

## A COLLECTION OF FISHES FROM VICTORIA AUSTRALIA.

BY HENRY W. FOWLER.

The Academy has recently received through the Conchological Department a collection of marine fishes from Victoria, Australia. This collection was made by Mrs. Agnes F. Kenyon, of Melbourne, and though reported in full in this paper, embraces a few specimens secured in the southern Pacific which are listed in footnotes. Evidently most all the others were obtained along the coast of Victoria. The entire collection has been presented by the Conchological Department to the Academy. Some of the specimens are in bad preservation.

## SCYLIORHINIDÆ.

*Catulus analis* (Ogilby).

Four egg-cases agreeing with Dr. Waite's figures. Besides these there are egg-cases of other sharks which I am unable to identify, and which probably belong to the genera *Heterodontus*, *Scyliorhinus* and *Crossorhinus*.

## DASYATIDÆ.

*Trygonoptera testacea* Müller and Henle.

A tail with 2 spines and small dorsal agrees with Müller and Henle's figure. Two other large spines, the larger  $10\frac{1}{2}$  inches long, probably belong to some species of *Dasyatis*. Another tail with a well-developed dorsal fin close in front of the spine belongs probably to *Myliobatis*.

## CHIMÆRIDÆ.

PSYCHICHTHYS subgen. nov.

Type *Hydrolagus waitei* sp. nov.

Differs from subgenus *Hydrolagus* Gill, in the entire or undivided dorsal.

(Ψυχῆ, ghost; ἰχθῦς, fish; with reference to the vernacular given to these fishes in Australian seas.)

*Hydrolagus waitei* sp. nov. Fig. 1.

Head about 5; depth about  $5\frac{2}{3}$ ; snout  $1\frac{1}{5}$  in head; eye  $6\frac{1}{4}$ ; width of mouth 3; maxillary  $3\frac{1}{4}$ ; interorbital space  $3\frac{3}{4}$ ; pectoral about  $1\frac{1}{4}$ .



Body elongate, well compressed, and tapering from head into a long slender tail, though not filamentous. Greatest depth falls about origin of pectoral.

Head large, compressed, its width about  $2\frac{1}{6}$ , and its depth nearly equal to its length. Upper profile of head rather evenly convex, and well inclined to base of dorsal spine, depression above eye probably due to shrinkage. Lower profile of head forming a broad triangle at lower symphysis of mandible. Snout long, broad, its greatest width about  $1\frac{2}{3}$  in its length. Eye small, rounded, high, or near upper profile of head, and a trifle behind middle of its length. Mouth broad, transverse, inferior. Lips thick and fleshy. Teeth evidently damaged. At present upper jaw with 2 small approximated flat triangular laminae, and posteriorly along each side of upper jaw a broad and also long lamina extending far back. On each of these upper plates are 2 series

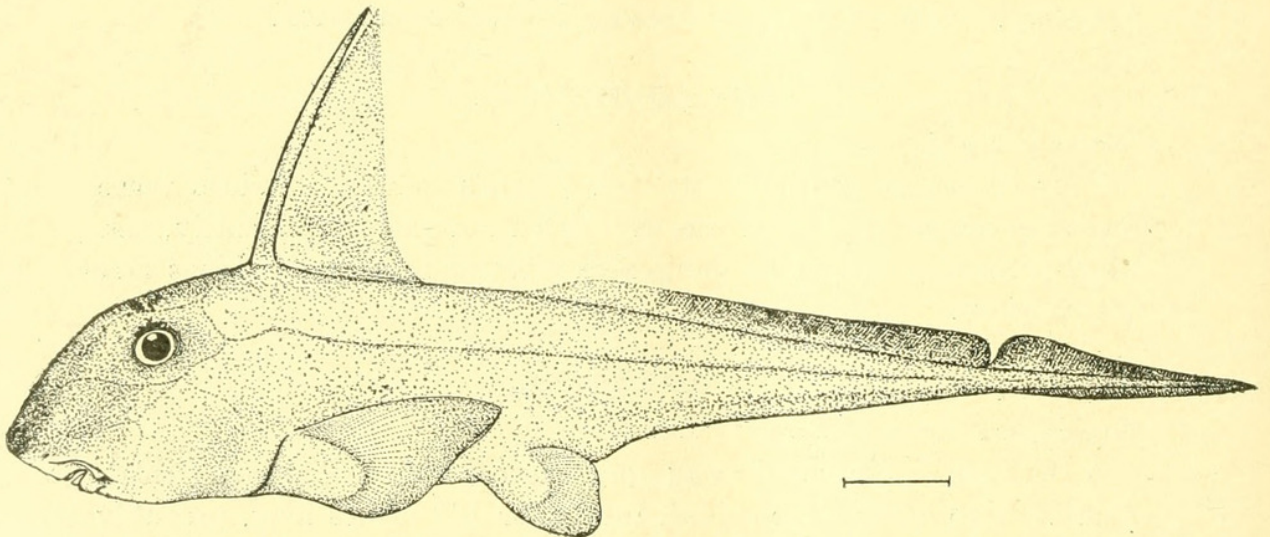


Fig. 1.—*Hydrolagus waitei* Fowler. (Type.)

of slightly elongated obsolete asperous patches and well separated. Mandible consisting of 2 trenchant strong plates, division or approximation at symphysis, and their edges entire. Maxillary covered above more or less by skin of preorbital region, and its distal extremity falls about half an eye-diameter anterior to front margin of eye.

Gill-openings small, inferior, below origin of pectoral and forming a fold over isthmus well in advance of latter.

First dorsal inserted a trifle before origin of pectoral, and furnished with a long strong spine, well compressed, its anterior edge sharply trenchant, and its length a little greater than head, possibly an eye-diameter more. Posterior margins of dorsal spine with rather broad



low trenchant keels, somewhat of spinescent form, and about 30 in number. Origin of second dorsal (damaged) begins apparently a little after origin of ventrals and extends back as a low, though also apparently entire, rayed fin to caudal, where it is entirely separated. It appeared to be about of even height throughout its length. Caudal encircles tail, rather high above at first, or this about equal to eye-diameter, and its length equal to dorsal spine. It gradually tapers to end of tail above, though below is lowest anteriorly. Pectoral large, broad, and apparently only reaching ventral. Ventral much smaller than pectoral, and inserted apparently but slightly if any before tip of latter, though apparently well before tip of depressed dorsal spine.

Color entirely faded in dried example to dull brownish.

Length about 12 inches.

Type, No. 33,119, A. N. S. P. Victoria.

This species resembles *Chimæra ogilbyi* Waite, *Rep. Thetis*, 1898, p. 41, Pl. 11. It differs however in the dorsal spine being trenchant along its anterior edge, serrated along its posterior edges and equal to, or a trifle longer than, the head. Other differences may be seen in the shorter snout, shorter pectoral, shorter caudal and apparently more posterior insertion of the second dorsal. However these differences may be accepted only provisionally, as it has been necessary to restore the accompanying figure to some extent. The length of the dorsal spine and tail are however undoubtedly points of difference. This species differs from *Hydrolagus colliei* (Bennett) in the longer dorsal spine, entire second dorsal and smaller eye. It is possible *Chimæra ogilbyi* is also a *Hydrolagus*, though the caudal is long, its tail could hardly be considered filamentous like that of *Chimæra monstrosa* Linnaeus. It resembles *Chimæra monstrosa* var. *australis* Hector, *Trans. Proc. New Zeal. Inst.*, XXXIV, 1901 (1902), p. 239, Pl. 14, from New Zealand, but differs in the shorter tail and absence of the anal.

(Named for Dr. Edgar R. Waite for his many excellent contributions to Australian ichthyology.)

#### CHEILOBRANCHIDÆ.

*Cheilobranchus rufus* (Macleay).

One example agreeing with Dr. Waite's figure in *Rec. Austr. Mus.*, VI, No. 3, 1906, p. 195, Pl. 36, fig. 1.

#### MYRIDÆ.

*Muraenichthys devisi* sp. nov. Fig 2.

Head about 10 (end of tail damaged); depth at thorax  $3\frac{1}{2}$  in head;



width of head  $5\frac{1}{4}$ ; snout  $4\frac{1}{4}$ ; gape 3; maxillary  $2\frac{1}{2}$ ; eye  $3\frac{1}{4}$  in snout; interorbital space 2.

Body long, slender, compressed, and edges apparently convex. Greatest depth at thorax, and otherwise trunk of about equal depth throughout. Tail long, slender, more or less compressed and tapering. Head and trunk  $1\frac{1}{2}$  in tail (damaged).

Head small, compressed, attenuated, and swelling into a rather deep thorax. Jaws long, slender, and with upper a little more convexly elevated than lower. Snout long, slender, its tip projecting well

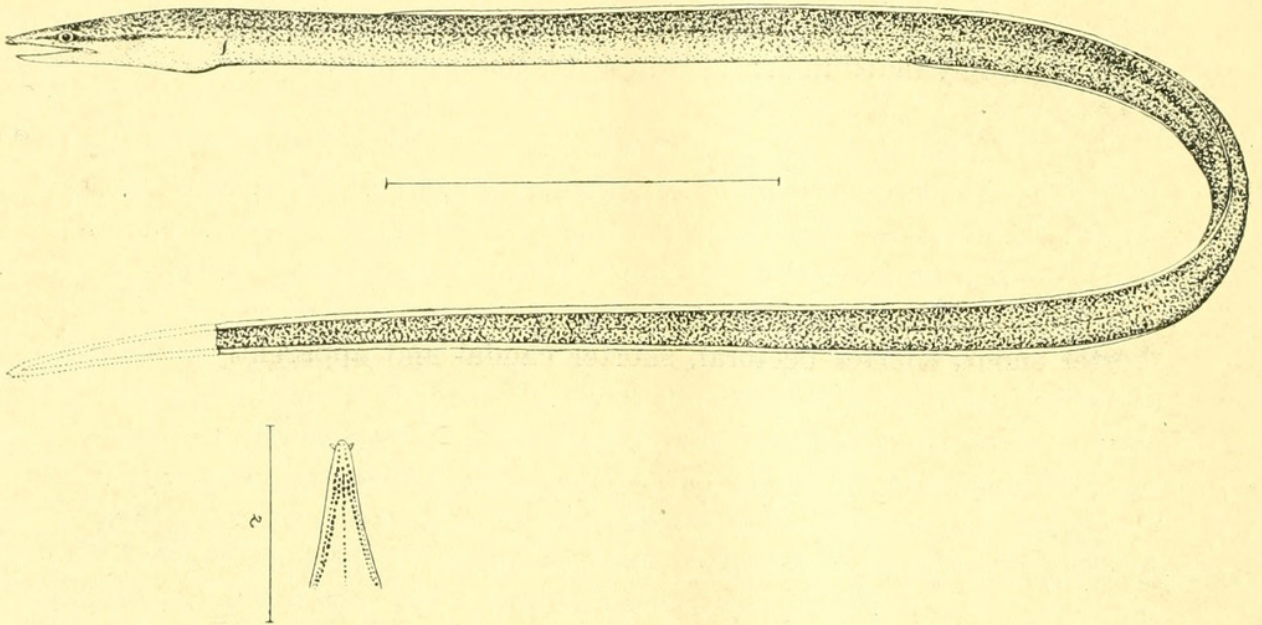


Fig. 2.—*Murænichthys devisi* Fowler. (Type.)

beyond mandible, and its sides rather steep. Eye large, a trifle longer than deep, its center falling about last fourth in space between tip of snout and corner of mouth, and its lower margin close to edge of mouth. Maxillary concealed, though projecting a little beyond posterior corner of mouth. Mouth large, gape long. Jaws slender, rather narrow and furnished with rather large teeth. In upper jaw along edges teeth biserial, and on vomer uniserial. Teeth in mandible at first biserial a short distance from symphysis, and then uniserial, though of somewhat irregular size. Teeth in upper jaw not quite so irregular in size. Anterior nostril in a small tube near tip of snout, and posterior a rather large pore on lower external margin of upper lip just below front of eye. Interorbital space rather narrow and convexly elevated.

Gill-opening small and a little low.



Skin naked and smooth, without any scales. A few rather large pores on upper surface of head. Lateral line apparently continuous, and rather superior along side of trunk.

Vertical fins only developed, low, dorsal and anal probably continuous? (damaged) around caudal. Dorsal inserted about first fourth of space between gill-opening and vent. No pectoral.

Color of dried alcoholic largely faded brownish, upper surface all mottled or specked with deeper brownish to dusky. Lower surface of head and all of abdomen to vent pale immaculate brown. Tail all specked like upper surface of trunk. Vertical fins all pale brownish.

Length  $5\frac{7}{8}$  inches? (caudal damaged).

Type, No. 33,120, A. N. S. P. Victoria.

This species is closely related to *Muraenichthys breviceps* Günther, *Ann. Mag. Nat. Hist.*, (4), XVII, 1876, p. 401, from Tasmania. It differs in the more anterior insertion of the dorsal fin.

(Named for Dr. Charles W. De Vis, who has contributed to the ichthyology of Australia.)

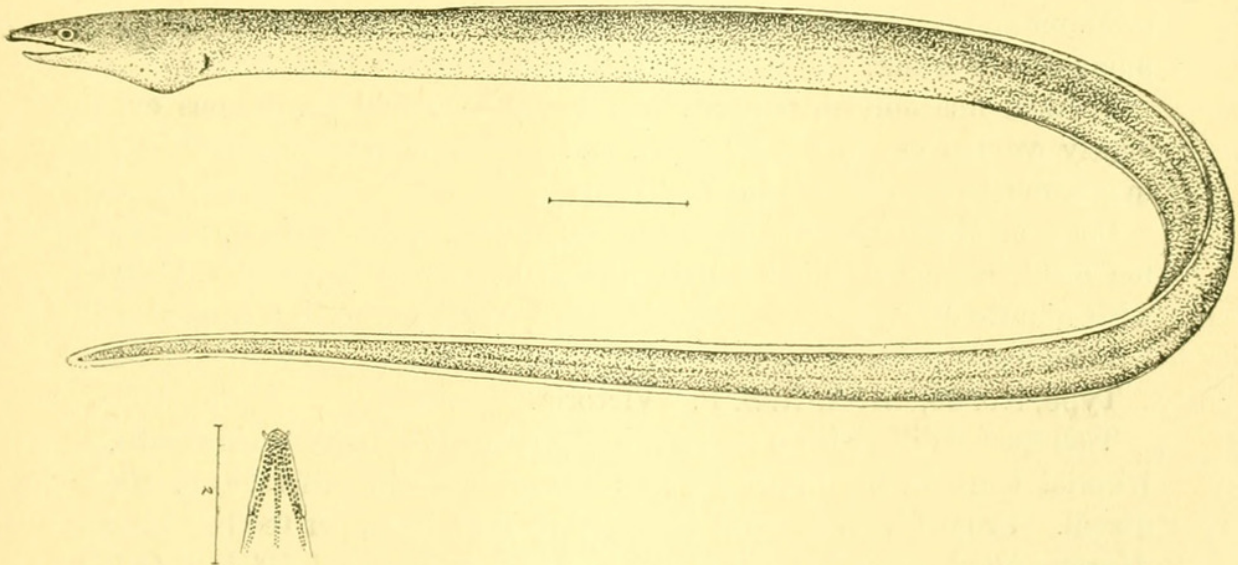


Fig. 3.—*Muraenichthys ogilbyi* Fowler. (Type.)

*Muraenichthys ogilbyi* sp. nov. Fig. 3.

Head about  $11\frac{3}{4}$ ; depth at thorax  $2\frac{1}{4}$  in head; width of head  $3\frac{1}{2}$ ; snout  $4\frac{1}{3}$ ; gape  $2\frac{7}{8}$ ; maxillary 2; eye  $2\frac{1}{8}$  in snout; interorbital space 2.

Body very long, slender, well compressed, and edges rather convexly rounded. Greatest depth at thorax, and otherwise trunk of about more or less equal depth. Tail long, slender, compressed and tapering. Head and trunk  $1\frac{2}{3}$  in tail.



Head small, compressed, attenuated, and swelling into a rather deep thorax. Jaws long, slender, and with equally convex surfaces above and below. Snout long, slender, its tip projecting well beyond mandible, and sides not steep. Eye a trifle longer than deep, its center falling about last fourth in space between tip of snout and corner of mouth, and its lower margin close to edge of mouth. Maxillary slender, concealed, and projecting about an eye-diameter beyond posterior margin of eye. Mouth large, gape long. Jaws narrow and furnished with rather large and more or less equal teeth, above along edges at first triserial, or for a space about  $\frac{3}{4}$  length of snout, and then biserial. Vomerine teeth biserial. Mandibular teeth at first, or about first fifth of length of mandible, triserial, and then biserial, though becoming irregular posteriorly. Anterior nostril evidently in a short fleshy tube near end of snout. Posterior nostril opening in a fold of upper lip about opposite anterior margin of eye. Interorbital space rather narrow and convexly elevated.

Gill-opening small and a little low.

Skin naked and apparently smooth, without any scales. A few pores on snout and head above. Lateral line apparently continuous, superior along side of trunk.

Vertical fins only developed, low, dorsal and anal continuous evidently around caudal? (damaged), and former inserted about first  $\frac{2}{7}$  in space between gill-opening and vent.

Color of dried alcoholic dark uniform brown, lower surface, including head, lighter. Under a lens upper surface seen covered entirely with minute dusky dots. Iris brownish. Vertical fins dull brownish.

Length  $13\frac{5}{8}$  inches.

Type, No. 33,121, A. N. S. P. Victoria.

This species differs from the last chiefly in the biserial vomerine teeth, triserial teeth in the upper jaw, and more posterior insertion of the dorsal. From *M. breviceps* it differs in its triserial upper teeth. Like *Muraenichthys nicholsæ* Waite, *Rec. Austr. Mus.*, V, No. 3, 1904, p. 142, Pl. 17, fig. 1, from Lord Howe Island, this species has a sac under the throat. It differs however in the more anterior insertion of the dorsal.

(Named for Dr. J. Douglass Ogilby, who has contributed much to Australian ichthyology.)

#### EXOCETIDÆ.

*Exocætus volitans* Linnaeus.

One small example agreeing with my Hawaiian material.



## ATHERINIDÆ.

*Atherina presbyteroides* Richardson.

Head  $4\frac{2}{5}$ ; depth about  $6\frac{1}{4}$ ?; D. IX-I, 1, 10, 1; A. I, 1, 12, 1; P. 1, 10; scales from gill-opening to base of caudal (guessed according to pockets) at 45?; about 9? scales in a vertical series up from origin of ventral; width of head  $1\frac{7}{8}$  in its length; pectoral  $1\frac{1}{3}$ ; snout  $3\frac{3}{4}$  in head measured from tip of upper jaw; eye  $2\frac{4}{5}$ ; maxillary  $2\frac{1}{2}$ ; interorbital space  $3\frac{1}{3}$ . Belly apparently not swollen. Snout short, obtuse as seen from above. Eye large, high, a trifle anterior. Mandible protruding and rami elevated a little inside mouth. Maxillary reaching a trifle beyond front margin of eye, without teeth. Teeth in narrow bands in jaws and a short narrow band across vomer. Interorbital space flat. Ridge of preopercle nearly forming a right angle. Scales large, cycloid, narrowly exposed in longitudinal series and loosely adherent. Head and base of caudal scaly, otherwise fins naked. Spinous dorsal inserted nearer tip of snout than base of caudal or a short space behind origin of ventral, and spines all rather slender, flexible and second longest. Rayed dorsal inserted nearer origin of ventral than base of caudal or a little behind origin of anal, and first rays longest. Rayed anal similar to last. Pectoral reaches about  $1\frac{1}{3}$  to origin of spinous dorsal. Ventral inserted a little nearer origin of pectoral than that of anal. Vent about opposite base of last dorsal spine. Color in alcohol faded brownish generally. A silvery band about 2 or 3 scales distant from dorsal ridge of back from shoulder to base of caudal, rather narrow after rayed dorsal and anal and bounded by a narrow leaden line along its upper margin. Sides of head and iris silvery. Fins plain pale brown. Length about 2 inches (caudal damaged).

This differs a little from the original account in the possession of an additional anal ray and the depth of the body being a little less than the length of the head.

MACRORHAMPHOSIDÆ.<sup>1</sup>

*Macrorhamphosus scolopax elevatus* (Waite).

A small example agrees with young Italian examples of *M. scolopax*. Depth of body  $2\frac{1}{2}$  in space between posterior margin of eye and base of caudal, and dorsal spine about  $2\frac{2}{5}$  in latter. Eye about 3 in snout.

LIMICULINA subgen. nov.

Type *Centriscus humerosus* Richardson.

Differs from subgenus *Macrorhamphosus* Lacépède in the more

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<sup>1</sup> *Fistularia petimba* (Lacépède) from Fiji.



posterior vertical fins, so that origin of spinous dorsal is close before base of last dorsal ray, and in having the beak directed upwards.

(*Limicula*, an old name for the godwit, with reference to the upturned beak.)

*Macrorhamphosus humerosus* (Richardson).

One example.

### SYNGNATHIDÆ.<sup>2</sup>

CASTELNAUINA subgen. nov.

Type *Solenognathus spinosissimus* Günther.

Differs from subgenus *Solegnathus* Swainson in having the rings with small low spines along their edges.

(Named for Count Francis de Castelnau, who studied the fishes of Victoria.)

*Solegnathus spinosissimus* (Günther).

Two examples.

*Phyllopteryx tæniopterus* (Lacépède).

Four examples from Portland, Victoria.

*Phyllopteryx elongatus* Castelnau.

Two small examples appear to agree with Castelnau's account, and though the sexes are undetermined the greatest depth of the body is about half the length of the snout. The spines on the snout are laterally superior. Cutaneous appendages and end of tail black. Portland, Victoria.

MACLEAYINA subgen. nov.

Type *Hippocampus bleekeri* sp. nov.

Differs from subgenus *Hippocampus* Rafinesque in the long dorsal the rays being about 28 to 31, while in the latter they are about 12 to 20.

(Named for Hon. William Macleay, the distinguished Australian zoologist.)

*Hippocampus bleekeri* sp. nov. Fig. 4.

Head  $1\frac{3}{5}$  in trunk, measured to gill-opening; depth of trunk 2 in its length; width of trunk  $5\frac{1}{5}$ ; trunk  $2\frac{1}{5}$  in tail; D. 28; A. 5; P. 15; rings 12 + 48; depth of head, at coronet,  $1\frac{3}{5}$  in its length; width of head  $2\frac{2}{3}$ ; snout 2; eye  $8\frac{1}{2}$ ; base of dorsal  $1\frac{1}{2}$ ; interorbital space  $1\frac{1}{5}$  in eye.

Body elongate, moderately deep, trunk comparatively short and

<sup>2</sup> *Syngnathus semistriatus* (Kaup) and *Stigmatophora nigra* Kaup. Two specimens representing these Australian species are listed from Fiji.



well compressed. Tail very long, slender, quadrangular and tapering in a long point.

Head moderately large, deep and compressed. Snout long, slender. of more or less even depth throughout, and its greatest width about

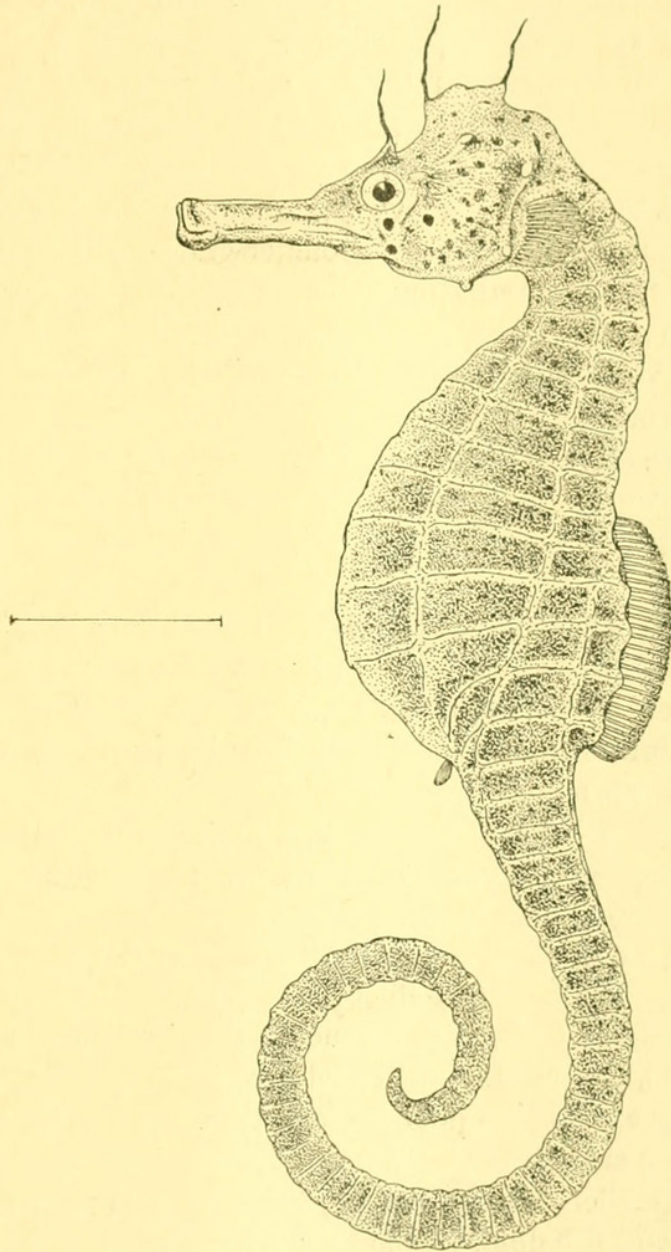


Fig. 4.—*Hippocampus bleekeri* Fowler. (Type.)

equal to greatest distal depth of muzzle. Eye small, high, a trifle longer than deep, and its center falling slightly behind middle in length of head. Mouth terminal, small, superior, and with thin jaws slightly protruding above and below. Nostrils small, close to middle



of front rim of orbit. Interorbital space narrow, forming an isosceles triangle, angle formed about  $\frac{2}{3}$  an eye-diameter anterior to eye.

Gill-opening about 2 in eye, vertical, and laterally superior on nape near nuchal keel.

Coronet high, its upper surface slightly concave, with 2 lateral tubercles, and an elevated prominence springing from ridge in front. Below latter, on each side of head, a round tubercle. A slight trenchant keel at front of interorbital space longitudinally, and each side of triangle separated from this though gradually springing up into a high slender bony process above posterior margin of eye. A blunt postorbital tubercle near eye. Shoulder-girdle with 3 large round tubercles. A few fine radiating striæ on opercle. From each supra-orbital process a rather long slender cutaneous filament, 1 from anterior process of coronet and 1 from each posterior process. Body-rings mostly with concave surfaces, without spines, though ridges rather minutely asperous and forming slight tubercles on those on trunk more or less, though none distinctly enlarged at intervals. On tail ridges are more or less obsolete, except those forming longitudinal edges.

Fins rather small, with simple rays. Dorsal with long base, beginning on posterior portion of ninth ring, and then extending on to third caudal ring near its posterior margin. Anal small, short, in first ring of tail. Pectoral with a moderately broad base, rays rather short. Vent a little before anal.

Color in alcohol brown, more or less uniform, or darker mottlings within each square evidently result of preservation. Opercular region with some round blackish spots. However upper surface of tail is marked by about a dozen transverse saddles, most distinct on dorsal surface. Dorsal rather dusky.

Length, measured from tip of coronet to tip of extended tail, 9 inches.

Type, No. 33,122, A. N. S. P. Victoria.

Also another example in poor preservation. It has about 28 dorsal rays, and has a similar long tail and comparatively moderately deep trunk. Still smaller examples agree, though 2 at present are whitish with minute brownish dots, visible only under a lens.

This species is related to *Hippocampus abdominalis* Lesson, but differs at once in the longer snout and more contracted depth. Bleeker has roughly figured the present species as *H. abdominalis* in *Verh. Kon. Ak. Wetensch.*, Amsterdam (Visch. Van Diemensl.), II, 1855, p. 28, Pl., fig. 4, from Tasmania.

(Named for Dr. Pieter van Bleeker, who studied the fishes of Tasmania.)



*Hippocampus agnesæ* sp. nov. Fig. 5.

Head 2 in trunk, measured to gill-opening; depth of trunk  $1\frac{1}{5}$  in its length; width of trunk  $3\frac{4}{5}$ ; trunk about 2 in tail; D. 29; A. 3?; P. 17; rings 12 + 47; depth of head, at coronet,  $1\frac{3}{7}$  in its length; width of

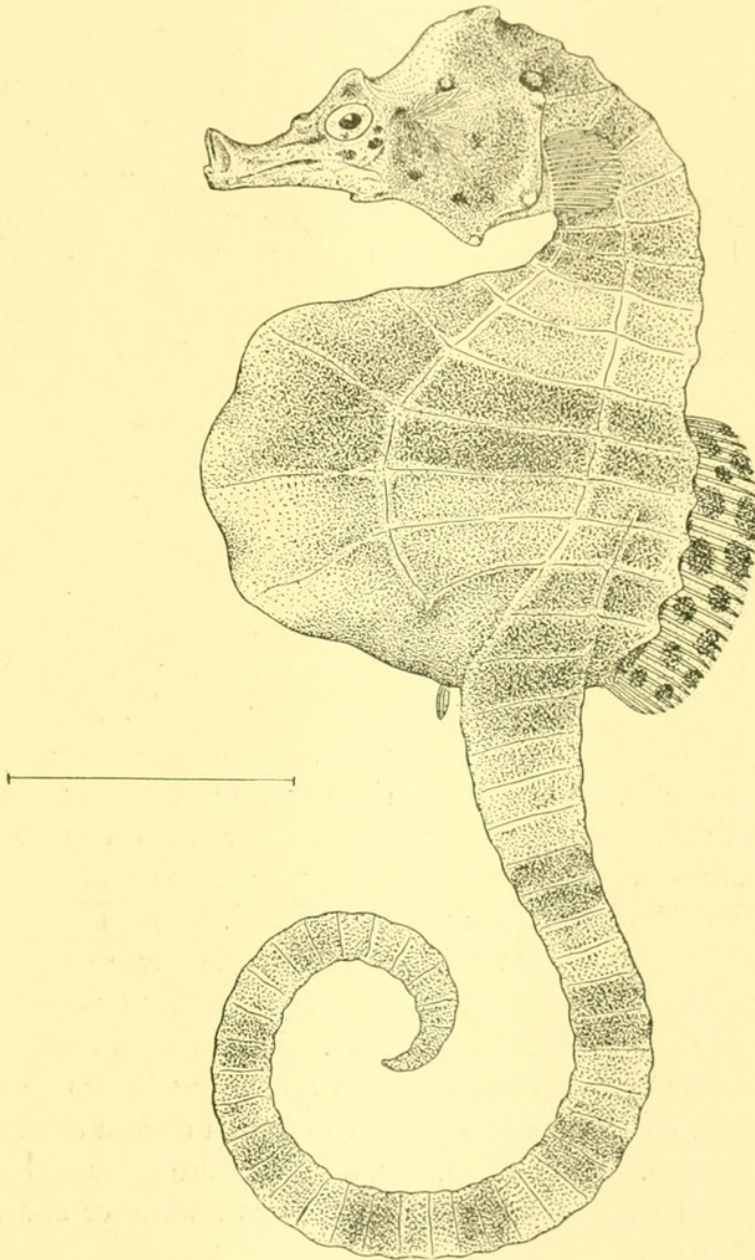


Fig. 5.—*Hippocampus agnesæ* Fowler. (Type.)

head  $2\frac{1}{5}$ ; snout  $2\frac{2}{3}$ ; eye  $5\frac{3}{5}$ ; base of dorsal  $1\frac{1}{10}$ ; interorbital space  $1\frac{2}{3}$  in eye.

Body long, very deep, trunk very short and deeply compressed. Abdomen in front forming a deep trenchant keel, undulate as seen in



profile. Tail very long, compressed at first or with its width a trifle less than its depth, then soon becoming quadrangular, and tapering rather suddenly into a strong point.

Head small, deep and compressed. Snout short, robust, its least depth about midway in its length, and its greatest width about  $1\frac{1}{6}$  in greatest distal depth of muzzle. Eye small, a trifle longer than deep, and its center falling a trifle before middle in length of head. Mouth moderately small, terminal, superior, and with rather thin jaws slightly protruding above and below. Nostrils small, together, close to middle of front rim of eye. Interorbital space narrow, concave, forming an isosceles triangle, with angle about  $\frac{2}{3}$  an eye-diameter anterior to eye.

Gill-opening about  $\frac{3}{5}$  of eye, vertical, and laterally superior on nape near nuchal keel.

Coronet moderately elevated, forming a trenchant keel, which is very slightly convex in profile and with a slight level space posteriorly at summit. Ridge of coronet on each side anteriorly with a slight tubercle and posterior edge with a slight tubercle also at each side. Below former, on each side of head, a large elevated tubercle. A trenchant and slightly elevated keel at front of interorbital angle, and each side of triangle separated from this though gradually springing up into a high broad bony process above posterior margin of eye. A very obsolete postorbital tubercle near eye. Shoulder-girdle with 3 large rounded tubercles. Opercle with many fine radiating striæ. Head without any filaments. Body-rings mostly with concave surfaces, without spines, though ridges slightly asperous and forming slight tubercles on those on trunk more or less, though none distinctly enlarged at intervals. On tail ridges become more or less obsolete, especially towards tip, though those forming longitudinal edges distinct.

Fins rather small, with simple rays. Dorsal with long base, beginning on middle of tenth ring, though appearing in profile close to its anterior edge, and then extending on to fourth caudal ring, towards its posterior margin. Anal small, short, just before ridge of third ring on tail. Pectoral with a broad base and rays all rather short. Vent a little before anal.

Color in alcohol faded dull brownish, head and ridges of rings all pale. Lower side of head with some few brownish spots, all a little smaller than pupil. Fifth, sixth and seventh, tenth, eleventh and twelfth of body-rings, and third and fourth, ninth and tenth, thirteenth and fourteenth, seventeenth and eighteenth, twentieth, twenty-first and twenty-second, and most likely beyond on tail, all deeper



brown than general color. Dorsal brownish, spotted distinctly with dusky, edge of fin apparently not darker than elsewhere.

Length, measured from tip of snout to tip of extended tail, about 7? inches.

Type, No. 33,123, A. N. S. P. Victoria.

Also another example with same data, a trifle smaller but agreeing in most all particulars.

This species is related to *Hippocampus abdominalis* Lesson from New Zealand, but differs in the much shorter snout and absence of tentacles.

(Named for Mrs. Agnes F. Kenyon who collected the type.)

#### APOGONIDÆ.

*Mionorus ramsayi* sp. nov. Fig. 6.

Head  $2\frac{1}{3}$ ; depth  $2\frac{1}{8}$ ; D. VII-I, 7, 1; A. II, 7, 1; P. I, 12; V. I, 5; scales 26 in lateral line to base of caudal and 3 more on latter; 3 scales between origin of spinous dorsal and lateral line; 3 scales between origin of second dorsal and lateral line; 7 scales in a vertical series between origin of spinous anal and lateral line; width of head  $2\frac{1}{4}$  in its length; depth of head at posterior margin of eye  $1\frac{1}{5}$ ; mandible  $1\frac{3}{4}$ ; third dorsal spine  $1\frac{1}{3}$ ; spine of rayed dorsal 2; least depth of caudal peduncle  $2\frac{1}{5}$ ; second anal spine  $2\frac{1}{10}$ ; first branched anal ray (damaged)  $1\frac{3}{5}$ ; pectoral  $1\frac{1}{3}$ ; ventral  $1\frac{1}{8}$ ; ventral spine 2; snout  $4\frac{1}{2}$  in head measured from tip of upper jaw; eye 3; maxillary  $1\frac{3}{4}$ ; interorbital space  $3\frac{1}{4}$ .

Body deep, well compressed, greatest depth at origin of spinous dorsal, back elevated, edges of body apparently rounded, upper profile anteriorly more inclined than lower, which is also a little more convex. Caudal peduncle compressed, rather deep, and its least depth about  $1\frac{1}{4}$  in its length.

Head large, very deep, well compressed, slightly convergent below, lower profile a little convex and a trifle more inclined than upper, which is straight. Snout short, its length 2 in its width, and surface convex. Eye large, circular, close to upper profile and falling about first third in head. Mouth large, well inclined, and mandible slightly protruding in front. Maxillary long, well inclined, slightly curved up, and reaching beyond posterior margin of pupil slightly, though not quite to posterior margin of eye. Distal expansion of maxillary nearly equals diameter of pupil. Teeth in bands in jaws, small, short, simple and rather even. Small teeth on vomer and palatines. Nostrils together on side of snout above. Interorbital space depressed or flattened. Ridge and margin of preopercle slightly uneven, though not serrated and former inclined a little posteriorly. Opercle without spine.



Gill-opening extending forward opposite anterior margin of pupil. Gill-rakers slender, pointed, about equal to diameter of pupil, and  $2? + 8?$  in number. Filaments rather short, apparently a little shorter? than rakers. Isthmus forms a long narrow slender trenchant keel.

Scales large, conspicuously ctenoid, and in series above lateral line parallel with its course, and below in horizontal series. Head scaly,

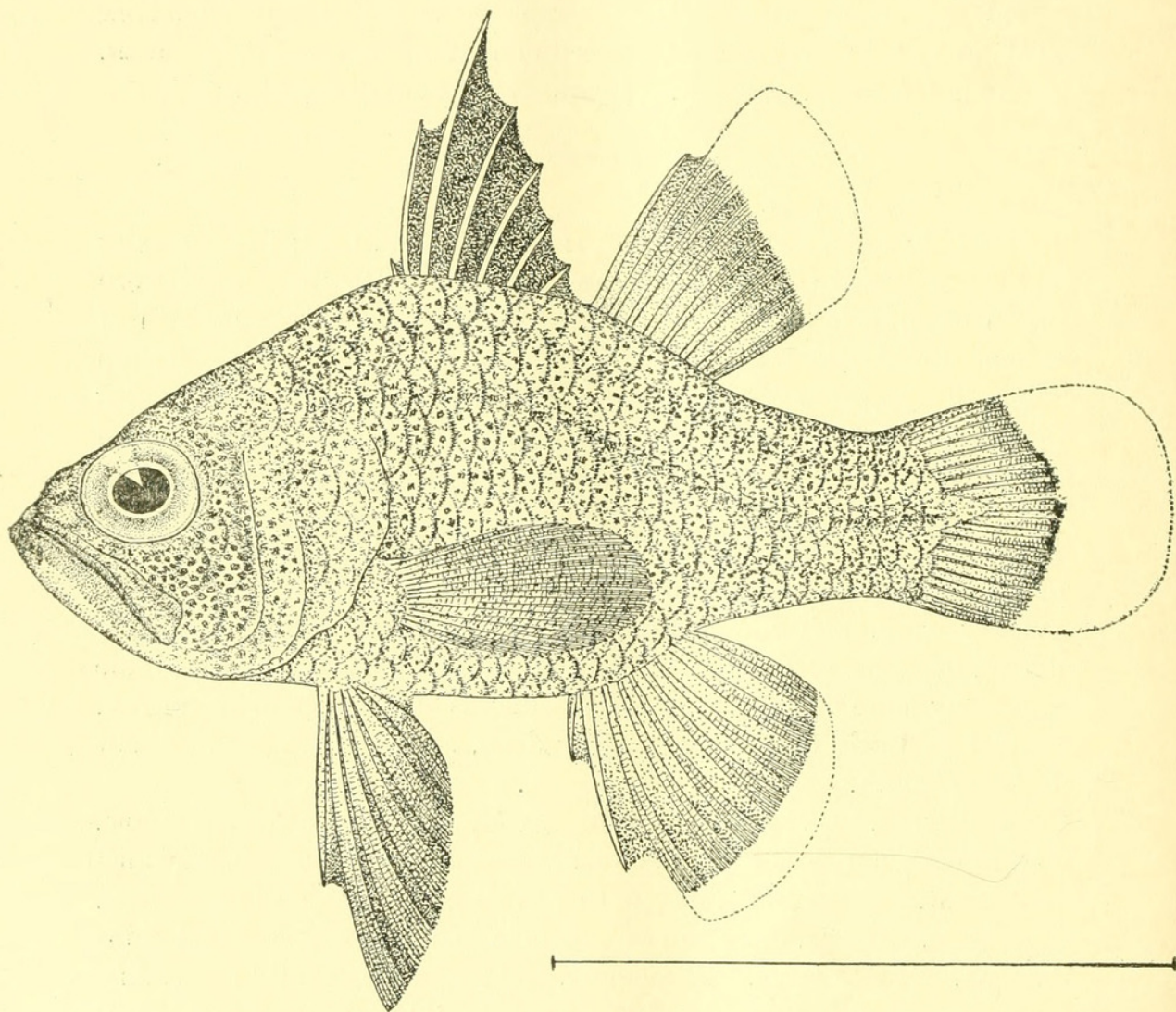


Fig. 6.—*Mionorus ramsayi* Fowler. (Type.)

about 2 series on cheek (according to pockets), and scales on opercles large. Between bases of ventrals a series of 2 large scales and its length a trifle over a third of fin. Base of ventral scaly in axilla. A few scales on base of caudal, and other fins all naked. Lateral line and its course concurrent with dorsal profile. Tubes simple, and extending well over scales.



Origin of spinous dorsal about opposite posterior margin of opercle or much nearer tip of snout than base of caudal, third spine longest, first shortest, and last much shorter than second. Rayed dorsal with its origin about midway between posterior margin of eye and base of caudal, and anterior rays highest. Rayed anal similar, and depressed fin reaching base of caudal. Second anal ray longer, and origin of spinous anal a little nearer posterior margin of eye than base of caudal. Caudal (damaged) probably rounded? Pectoral long, reaching a little beyond origin of rayed anal or a trifle more than half way to base of caudal, and upper median rays longest. Ventral inserted a trifle before origin of pectoral and reaching a little beyond tip of depressed pectoral, first ray longest. Vent close in front of anal.

Color faded in alcohol largely dull brown, scales everywhere minutely and obscurely specked or dotted with slightly darker. Iris slaty. Fins all pale brown. Spinous dorsal and ventrals blackish, especially so distally.

Length  $1\frac{3}{4}$  inches (caudal damaged).

Type, No. 33,124, A. N. S. P. Victoria.

This species resembles *Apogonichthys darnleyensis* Alleyne and Macleay, but differs in the absence of minute serræ on the edges of the preopercle, and coloration. From *Apogonichthys adspersus* Castelnau it differs in fewer scales and more dorsal spines. From *Apogonichthys longicauda* De Vis, from Queensland, it differs in having the second dorsal spine much longer than the first, proportions of head and depth and coloration.

(Named for Dr. E. Pierson Ramsay, the well-known Australian naturalist.)

#### ENOPLOSIDÆ.

*Enoplosus armatus* (White). "Old Wife."

One example from Sorrento, on the coast of Victoria.

#### HÆMULIDÆ.

*Terapon ouvieri* (Bleeker).

One young.

#### POMACENTRIDÆ.

*Tetradrachmum aruanum* (Linnæus).

One example.

#### LABRIDÆ.

*Lepidaplois richardsoni* sp. nov. Fig. 7.

Head  $3\frac{1}{4}$ ; depth  $2\frac{3}{4}$ ; D. XII, 11; A. III, 10, 1; P. I, 16; V. I, 5; scales



31 in lateral line to base of caudal and 3 more out on latter; 7 scales obliquely back from origin of spinous dorsal to lateral line; 6 scales obliquely back from origin of rayed dorsal to lateral line; 12 scales in a vertical series between origin of spinous anal and lateral line; width of head about 2 in its length; depth of head at posterior margin of eye about  $1\frac{2}{7}$ ; snout 3; eye  $3\frac{3}{4}$ ; maxillary  $2\frac{1}{2}$ ; interorbital space  $3\frac{1}{2}$ ; first dorsal spine  $5\frac{4}{5}$ ; twelfth dorsal spine 3; third dorsal ray about  $2\frac{1}{5}$ ; third anal spine nearly 3; fourth anal ray  $2\frac{3}{4}$ ; least depth of caudal peduncle  $1\frac{3}{5}$ ; caudal about  $1\frac{2}{5}$ ; pectoral (damaged)  $1\frac{2}{5}$ ?; ventral (damaged) about  $1\frac{2}{5}$ ?

Body well compressed, comparatively short and deep, with greatest

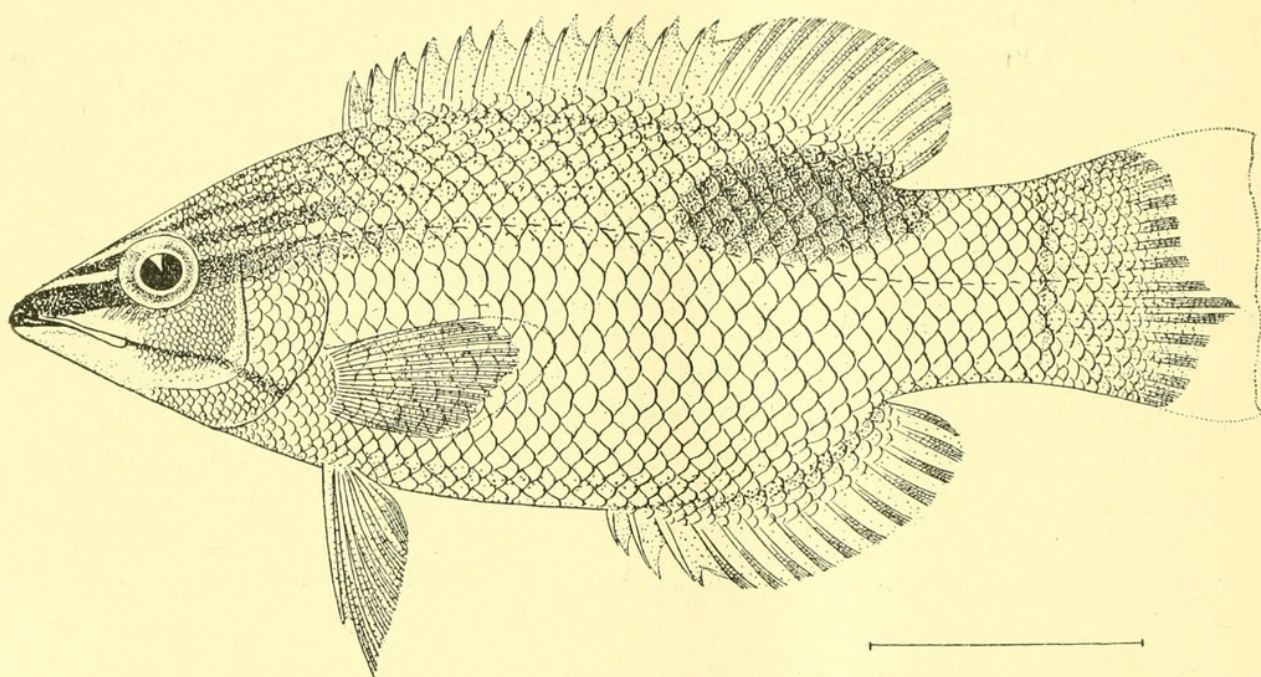


Fig. 7.—*Lepidaplois richardsoni* Fowler. (Type.)

depth about midway in entire length of fish, edges convexly rounded, and profiles similar. Predorsal region converging a little above, but its edge not trenchant. Caudal peduncle deep, compressed, and its length about  $\frac{4}{7}$  its least depth.

Head moderately small, well compressed, and profiles each nearly straight, or sloping down in front till about midway in depth of head, so that muzzle is somewhat attenuated. Snout rather conical, its width at base about  $1\frac{1}{6}$  in its length. Eye a trifle longer than deep, high or close to upper profile, and its center falling a trifle anterior in length of head. Mouth narrow, rather long, and jaws of about equal length in front. Maxillary long, well concealed above or only its lower



portion rather narrowly exposed, and reaching a trifle beyond front margin of eye. Teeth in jaws strong, uniserial, conic, and with 4 canines in front of each jaw slightly directed forwards. Of upper canines all are of about uniform size, though of lower 2 median are a little smaller than outer. Lips thin and little fleshy. Nostrils close together near upper front margin of eye, and anterior a trifle larger. Interorbital space moderately broad, depressed and but slightly elevated convexly. Preorbital moderately broad, its least width about 2 in horizontal diameter of eye. Posterior margin of preopercle nearly straight and very slightly inclined forward, its edge very finely serrated.

Gill-opening extending forward about opposite middle of eye.

Scales large, cycloid, broadly exposed, and becoming smaller towards edges of body, on head and bases of fins. On costal region and middle of side of trunk scales largest. Of head muzzle and interorbital space naked. Preorbital and infraorbital with a number of short flutings of tubes radiating from lower margin of eye. Scales on opercle a little larger than elsewhere on head, and those on cheek in 9 series. Along bases of vertical fins scales rather large, and but slightly reduced on base of caudal. Lateral line continuous, rather high, concurrent with dorsal profile, then dropping down on side of caudal peduncle till about midway in depth of latter, and continued well out on base of latter. Tubes slender or rather attenuated, persisting to posterior edge of scale, and usually simple or only very slightly ramified or arborescent.

Origin of spinous dorsal nearer origin of rayed dorsal than tip of snout, or a little behind that of pectoral, and anterior spines graduated up till about midway in length of fin, after which they are more or less subequal with last longest. Margin of spinous dorsal deeply notched between tip of each spine, and membrane forming a slight cutaneous flap projecting slightly after though close behind tip of each. Rayed dorsal much shorter than spinous, insertion of fin about midway between origin of spinous fin and base of caudal, radii all more or less subequally high, except last few which are shorter, and posterior edge of fin rounded. Anal spines graduated up from first which is shortest, origin of fin a little before that of soft dorsal, and margin notched with slight flaps like those of spinous dorsal. Rayed anal similar to rayed dorsal, and inserted very slightly anterior to origin of latter. Caudal (damaged) apparently truncate, with corners pointed? Pectoral (damaged) apparently rounded, with upper rays longest. Origin of ventral about opposite that of pectoral, with spine about  $\frac{5}{7}$  in length of



fin, and entire length of latter reaching about  $\frac{3}{4}$  to origin of spinous anal. Vent evidently close in front of latter.

Color of dried skin faded very pale brown generally, back and upper surface of head scarcely darker. On membrane of spinous dorsal between first and second rays and extending apparently a little over second spine a deep brown blotch a little smaller than eye. On back below bases of posterior dorsal rays and upper surface of caudal peduncle anteriorly, a blackish-brown blotch, very conspicuous, and extending horizontally forward to lateral line till about opposite origin of rayed dorsal. From anterior side of tip of snout to eye, then continued back from posterior margin of latter a little inferiorly along upper side of head and fading out on front of back below lateral line, a deep brown band, its width about equal to half a vertical eye-diameter. From upper surface of tip of snout a band is given off on each side, including nostrils where a lower ramification extends to eye, and is continued from upper posterior margin of latter parallel with one below, fading out on front of back. This band is also nearly as broad as one below and equally distinct. Rest of upper surface of head with several still narrower and slightly wavy bands or streaks of same color, though a little indistinct. From end of maxillary a narrow deep brown streak extends back over cheek below, passing over angle or corner of preopercle towards lower base of pectoral. Fins otherwise than noted all pale uniform brownish. Iris dusky.

Length about  $4\frac{1}{2}$  inches (caudal damaged).

Type, No. 33,125, A. N. S. P. Victoria.

This species is closely related to *Lepidaplois bilunulatus* (Lacépède) as figured under *Cossyphus bilunulatus* Bleeker, *Atlas Ichth.*, I, 1862, p. 160, Pl. 38, fig. 3, from Amboyna. It differs however from Bleeker's fish in having about 5 longitudinal dark bands converging on the upper half of the head, and a much narrower streak extending back from the maxillary to the corner of the preopercle. There are also no posterior canines such as Bleeker shows. From *Lepidaplois alboteniatus* (Valenciennes) as figured by Jordan and Evermann, *Bull. U. S. Fish Comm.*, XXIII, pt. 1, 1903 (1905), p. 278, Pl. 24, it differs in having broader bands above the inferior orbital one.

(Named for Sir John Richardson, among the most accurate of the early writers on Australian fishes.)

*Coris dorsomacula* sp. nov. Fig. 8.

Head about  $3\frac{2}{3}$ ; depth about  $3\frac{3}{5}$ ; D. IX, 12; A. III, 12; P. I, 11; V. I, 5; scales 5 in lateral line to base of caudal and 4 more on latter (with tubes); 4 scales obliquely back from origin of spinous dorsal to lateral



line; 4 scales obliquely back from origin of rayed dorsal to lateral line; 17 scales in a vertical series between origin of spinous anal and lateral line; 7 scales from middle of upper surface of caudal peduncle obliquely back down to lateral line; 7 scales from middle of lower surface of caudal peduncle obliquely forward to lateral line; width of head probably about 2 in its length; depth of head at posterior margin of eye about  $1\frac{1}{2}$ ; snout, measured from tip of upper jaw, 3; eye 4; maxillary 4; interorbital space about  $4\frac{1}{5}$ ; first dorsal spine  $4\frac{1}{3}$ ; ninth dorsal spine  $2\frac{2}{3}$ ; fourth dorsal ray nearly 2; third anal spine about  $4\frac{1}{4}$ ; first anal ray about  $2\frac{1}{3}$ ; eleventh anal ray 2; least depth of caudal peduncle about  $1\frac{7}{8}$ ; pectoral about  $1\frac{2}{7}$ ; ventral  $1\frac{2}{3}$ .

Body well compressed, elongate, contour rather fusiform with similarly convex profiles, greatest depth about midway in its length,

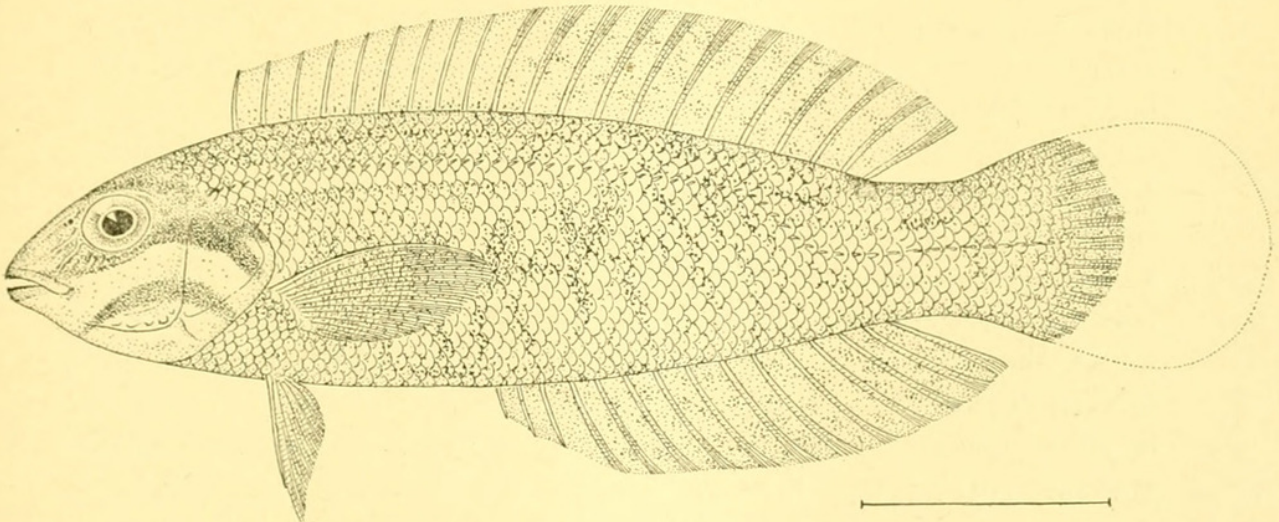


Fig. 8.—*Coris dorsomacula* Fowler. (Type.)

and edges rather narrowly convex, though apparently not trenchant. Caudal peduncle rather deep, well compressed, and its least depth about equal to its length.

Head moderately small, compressed, sides apparently flattened, and upper profile a little more convexly inclined than lower. Muzzle conic, attenuated. Snout rather long, its surface convex, and its width equal to its length, inclusive of upper jaw. Mouth horizontal, falling a little below center in depth of head, and rather small. Teeth conic, uniserial, and becoming enlarged anteriorly in jaws, where they form 4 rather large canines both above and below, median 2 of each series a little larger than others. Anteriorly teeth are all directed a little forwards, especially enlarged canines. Lips apparently rather thin.



Nostrils superior on side of snout near upper anterior margin of eye, and posterior much larger than anterior. Interorbital space depressed or slightly flattened, only sides a little elevated. Width of preorbital about  $\frac{4}{5}$  of eye. Posterior margin of preopercle inclined very slightly forward.

Gill-opening moderate.

Scales rather large, thin, disposed in longitudinal series parallel with lateral line, becoming slightly smaller towards edges of body, on breast, predorsal region and base of caudal. Head, and all fins, except base of caudal, naked. Lateral line superior, concurrent with the dorsal profile of back till below posterior portion of rayed dorsal when it descends till midway on side of caudal peduncle, and then extending straight to base of caudal. Tubes simple, large, and on anterior or elevated portion of lateral line all bent up, though all extending rather close to margins of scales. On side of caudal peduncle tubes are horizontal. On preorbital and limb of preopercle are some short radiating flutings. A series of pores along infraorbital.

Origin of spinous dorsal about midway between tip of upper jaw and base of first dorsal ray or apparently a trifle before origin of pectoral. Spines slender, firm and graduated up from first which is shortest, and margin of fin apparently entire. Origin of rayed dorsal a little nearer posterior margin of eye than base of last dorsal ray, and anterior rays a little shorter than last, and margin of fin a little convex. Origin of spinous anal about midway between tip of snout and base of caudal or about opposite origin of pectoral, spines small, slender, firm and graduated from first to third, which latter is longest and margin of fin entire. Rayed anal similar to rayed dorsal, except posterior rays seem a little longer than anterior. Caudal (damaged) probably with posterior margin convex? Pectoral moderate, upper rays longest. Ventral inserted about opposite origin of pectoral, though apparently not quite reaching vent. Ventral spine slender, about  $\frac{5}{7}$  length of fin. Vent close in front of anal.

Color when dried in alcohol faded largely dull brownish. A pale or dull grayish streak extends from lower preorbital region up to lower margin of eye, then back from latter towards shoulder, though giving off a branch towards base of pectoral. From under surface of mandible at its articulation extends back convexly over cheek, crossing posterior margin of preopercle just above its angle, and finally decurves over lower portion of opercle. A pale streak along lateral line for greater part of its course superiorly, and paler or lighter anteriorly. Trunk with pale and darker vermiculations, especially contrasted on



costal region. Rayed vertical fins all with traces of dusky blotches or spots, though now obscure. A jet-black blotch at bases of last dorsal rays. Iris brownish.

Length  $4\frac{5}{8}$  inches (caudal damaged).

Type, No. 33,126, A. N. S. P. Victoria.

This species is very closely related to *Coris venusta* Vaillant and Sauvage from Honolulu, but differs in the jet-black blotch at the bases of the last two dorsal rays. It approaches most closely the figure of *Hemicoris remidius* Jenkins, *Bull. U. S. Fish Comm.*, XIX, 1899 (1900), p. 49, fig. 5, also from Honolulu, which is thought identical with *Coris venusta*.

(*Dorsum*, back; *macula*, spot; with reference to the black spot at the bases of the last dorsal rays.)

#### MONACANTHIDÆ.<sup>3</sup>

*Brachaluteres trossulus* (Richardson).

One small example.

*Osbeckia scripta* (Gmelin).

One young.

#### DIODONTIDÆ.

*Diodon blochii* Castelnau.

One example.

#### OSTRACIIDÆ.<sup>4</sup>

*Aracana aurita* (Shaw).

One large example.

*Aracana flavigastra* (Gray).

Four specimens agreeing with Richardson's figure.

*Aracana ornata* (Gray).

Two fine examples.

#### TETRODONTIDÆ.<sup>5</sup>

*Spheroides richei* (Fréminville).

One example with 3 dark or blackish saddles over the back.

*Tetrodon nigropunctatus* Schneider.

One example of deep chocolate-brown color and fins all with pale creamy tints. Spines over body of moderate length.

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<sup>3</sup> *Chaetodon lunula* (Lacépède) from the Hawaiian Islands.

<sup>4</sup> *Ostracion concatenatus* Bloch, *Ostracion lentiginosus* Schneider and *Ostracion cornutus* Linnæus from "South Sea Islands."

<sup>5</sup> *Remora remora* (Linnæus) from New Zealand.



## TRICHONOTIDÆ.

LESUEURINA gen. nov.

Type *Lesueurella platycephalus* sp. nov.

Differs from *Hemerocates* Valenciennes in the absence of the spine at the anterior termination of each maxillary, the insertion of the dorsal posterior to that of the anal, and the protruding mandible.

(Named for Charles Alexandre Le Sueur, the first to study the fishes in the collection of the Academy of Natural Sciences of Philadelphia.)

*Lesueurina platycephala* sp. nov. Fig. 9.

Head  $4\frac{1}{3}$ ; depth 7; D. 32; A. 37; P. 16; V. I, 5; 42 scales in lateral line to base of caudal; 5 scales obliquely back from origin of dorsal to lateral line; 8 scales obliquely up behind from origin of anal to lateral

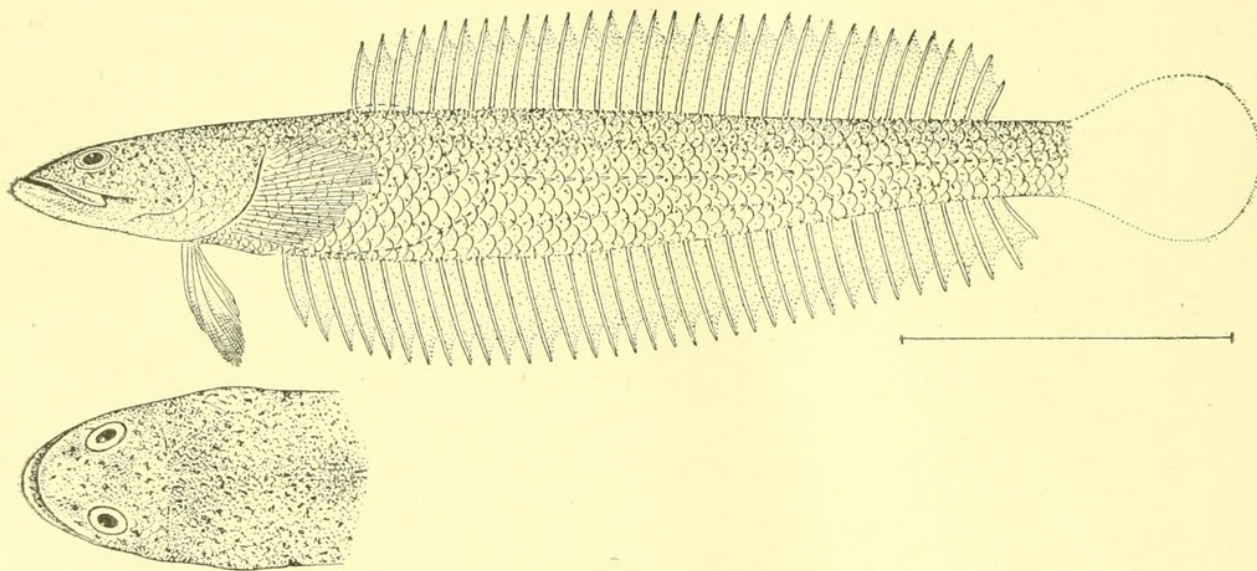


Fig. 9.—*Lesueurina platycephala* Fowler. (Type.)

line; width of head  $1\frac{2}{5}$  in its length; depth of head 2; twenty-ninth dorsal ray about 3; thirty-third anal ray  $2\frac{2}{3}$ ; pectoral (damaged) about 1; ventral (damaged)  $1\frac{7}{8}$ ; least depth of caudal peduncle  $3\frac{1}{4}$ ; snout  $4\frac{2}{3}$  in head measured from tip of upper jaw; eye 6; maxillary  $2\frac{2}{5}$ ; interorbital space 5.

Body elongate, well compressed, and becoming depressed anteriorly, so that greatest width which is at posterior margin of preopercle is a little more than greatest depth of body. Greatest depth of body towards end of depressed pectoral, and trunk sloping back gradually from this point to least depth of caudal peduncle with similar straight profiles. Predorsal region broadly convex. Caudal peduncle well compressed, deep and short.



Head broad, depressed, in lateral profile appearing attenuated, and when viewed above its greatest width at posterior margin of preopercle or about last third of its length. Anterior profile as seen from above convex, though rather narrowly constricted. Snout broad, short, its anterior profile broadly convex as seen from above, and its length  $1\frac{2}{5}$  in its width at front margins of orbits. Eye small, superior, a little longer than deep though rounded, and its center falling about first fourth in space between tip of snout and posterior margin of opercle. Mouth large, broad, and mandible projecting well beyond tip of upper jaw in front. As seen below mandible is broadly convex around front profile, or its width about  $1\frac{1}{6}$  in its length. Maxillary narrow, reaching back till opposite posterior margin of eye, and its distal extremity slender or forming a point below. Rather narrow bands of small slender pointed teeth in jaws. Similar teeth in two widely separated short narrow bands or series on each side of vomer in front, each of these close behind band in jaw. On each side of roof of mouth also a similar band or series to those on vomer, though a little further from band around edge of jaw. Roof of mouth otherwise edentulous. Tongue rather large, broad, depressed, rounded in front and apparently little free. Nostrils (damaged) apparently similar, close together directly in front of eye. Interorbital space narrow and flattened. Top of head posterior to eyes broad, very slightly convex to nearly flat, and from upper sides rather converging below to branchiostegal region, though at this point, and across isthmus, rather broadly depressed. Posterior margin of preopercle entire and convex. Pre-orbital and infraorbitals rather roughly rugose.

Gill-openings large and extending well forward. Gill-rakers not now evident and filaments also probably dried. Isthmus rather narrowly triangular, and with lower surface forming a short trenchant keel.

Scales large, distributed over most of head and all of trunk, and on latter forming longitudinal series parallel with lateral line. Scales on head rather small, and extending down on cheek and opercle. On trunk scales on predorsal region and belly are smaller than elsewhere. Scales all thin, broadly exposed, with entire margins and without corrugations of any kind. No scales on fins (caudal damaged and therefore not determined). Lateral line continuous, a little superior at first or till after tip of pectoral, then midway along side of trunk to middle of base of caudal, and composed of long and rather well exposed tubes.

Dorsal long, its insertion well behind that of anal or near first third



in entire length of fish, and first rays graduated up, after which they are all more or less equal, or only last 1 or 2 graduated down a little shorter. Anal inserted about last  $\frac{2}{3}$  in space between origins of ventral and dorsal. Caudal (damaged) probably slightly convex? Pectoral (damaged) reaching a little beyond origin of dorsal, upper median rays evidently longest, margin of fin rounded and bases of lower rays extending well forward towards base of ventral. Ventral inserted at last fourth in length of head, and reaching a trifle beyond origin of anal. Vent close in front of anal.

Color in alcohol of dry example faded pale brownish more or less generally. Back a trifle darker in tint than lower surface, and over upper surface of head and predorsal region especially sprinkled with small deeper or darker brownish specks or dots. Lower surface of head and belly at least immaculate. Fins all dull brownish. Iris pale yellowish-brown.

Length (without damaged caudal) about  $3\frac{1}{16}$  inches.

Type, No. 33,127, A. N. S. P. Victoria.

Only the above example.

(*Πλατύς*, broad; *κεφαλή*, head.)

#### CALLIONYMIDÆ.

*Callionymus papilio* Günther.

Two examples.

#### URANOSCOPIDÆ.

*Kathetostoma læve* (Schneider).

A head is most likely this species.

#### BLENNIIDÆ.

*Cristiceps australis* Valenciennes.

One example.

*Blennius victoriæ* sp. nov. Fig. 10.

Head  $3\frac{1}{2}$ ; depth about 4; D. XV, 16; A. II, 19; P. 14; V. 2; width of head  $1\frac{3}{5}$  in its length; depth of head  $1\frac{1}{5}$ ; snout nearly 3; eye 4; maxillary  $2\frac{3}{5}$ ; interorbital space  $1\frac{3}{4}$ ; first dorsal spine  $2\frac{1}{5}$ ; eighth dorsal ray  $2\frac{1}{4}$ ; first anal ray about 4; eighteenth anal ray  $2\frac{2}{3}$ ; least depth of caudal peduncle  $3\frac{1}{5}$ ; caudal  $1\frac{2}{5}$ ; ninth pectoral ray  $1\frac{1}{5}$ ; length of ventral  $1\frac{3}{4}$ .

Body elongate, well compressed, so that towards edges of back or dorsal, and lower surface of trunk posterior to vent or towards anals, it is decidedly convergent. Anterior upper profile slightly elevated convexly, so that greatest depth falls at this point. Caudal peduncle



compressed, and its length as measured to base of last dorsal ray  $\frac{4}{5}$  its least depth.

Head large, deep, or with greatest depth of entire body falling at origin of ventral, and upper profile at first very steeply inclined up from tip of snout till above front of eye, and then slightly inclined to origin of dorsal. Snout rather broadly convex over surface, so that its width is a little greater than its length. Eye large, circular, close to upper profile, and placed about first third in head. Mouth large, low, with gape reaching about opposite middle of eye. Lips broad, upper more so than lower. Teeth uniserial, slender, pointed, close-set, equal, and each jaw, both above and below posteriorly, with an enlarged canine slightly recurved posteriorly. Maxillary more or less con-

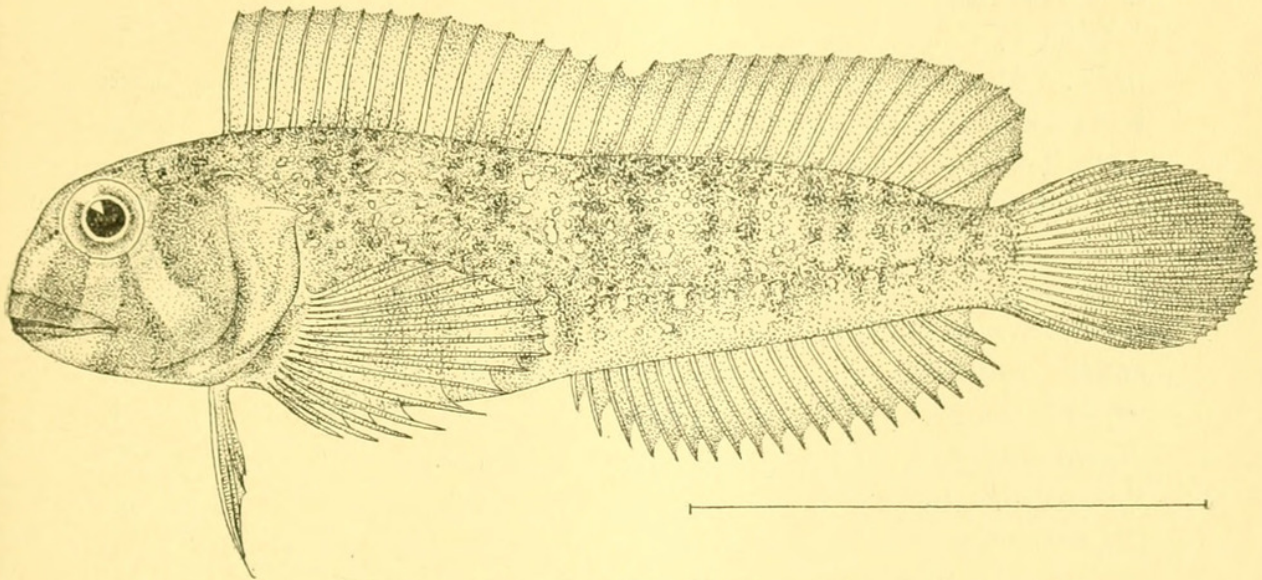


Fig. 10.—*Blennius victoriae* Fowler. (Type.)

cealed posteriorly. Preorbital moderately broad, its least width about  $1\frac{1}{2}$  in eye. Nostrils small, close together near middle of front rim of eye, and of about equal size. Interorbital space narrow, its width about  $2\frac{3}{4}$  in eye, and very slightly concave. Median line of cranium slightly trenchant, or with a slight keel.

Gill-opening large, lateral, and with membrane as a fold over broad isthmus, this point about midway in length of head.

Skin naked and apparently smooth. Lateral line of simple tubes, superior at first or for about first  $\frac{4}{9}$  in length of trunk, then sloping down till about lower  $\frac{2}{3}$  in depth of trunk at that point. About 20 tubes, each opening in a pore, in anterior curved portion of lateral line, and about 9 tubes continued back in a straight series anteriorly.

Origin of spinous dorsal nearly midway between origin of pectoral



and posterior margin of eye, spines all more or less subequal with flexible tips, and edge of fin emarginate. Origin of rayed dorsal a little nearer that of spinous fin than base of last dorsal ray, rays a little higher than spines, edge entire, and fins continuous with spinous portion. Anal preceded by 2 spines scarcely distinguishable from rays, second a little longer than first, and origin of latter about opposite origin of rayed dorsal. Anal rays rather shorter anteriorly or with longest posteriorly, and margin of fin notched. Caudal with median rays longest, and fin rounded. Pectoral broad, lower rays with free tips and median rays longest, and reaching vent. Ventral jugular, falling about opposite last  $\frac{2}{7}$  in length of head, with a long slender spine flexible at tip reaching about  $1\frac{3}{4}$  to origin of spinous anal. Ventral rays large, long and thick. Vent close in front of anal.

Color in alcohol rather dark brown generally, lower surface scarcely paler. About 7 pairs of broad deep brown or dusky vertical bars from dorsal profile, and somewhat reflected on bases of dorsals. Each dark bar is really a double vertical series of several blackish spots, and below lateral line they become obsolete. On side of trunk between dark vertical bars are very pale small yellowish to grayish spots, these obscure and rather irregular. In pale areas on lower side of abdomen several pairs of broad short dusky vertical bars, interspaces noticeably pale. Above base of anal they are short with whitish spots or blotches distributed usually alternately to dark dorsal markings. Fins all faded more or less pale brownish. Iris dull slaty-brown, pupil brown.

Length about  $2\frac{1}{4}$  inches.

Type, No. 33,128, A. N. S. P. Victoria.

Also 2 other examples with same data. They agree in most characters and have the whitish lateral markings distinct.

This species seems to be related to *Blennius tasmanianus* Richardson, but has more dorsal spines, and has no orbital or nasal tentacles. *B. tasmanianus* is also different in color, as it is said to be brownish-gray dotted with brown and the head and vertical fins blackish.

(Named for Victoria in southeastern Australia.)

#### GOBIESOCIDÆ.

*Diplocrepis costatus* Ogilby.

One example.





Fowler, Henry W. 1908. "A collection of fishes from Victoria, Australia."  
*Proceedings of the Academy of Natural Sciences of Philadelphia* 59, 419–444.

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