.) equal to depth and nearly 3 in standard length (242). Eye (12) 6.7, interorbital (26) 3.1, snout (32) 2.5, mouth-cleft (15) 5.4, pectoral (56) 1.4 and depth of caudal peduncle (34) 2.3 in head. Fish widest at operculum (38 mm.).

Head somewhat tapering, profile slightly convex, not gibbous. Nostrils inconspicuous. Eyes rather small. Interorbital broadly convex. Teeth whitish, coalesced into a smooth beak with rather irregular cutting edges. Posterior canines present. Lips extend over about basal half of teeth.

Cheek-scales in three rows, the lowest row of 3 or 4 scales covering lower pre-opercular flange. Gill-rakers hair-like or pectinate, 28 along lower limb of first branchial arch.

Body covered with cycloid scales with about 29 basal radii and reticulated centres. Last scale of lateral line enlarged. L.lat. interrupted by one tubeless scale on one side of fish, continuous on the other. General facies as in the genus. Caudal truncate or shallowly biconcave.

General colour; in alcohol, leaden bluish-grey above and down to breast; orange below and over tail. Pectoral base and upper portion dark grey, the lower portion and posterior margin orange. A narrow dark edge to anal. No conspicuous lines, bands or blotches, not even on head or lips. Teeth whitish.

Described from the holotype of the species, 242 mm. in standard length or 11 inches overall. Austr. Mus. regd. no. IB.1888.

Loc.—Ocean Island, 1947; named in honour of its collector, Lt.-Col. P. B. Laxton, Lands Commissioner at Tarawa, Gilbert Islands.

Distinguished from other species by its three rows of cheek-scales, covering the lower preopercular flange; non-gibbous profile, coloration, etc.