Observations on Some Tasmanian Fishes.

Part IV

By

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The present paper, the precise scope of which is summarized in the concluding paragraph, follows the general plan of previous communications under the same title (1934, 1935b, 1936).

Keys are provided for the families containing the Tasmanian species dealt with in the present paper. It is hoped that these keys may also help in the identification of species hitherto not recorded from Tasmania.

Registration numbers are those of the Queen Victoria Museum, Launceston.

Family SYNGNATHIDAE

In the Australian Check-List (McCulloch, 1929) only seven members of the family, representing six genera, are accredited to Tasmania, namely: (*a*) *Leptonotus semistriatus* Kaup, 1856; (*b*) *Histiogamphelus briggsii* McCulloch, 1914; (*c*) *Stigmatopora argus* (Richardson, 1840); (*d*) *S.nigra* Kaup, 1856; (*e*) *Solegnathus spinosissimus* (Günther, 1870); (*f*) *Phyllopteryx foliatus* (Shaw, 1804); (*g*) *Hippocampus (Macleayina) abdominalis* Lesson, 1827: in the case of (*b*), (*c*), (*d*) Tasmania affords the type-locality. To these may be added the following species: (*h*) *Corythoichthys phillipi* (Lucas, 1891); (*i*) *Urocampus carinirostris* Castelnau, 1872; (*j*) *Leptoichthys fistularius* Kaup, 1853; (*k*) *Solegnathus fasciatus* (Günther, 1880); (*l*) *S.robustus* McCulloch, 1911; (*m*) *Hippocampus breviceps* Peters: of these (*h*), (*j*), (*k*), (*l*), (*m*) are discussed in the present series of papers; (*i*) is recorded by Lord and Scott (1924).

A key to the Tasmanian Syngnathidae, and to most of the species recorded from Victoria and South Australia, (1) is appended.

(1) Species recorded from Victoria not incorporated in key are *Hippocampus tristis* Castelnau, 1872, *H.bleekeri* Fowler, 1908, *H.agnesae* Fowler, 1908; from South Australia, *Syngnathus pelagicus* Linné, 1758.

KEY TO SYNGNATHIDAE RECORDED FROM TASMANIA: WITH SOME DIAGNOSTIC CHARACTERS [IN SQUARE BRACKETS] OF ALLIED SPECIES OCCURRING IN VICTORIA AND SOUTH AUSTRALIA.

1. Caudal fin present (sometimes rudimentary). Tail not prehensile .... (2)
Caudal fin absent. Tail often prehensile .... (14)

2. Body smooth, without ridges, the angles scarcely defined. Dorsal fin short, borne on 3 annuli; its base = its height. Tail > 4.0 trunk
[D. 11. Annuli 12 + 60; subdorsal 1 + 2. Snout 3.1 in head. Eye 2.0 in snout. Head 2.5 in trunk. Trunk 4.8 in tail. Length 100mm. .... *Lissocampus caudalis*]
Body with longitudinal ridges, the angles well-defined. Dorsal fin long, or moderately long, borne on more than 4 annuli: its base > its height. Tail < 4.0 trunk .... (3)

3. Dorsal edges of trunk and tail not continuous .... (4)
Dorsal edges of trunk and tail continuous
[D. 26-27. Annuli 19-20 + 40-41; subdorsal 1-2 + 5. Snout with elevated obtuse crest; 4.7 in head. Eye 1.3 in snout. Head 3.6-4.4 in trunk. Length 215mm. .... *Ichthyocampus cristatus*]

4. Dorsal fin far (> length of its base) behind vent
D. 14. Annuli 8-9 + 43-53; subdorsal 7-10 of caudal. Snout 3.0-3.3 in head. Eye 1.3 in snout. Head 1.5-2.5 in trunk. Length 110mm. .... *Urocampus carinirostris*
Dorsal fin over, or near (< length of its base from), vent .... (5)

5. Caudal annuli > 30. Length of caudal fin < distance from anterior border of eye to opercular margin .... (6)
Caudal annuli < 30. Length of caudal fin > (about 2) distance from anterior border of eye to opercular margin
D. 34-38. Annuli 25-28 + 20-27; subdorsal 3-4 + 5-6. Snout 1.4 in head. Eye 7.1 in snout. Head 2.0-2.5 in trunk. Length 360mm. .... *Leptoichthys fistularius*

6. Dorsal crest on snout a conspicuous knife-like ridge, at least ½ as high as tubular portion of snout. Base of dorsal fin elevated above general dorsal profile. Tasmanian species with vent posterior to middle of dorsal fin .... (7)
Dorsal crest on snout small, < ½ as high as tubular portion of snout. Base of dorsal fin not elevated above general dorsal profile. Tasmanian species with vent anterior to middle of dorsal fin .... (8)

7. Vent posterior to middle of dorsal fin. Total annuli < 63. Dorsal fin with 28 rays. Snout subequal to rest of head
D. 23. Annuli 22 + 36; subdorsal 5 + 2. Snout 2.1 in head. Eye 2.5 in snout. Head 4.6 in trunk. Length 235mm. *Histiogamphelus briggsii*
Vent anterior to middle of dorsal fin. Total annuli > 63. Dorsal fin with > 28 rays. Snout about 2 rest of head
[D. 32-33. Annuli 25-26 + 44; subdorsal 3 + 7. Snout 1.5 in head. Eye 7.4 in snout. Head 1.9 in trunk. Length 280mm. .... *Histiogamphelus rostratus*]

8. Female with dorsal surface conspicuously elevated, ventral surface acute. Tasmanian species with > 30 dorsal rays .... (9)
Female more or less like male. Tasmanian species with < 30 dorsal rays .... (11)

9. No ridge on opercle. Dorsal fin with > 35 rays. Snout > ½ head
D. 38-40. Annuli 20-21 + 47-49; subdorsal 4-5 + 6-7. Snout 1.6-1.7 in head. Eye 7.2 in snout. Head 1.9 in trunk. Length 235mm. ..... *Leptonotus semistriatus*

Ridge on basal half of opercle. Dorsal fin with < 35 rays. Snout < ½ head ..... (10)

10. Vent anterior to middle of dorsal fin. Trunk ½ total length. Subdorsal annuli < 7
[D. 24. Annuli 17 + 42-44; subdorsal 1 + 5. Snout 2.3 in head. Head 4.0-4.5 in trunk. Length 100mm. ..... *Leptonotus carditae*]

Vent posterior to middle of dorsal fin. Trunk < ½ total length. Subdorsal annuli > 7
[D. 28-32. Annuli 16-17 + 37-38; subdorsal 5-6 + 3-4. Snout 2.6 in head. Eye 2.5 in snout. Head 2.5 in trunk. Length 120mm. ..... *Leptonotus costatus*]

11. Opercle with raised radiating lines, but no median keel. Head > 2.75 in trunk
[D. 20-24. Annuli 18-19 + 42-44; subdorsal 0-1 + 4-5. Snout high. Ventral surface wider than dorsal surface. Snout 2.5-2.7 in head. Eye 1.8 in snout. Head 3.0-3.5 in trunk. Length 160mm. ..... *Syngnathus curtirostris*]

Opercle with prominent median keel. Head < 2.75 in trunk ..... (12)

12. Snout > 2.3 in head; the latter > 2.3 in trunk. Eye larger; < 6.5 in head, < 3.0 in snout. Upper body ridge continued on to 4th caudal scute
[D. 18-20. Annuli 16-17 + 41-43; subdorsal 0-1 + 4-5. Snout 2.5 in head. Eye 2.5 in snout. Head 2.5 in trunk. Ventral surface of trunk V-shaped and ridged. Length 100mm. *Corythroichthys verco*]

Snout < 2.3 in head; the latter < 2.3 in trunk. Eye smaller; > 6.5 in head, > 3.0 in snout. Upper body ridge continued beyond 4th caudal scute ..... (13)

13. Head > 1.7 in trunk. Eye < 4.0 in snout. Upper body-ridge continued on to 5th caudal scute
D. 22-28. Annuli 18-20 + 40-48; subdorsal 1-2 + 5-6. Snout 1.9 in head. Eye 3.4 in snout. Head 2.0 in trunk. Length 130mm. ..... *Corythroichthys phillipi*

Head < 1.7 in trunk. Eye > 4.0 in snout. Upper body-ridge continued on to 6th caudal scute
[D. 26-29. Annuli 19-20 + 44-49; subdorsal 1-2 + 5-6. Snout 1.75 in head. Eye 4.5 in snout. Head 1.4 in trunk. Length 270mm. ..... *Corythroichthys poecilolaemus*]

14. Head, trunk and tail with conspicuous foliaceous appendages. Tail prehensile ..... (15)

Without such conspicuous foliaceous appendages. Tail prehensile or not prehensile ..... (16)

15. Foliaceous appendages simple. Ventral segmental spines short (one eye-diameter, or less). Snout > 3 postorbital portion of head. Subdorsal annuli > 10
D. 27-36. Annuli 17-18 + 32-37; subdorsal 1-2 + 5-7. Snout 1.4 in head. Eye 7.1 in snout. Head 1.3-1.5 in trunk. Length 390mm ..... *Phyllopteryx foliatus*

Foliaceous appendages multifid. Ventral segmental spines long (up to two eye-diameters, or more). Snout < 3 postorbital portion of head. Subdorsal annuli < 10
[D. 35-37. Annuli 18-19 + 36-40; subdorsal 0-1 + 11. Snout 1.6-1.7 in head. Eye 4.8-5.1 in snout. Head 1.3 in trunk. Length 300mm. ..... *Phyllopteryx eques*]

16.
Trunk broader than deep. Length from eye to origin of dorsal fin < base of dorsal fin. Body-annuli > 15, < 23. Subdorsal annuli > 14. Tail not prehensile ..... (17)
Trunk deeper than broad. Length from eye to origin of dorsal fin > base of dorsal fin. Body-annuli < 15, or > 23. Subdorsal annuli < 14. Tail prehensile ..... (18)

17.
Vent posterior to middle of dorsal fin. Mediolateral body-ridge extending on to 1st caudal scute (in the greatly expanded female produced to form a sharp edge). Well-developed opercular keel
D. 35-43. Annuli 16-18 + 58-72; subdorsal 10-12 + 6-7. Snout 1.6-1.7 in head. Eye 5.0-6.3 in snout. Head 1.6 in trunk. Length 110mm. ..... *Stigmatopora nigra*
Vent below, or anterior to, middle of dorsal fin. Mediolateral body-ridge extending on to about 6th caudal scute, or beyond, or terminating in skinny folds of brood-pouch. No opercular keel in adult
D. 43-55. Annuli 17-22 + 68-90; subdorsal 7-10 + 8-12. Snout 1.5 in head. Eye 6.2-7.6 in snout. Head 1.3 in trunk. Length 250mm. ..... *Stigmatopora argus*

18.
Head not noticeably equine, its depth < (about $\frac{1}{2}$) length of snout. Body-annuli > 15. Total annuli > 65 ..... (19)
Head decidedly equine, its depth > length of snout. Body-annuli < 15. Total annuli < 65 ..... (21)

19.
Trunk about 2.0 head. Depth of snout 6, or more, in its length. Depth of tail immediately behind the dorsal fin, 4, or more, in base of dorsal. Mediolateral ridge attains, or virtually attains, dorsal profile immediately behind termination of dorsal fin ..... (20)
Trunk about 2.5 head. Depth of snout 5 in its length. Depth of tail immediately hehind the dorsal fin ahout 3 in base of dorsal. Mediolateral ridge attains dorsal profile near, or behind, middle of tail
D. 29-34. Annuli 26-27 + 48-53; subdorsal 0 + 10. Eye 3.9 in snout. Snout 1.7-1.9 in head. Head 2.4-2.7 in trunk. Each trunk-scute with flattened central spine, from which radiate lines of smaller, but well-developed, spines. Length 365mm. ..... *Solegnathus robustus*

20.
Scutes intensely spiny. At middle of either lateral border of each trunk-scute a four- or five-rayed cluster of spines, diverging from an enlarged central spine or small group of spines
D. 35-38. Annuli 27-29 + 51-55; subdorsal 0 + 10. Eye 4.0-5.0 in snout. Snout 1.7 in head. Head 2.0 in trunk. Each trunk-scute with a system of spinigerous ridges in the form of a lozenge, or ellipse, and a vertical ridge running from apex to apex; vertical ridge terminating in a large two- or three-crowned spine forming part of longitudinal body-ridge. Length 320mm. ..... *Solegnathus spinosissimus*
Scutes mainly rugose. At middle of either lateral border of each trunk-scute a spinigerous fusiform fascia, with an enlarged central spine, or an elliptical boss with elevated centre from which radiate numerous rows of blunt spinules
D. 39-41. Annuli 25-28 + 53-55; subdorsal 0 + 10-12. Eye 4.0-5.0 in snout. Snout 1.7 in head. Head 2.0 in trunk. Each trunk-scute with a system of from about three to six subvertical rather sparsely, often obscurely, spinigerous ridges that through most of their length are subparallel, generally becoming approximated above and below, where they terminate in a large two- or three-crowned spine forming part of longitudinal body-ridge. Length 370mm. ..... *Solegnathus fasciatus*

21. Axis of head virtually in line with that of trunk, the angle included between ventral cephalic and thoracic profiles much > 90°. Dorsal and ventral profiles of trunk subparallel. Tail without prominent tubercles. Occiput compressed into a crest, without coronet
[D. 15. Annuli 12 + 38; subdorsal 3 + 1. Eye 1.5-1.8 in snout. Snout 2.9-3.2 in head. Head 2.0 in trunk. Length 55mm. .... *Acentronura australis*]

Axis of head markedly oblique to that of trunk, the angle included between ventral cephalic and thoracic profiles (usually much) < 90°. Dorsal and ventral profiles of trunk convex in opposite senses. Tail with prominent tubercles. Occiput compressed into a crest, produced behind to form coronet .... (22)

22. Dorsal rays > 24. Dorsal base on 6, or more, annuli, of which 3, or more, are caudal. Total annuli > 54
D. 26-31. Annuli 11-13 + 44-49; subdorsal 3-5 + 3-5. Eye 2.5 in snout. Snout 2.5 in head. Head 1.7 in trunk. Length 260mm. .... *Hippocampus abdominalis*

Dorsal rays < 24. Dorsal base on fewer than 6 annuli, of which fewer than 3 are caudal. Total annuli < 54 .... (23)

23. Dorsal rays > 18. Snout > 2.5 in head. Eye < 3 in snout. Minimum nuchal depth < half maximum depth of trunk. Total annuli > 48
D. 19-22. Annuli 11 + 38-42; subdorsal 3-4 + 1. Eye 2.1 in snout. Snout 3.0 in head. Head 1.5 in trunk. Length 70mm. .... *Hippocampus breviceps*

Dorsal rays < 18. Snout < 2.5 in head. Eye > 3 in snout. Minimum nuchal depth > half maximum depth of trunk. Total annuli < 48
[D. 16-17. Annuli 11 + 33-36; subdorsal 2-3 + 1. Eye 3.5 in snout. Snout 2.0 in head. Head 1.2 in trunk. Length 160mm. .... *Hippocampus novae-hollandiae*]

Genus **Corythoichthys** Kaup, 1853

Corythoichthys phillipi (Lucas, 1891)

Syngnathus phillipi Lucas, *Proc. Roy. Soc. Vict.* (n.s.) III. 1891. pp. 8 and 12.

Distribution.—To distribution in Check-List (Victoria, South Australia) may be added Western Australia (Waite and Hale, 1921), Tasmania (McCulloch, 1911).

Genus **Leptoichthys** Kaup, 1853

Leptoichthys fistularius Kaup, 1853

Leptoichthys fistularius Kaup, *Arch. Naturg.* XIX. 1. 1853. p. 233; *ex Typhus fistularius* Bibron MS.

Record.—Specimen (Reg. No. 916FR) picked up on beach at Bridport by Miss Betty von Steiglitz, January, 1936. First record for Tasmania.

Remarks.—Although somewhat abraded, and having the greater part of the snout and the tip of the caudal fin missing, the specimen is clearly referable to this species. In its present condition the fish has a total length of 270 mm., to which perhaps 50 mm. would have been added when it was perfect. Annuli 25 + 20, of which 3 + 6 are subdorsal.

Distribution.—To distribution in Check-List (Western Australia, South Australia) may be added Victoria (Waite and Hale, 1921; Mack, 1934), Tasmania.

Genus **Leptonotus** Kaup, 1853

Leptonotus semistriatus Kaup, 1856

(Text fig. 1)

Leptonotus semistriatus Kaup, *Arch. Naturges.* XIX. 1. 1853. p. 233: *nom. nud.*
Id. Kaup, *Cat. Lophob. Fish. Brit. Mus.* 1856. p. 48.

Syngnathus semifasciatus Günther, *Cat. Fish. Brit. Mus.* VIII. 1870. p. 162: *emend. pro Leptonotus semistriatus* Kaup.

Syngnathus verreauxianus Duméril, *Hist. Nat. Poiss.* II. 1870 p. 573.

Distribution.—To distribution in Check-List (South Australia, Tasmania) may be added Victoria (Mack, 1934). Waite and Hale (1921) exclude this species from the South Australian list, interpreting 'South Australia'—which Günther (1870) stated was written on label of holotype, though Kaup (1856) had stated its origin was not noted—as 'Southern Australia,' and stating they have no records of it from South Australia, where, they believe, its place is taken by *L. costatus* Waite and Hale.

Remarks.—Australian literature available here does not include any recent descriptive account of this species, and no illustration appears to have been published: a redescription and figure, based on a Victorian specimen, are offered below.

Description.—D.38. P.11. C.5. A.5. Annuli 20 + 47; subdorsal annuli 4 + 7.

Head 2.8 in length to vent, 6.4 in length to base of caudal, 6.5 in total length. Eye 6.0 in snout, which is 1.6 in head. Base of dorsal 3.7 in length to its origin. Maximum depth 18.0, depth at opercular margin 33.2, at origin of dorsal 22.7, at vent 32.2, at middle of tail 72.0, in total length.

Smooth, without spines. Head and body compressed, maximum width of latter 2.4 in maximum depth. Tail subquadrangular, its width at vent 1.3 in its depth there, its width at middle 1.1 in its depth there. Seven trunk-ridges, including median ventral keel; all rather small, but well defined: dorsal surface of trunk unridged, gently arched. Superolateral trunk ridge continued to near middle of sixth caudal scute; mediolateral ending in hinder third of last body-scute; posterolateral continuous with that of tail; ventral ending just in advance of vent: superolateral ridge of tail originating near anterior margin of last body-scute, attaining dorsal profile about 11 annuli in advance of origin of caudal.

Snout long and slender, rather more than twice postorbital portion of head; nostril about two-thirds an eye-diameter in advance of orbit. Interorbital space nearly flat, bounded by feeble supraorbital ridges,

which converge anteriorly and meet at about level of nostril, and thence proceed forward as an obsolescent median ridge on snout. Superolateral ridge of snout diverging posteriorly, at about an eye-diameter in front of orbit, to enclose subtriangular depression, in which nostril lies; inferolateral extending to about level of hinder orbital margin; medioventral feebly developed near level of eye, in advance of which it rapidly tends to become obsolete. Minute ridge on occiput and nape. Operculum without ridge, but with radiating striae.

Dorsal fin barely encroaching on third annulus in advance of that bearing vent, terminating on anterior half of seventh caudal annulus; base subequal to combined eye and snout; height subequal to eye. Length of pectoral 1.5 times width of its base, or about half postorbital of head. Anal minute. Caudal rounded, its length 5.1 in snout.

Head minutely punctulate, and vermiculately ridged and channelled. Body-scutes with pattern of delicate ridges (not shown in figure). (1) Median row of scutes each with lyrate pattern in lower four-fifths, junctioning with fan of ridges in upper fifth: upper row with fan in lower two-thirds, and less developed fan in upper third: other rows with pattern resembling karyokinetic spindle.

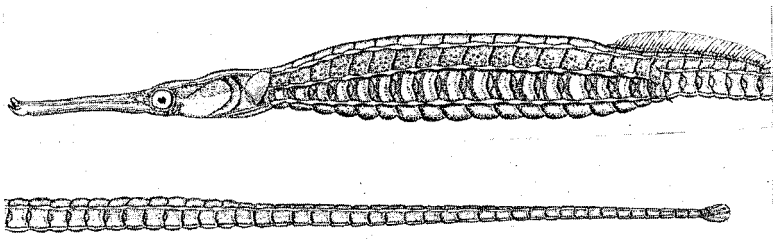

Fig. 1.—*Leptonotus semistriatus* Kaup. Total length 216 mm.
(For convenience in reproduction, this figure has been cut in two. The upper figure shows the anterior half of the fish, and the lower figure shows the posterior half.)

General colour in alcohol greyish yellow, becoming somewhat lighter below; brownish band extending from near middle of snout, across upper half of operculum and along upper lateral row of body-scutes; whitish stripe from eye, across opercle, to base of pectoral; brownish mid-dorsal stripe from about level of nostril to origin of dorsal; upper half of tail darker than lower; scattered whitish ocelli on upper lateral row of body-scutes.

Described and figured (text fig. 1) from a Victorian specimen, 216 mm. in total length, in the collection of the National Museum, Melbourne.

Comparison with Holotype.—Original description is short; but notes six dimensions. Kaup's measurements yield head 6.4, depth 14.0, tail 1.8 in total length; snout 1.7 in head; width of body 3.4 in its

(1) Remarking, regarding this pattern, 'The bands are transverse, (*fasciae*), and not longitudinal (*striae*)', Günther (1870), p. 162, footnote) suggested the emendation of Kaup's specific name *semifasciatus* to *semistriatus*.

depth: these proportions agree well with those noted above, but present specimen has noticeably wider body. One ray fewer in pectoral of present specimen is negligible; but I find only 5 caudal rays, as against 10 noted for holotype. Total annuli agree; but holotype has one fewer trunk, and one more caudal, annulus. The difference in number of subdorsal annuli on trunk is probably a question of mode of counting: formula given above includes the annulus on to which dorsal base barely encroaches; Kaup quite probably adopted the legitimate convention that this minor extension cephalad should be discounted.

Family ARRIPIDAE

Of the two Australian members of the family—*Arripis georgianus* (Cuvier and Valenciennes, 1831), *A. trutta* (Bloch and Schneider, 1801)—the latter only has hitherto been recorded from Tasmania: the former is here noted for the first time from our waters.

KEY TO ARRIPIDAE RECORDED FROM TASMANIA

D. IX, 14.—Body decidedly rough (1); its depth > length of head. Two well-developed opercular spines. Basal portion of scale with fine striations parallel with anterior border, but no longitudinal ridges.(2) Without brassy trout-like spots on side ..... *A. georgianus.*

D. IX, 15-17 (usually 16). Body virtually smooth; its depth < length of head. Opercular spines obsolescent. Basal portion of scale with fine striations parallel with anterior border, and with several longitudinal ridges. Specimens up to about 10 inches, or more, in total length with several rows of conspicuous brassy trout-like spots on side ..... *A. trutta.*

Genus **ARRIPIS** Jenyns, 1840

Arripis georgianus (Cuvier and Valenciennes, 1831)

Centropristis georgianus Cuvier and Valenciennes, *Hist. Nat. Poiss.* VII. 1831. p. 451.

Arripis georgianus Jenyns, *Zool. Voy. Beagle, Fish.* 1840. p. 14.

Record.—Specimen (Reg. No. 917FR) of total length 251 mm., standard length 196 mm., caught near George Town by Mr. C. Andrews on 18th March, 1937; forwarded to the Museum by Mr. G. R. F. Green. I am informed by Mr. Green that about ten days before half a dozen specimens were included among a consignment sent to the Launceston Fish Market from the Islands Straits. First record for Tasmania.

(1) Hence the vernacular name of *Roughy*, or *Tommy Rough*: also called *Wankaldi*.

(2) Name of genus based on absence in genotype of the customary fan-system of ridges on basal portion of scale. In *A. trutta*, however, there is a suggestion of the fan in the shape of three or four subparallel ridges.

Remarks.—From a consideration of the known habits and geographical range of the genotype, I have long thought it probable the present species visits, upon occasion, the northern waters of Tasmania: it is now some years since I first requested various observers to keep a sharp lookout for this species, and it is an interesting and pleasing circumstance that Mr. Andrew's keenness has resulted in its addition to the Tasmanian list.

Arripis trutta (Bloch and Schneider, 1801)

Sciena trutta Bloch and Schneider, *Syst. Ichth.* 1801. p. 542: *ex* Forster MS.

Arripis trutta McCulloch, *Mem. Aust. Mus. Sydney.* V. II. 1929. p. 200 (references and synonymy).

Remarks.—Known from New Zealand, Lord Howe Island, Norfolk and Raoul Islands, and from all the Australian States, first record for Queensland being noted recently by Whitley (1937, p. 135).

One of the commonest fishes in Launceston shops: great majority of individuals 200-300 mm. in total length; but examples reaching a length of about 500 mm. are not rare.

Vernacular names, as given in the books, include; Salmon; Salmon Arripis (McCoy, 1878); Australian, Native, or Colonial Salmon; Sydney Salmon (Stead, 1906); Kahawai (Phillipps, 1927); Salmon Trout (young); Newfish (young) (Stead, 1906). In Launceston fish-shops this species is usually sold under the name of Salmon, Blackback Salmon, Cocky Salmon (*Cocky*, an Australian farmer), Cock-Eye or Cock-Eyed Salmon (presumably a corruption resulting from misapprehension of preceding name), or Salmon Trout (young).

It is of interest to note that in July, 1934, there was received at the Museum a specimen of *Squilla sp.*, 110 mm. long, taken intact from the stomach of a specimen of *Arripis trutta* caught near George Town, Northern Tasmania.

Family BLENNIIDAE, *sensu lato*

Like many of our small fishes the Tasmanian Blennies are much in need of revision: while it is at present impracticable to solve all problems presented by the group, it is hoped the present observations may at least to some extent clear the ground for future progress.

The members of the family Blenniidae, *sensu lato*, including those forms segregated by many modern authors as belonging to the family Clinidae, accredited to Tasmania in the Australian Check-List (McCulloch, 1929) number seven species: (*a*) *Blennius tasmanianus* Richardson, 1839; (*b*) *Gillias clarkei* (Morton, 1888); (*c*) *Clinus perspicillatus* Cuvier and Valenciennes, 1836; (*d*) *Clinus johnstoni* Saville Kent, 1886; (*e*) *Petraites incertus* McCulloch, 1915; (*f*) *Cristiceps australis* Cuvier and Valenciennes, 1836; (*g*) *Cristiceps forsteri* Castelnau, 1872. One other species described from Tasmania,

Clinus despicillatus Richardson, 1839 (type-locality Port Arthur, Southern Tasmania), has long been regarded as an undoubted synonym of *C. perspicillatus*, and calls for no further comment here.

Modifications of this list adopted here comprise (*a*) addition of *Orphiclinus greeni* Scott, 1936 (described since publication of Check-List); (*b*) addition of *Gillias macleayanus* (Lucas, 1891) (first Tasmanian record—with redescription and figure—below); (*c*) restoration of *Gillias clarkei* (Morton) to the genus, *Tripterygion*, in which it was placed by its author; (*d*) relegation of *Petraites incertus* McCulloch to the synonymy of *P. forsteri* (Castelnau).

Notes are given on specimens of *Ophiclinus greeni* from a new locality, and on the appearance in early local lists of *Salarias maleagris* Cuvier and Valenciennes, 1836.

Key to Blenniidae and Clinidae Recorded from Tasmania

1. Much elongated; depth > 6 in length to hypural. Pectoral fin extending halfway, or less, towards vent. One continuous dorsal fin .... (2)
   Less elongated; depth < 6 in length to hypural. Pectoral fin extending more than halfway towards (sometimes beoynd) vent. Two or three more or less distinct dorsal fins, which may be connected or separate .... (3)

2. One continuous dorsal fin, consisting almost entirely of spines; approximately of even height throughout. Body with small, imbedded, non-imbricating scales. Pectoral fin larger than eye .... *Ophiclinus*
   D. XLVIII-XLIX, 1. A. III, 31-32. Total length about 70mm. .... *O. greeni*

3. Two dorsal fins; first consisting of spines, second either wholly of soft rays, or chiefly of spines with a few soft rays. Body naked, or with small, more or less imbedded, non-imbricating scales .... (4)
   Three distinct dorsal fins; first and second consisting of spines, third of soft rays. Body with well-developed, normal, imbricating scales .... (8)

4. Body naked. The two dorsal fins closely connected by membrane, point of junction being indicated by notch in external margin of fins. First dorsal with about 12 spines. Second dorsal with about 18 soft rays; its base < 2 base of first dorsal. In lower (and upper) jaw a single posterior curved canine on each side; rest of teeth long, slender, in contact with each other throughout most of their length, forming a palisade-like row .... *Blennius*
   D. XII, 17-19. A. II, 18-20. Total length about 110mm. .... *B. tasmanianus*
   Body with rudimentary or small, non-imbricating scales. The two dorsal fins partly connected by membrane, or separate. First dorsal with 3, rarely 2, spines. Second dorsal with about 25-35 spines, followed by about 2-8 soft rays; its base > 4 base of first dorsal. In each ramus of lower jaw a symphysial patch of villiform or cardiform teeth, followed laterally by larger, well-separated teeth in one or more rows .... (5)

5. First dorsal spine placed over, or in front of, eye ... ... *Cristiceps*
First dorsal spine placed rather behind middle of eye; about twice third spine. First and second dorsal fins sometimes connected by membrane, sometimes separate. Soft rays of second dorsal equidistant. D. III, XXVI-XXIX ; 6-8. A. II, 24-26. Total length about 100mm. ... ... *C. australis*
First dorsal spine placed behind eye ... ... (6)

6. Last (third or second) spine of first dorsal connected by membrane to middle, or upper half, of first spine of second dorsal ... *Clinus* (7)
Last (third) spine of first dorsal connected by membrane to basal portion only of first spine of second dorsal ... ... *Petraites*
First dorsal spine placed less than one eye-diameter behind orbit; about twice third spine. Maxillary extending to level of posterior orbital margin. Snout about 1.5 eye. D. III, XXIX ; 4-5. A. II, 23-24. Total length about 250mm. ... ... *P. forsteri*

7. First dorsal spine placed less than one eye-diameter behind eye: subequal to third spine. Maxillary not extending to level of posterior orbital margin. Snout rather shorter than eye. In lower jaw lateral teeth not much larger than anterior teeth of the cardiform symphysial patch. D. III, XXII-XXIV ; 3-5. A. II, 24-26. Total length about 100mm. ... ... *C. perspicillatus*
First dorsal spine placed more than one eye-diameter behind eye; subequal to third spine. Maxillary extending beyond level of posterior orbital margin. Snout rather longer than eye. In lower jaw lateral teeth many times larger than teeth of the villiform symphysial patch. D. II-III, XXXII-XXXIII; 5-6. A. II, 25-26. Total length about 375mm. ... ... *C. johnstoni*

8. Head naked ... ... *Tripterygion*
Scales large ; head scaleless. Lateral line terminating below eighth ray of third dorsal. Teeth villiform; several maxillary caniniform. D. III, XVI, 11. A. 23. Total length about 75mm. ... ... *T. clarkei*
Head partly scaly ... ... *Gillias*
Scales on body (except pectoral base), occiput, preoperculum (part), operculum (part) ; ctenoid, except on breast, where they are cycloid. Lateral line following curve of back to level of fourth (? eighth) ray of third dorsal. Teeth in jaws subequal. D. III, XIV, 10-12. A. 22. Total length about 75mm. ... *G. macleayanus*

Genus **Petraites** Ogilby, 1885

Petraites forsteri (Castelnau, 1881)

Cristiceps forsteri Castelnau, *Proc. Zool. Acclim. Soc. Vict.* i. 1872. p. 132.

Petraites incertus McCulloch, *Proc. Linn. N.S.W.* xl. 2. 1915. p. 275. pl. xxxvii. fig. 3.

Remarks.—Though *Cristiceps forsteri* Castelnau appears under the genus *Cristiceps* Cuvier and Valenciennes, 1836, in the Australian Check-List, it is clearly referable to *Petraites* Ogilby, 1885, as delimited by McCulloch (1908, p. 37).

In concluding some observations on *Petraites incertus* McCulloch, the type locality of which is River Tamar, Tasmania, I quoted (1935*b*, p. 71), and subscribed to, McCulloch's statement regarding the relationship exhibited by specimens of *Petraites incertus* to descriptions of some of the early, imperfectly characterized members of the genus, 'they do not wholly agree with any of the descriptions' (McCulloch, 1915, p. 276). In the course of preparing the key given above, however, I found myself unable to distinguish satisfactorily between *Cristiceps forsteri* Castelnau and *Petraites incertus* McCulloch. The former species is said by Johnston (1883, p. 121) to be common: I have, however, not seen specimens identified as Castelnau's species, and Dr. Joseph Pearson, Director, Tasmanian Museum, Hobart, and Mr. George Mack, Ichthyologist, National Museum, Melbourne, inform me that there are no specimens thus labelled in the collections of their respective institutions. On the other hand, examples clearly determinable as *Petraites incertus* McCulloch appear to be by no means uncommon in Tasmania. I think it likely, therefore, that McCulloch's account of *P. incertus* represents a redescription of Castelnau's species; and, on available evidence, it seems a step forward in our gradual progress towards clarification of the obscurity still largely enveloping our Blennies to sink the former species in the synonymy of the latter.

As *Cristiceps forsteri* the species is known from Victoria and Tasmania: under McCulloch's name it is recorded only from Tasmania, the only accounts of it apparently being the original description and the notes contained in an earlier part of the present series of observation.

Genus **Tripterygion** Risso, 1826

Tripterygion clarkei Morton, 1888

Tripterygium clarkei Morton, *Pap. Roy. Soc. Tasm.* 1887 (1880), p. xlvii and p. 78. *Id.* Hall, *Pap. Roy. Soc. Tasm.* 1912 (1913), p. 82.

Gillias clarkei McCulloch, *Mem. Aust. Mus. Sydney*, V. III. 1929, p. 348. Probably not *Gillias clarkei* Whitley, *Pap. Roy. Soc. Tasm.* 1929 (1930), p. 65: *ex* Johnston MS.

Remarks.—Originally described in the genus *Tripterygium* [= *Tripterygion*] Risso, 1826, this species is referred in the Australian Check-List to *Gillias* Evermann and Marsh, 1900. It should, however, probably not be placed in the latter genus. Thus *Gillias*—*fide* McCulloch (1927), p. 86)—has head scaly, whereas original description of species states 'head scaleless'; again, *Gillias* is noted (Jordan and Evermann, 1900, p. 3186) as having D. III; XI; 7, as against III; XVI; 11 in Morton's species. It is doubtful if our present knowledge of this fish is adequate for a definite generic determination: pending the acquisition of further data, it is here provisionally restored to the genus in which it was placed by its author.

I can find only four references, apart from entries in faunal lists, to this species: (*a*) a note in the journal of this Society that apparently records the exhibition of the holotype at the meeting of 15th August, 1887; (*b*) original description (Morton, 1888, p. 78); (*c*) some observations by Hall (1913, p. 82) on coloration, based on some twenty specimens, 1.5-3 inches long, captured 'among the piers, Hobart, August, 1909'. Hall states later (p. 84) that specimens mentioned in his paper 'will be additions to the Tasmanian Museum,' but Dr. Pearson, who has kindly made a search at my request, informs me this material cannot now be traced; (*d*) Whitley (1929, p. 65) quotes a short description of 'Blenny, *Tripterygium sp.*' from Leven, from Johnston MS, and refers this fish to *Gillias clarkei*. From Johnston's description, however, I very much doubt if his specimen is conspecific with Morton's. It is quite possible the specimen noted in Johnston's MS is that mentioned in the following sentence occuring in the Proceedings for August, 1887: 'Mr. Morton also submitted a new species of the genus *Tripterygium*, a genus hitherto unrecorded in Tasmania, although Mr. Johnston had a specimen, of a different species, but had not described it.' Johnston's memorandum (Whitley, 1929, p. 65) notes D. 21/8, *i.e.*, presumably, III.; XVIII; 8, which seems decidedly different from Morton's D. III.; XVI. 11.

Genus **Gillias** Evermann and Marsh, 1900

Gillias macleayanus (Lucas, 1891)

(Text fig. 2)

Tripterygium macleayanus Lucas, *Proc. Roy. Soc. Vict.* (n.s.). iii. 1890 (1891). p. 9 and p. 12, pl. III. fig. 4.

Gillias macleayanus McCulloch, *Mem. Aust. Mus. Sydney.* V. III. 1929, p. 348.

Record.—Specimen (Reg. No. 918FR) collected in rock pool at mouth of Currie River, Northern Tasmania, by Mr. G. R. F. Green, 30th January, 1936. First record for Tasmania.

Generic Status.—*Tripterygium macleayanus* Lucas is referred in the Australian Check-List (McCulloch, 1929) to the genus *Gillias* Evermann and Marsh, 1900, and this procedure is provisionally followed here. I have not access to the original description of the genus, but perusal of a diagnosis published a few months later by Jordan and Evermann (1900), which Mr. George Mack, Ichthyologist, National Museum, Melbourne, has been good enough to transcribe for me, suggests this attribution is doubtful. In the light of modern developments, including the description by McCulloch and Waite (1918) of several endemic South Australian genera, the generic status of various Australian Blennies at present referred to this genus, to *Tripterygion* Risso, 1826, and to allied genera appears to call for revision, a task for which literature and material available here are unfortunately inadequate. The possibility that this species is a synonym of *T. clarkei* Morton should not be altogether overlooked.

Remarks.—Hitherto known only from Victoria. The fairly short original description and small outline figure, based on a single specimen, 50 mm. long, from the Bracebridge Wilson material of 1888-9, do not seem since to have been supplemented: a redescription and a figure (Text fig. 2) are here offered.

Description.—Br. vi. D. iii; xiv; 10. A. i, 21. P. 12 + 6. V. 2. C. 13 + $\frac{1}{1}$. Depth of body at vent 6.3 in total length, 5.2 in standard length. Head 3.8, length to vent 2.3, in standard length. Interorbital width 4.9 in eye, which is 3.4 in head. Snout 1.4 in eye, 4.6 in head. Depth of caudal peduncle greater than its own length, 3.1 in head.

Head large, subconical, its depth 1.3 in its width; naked, except for small ctenoid scales that extend forward on occiput to level of the orbital tentacle, on to whole width of upper fifth of preoperculum, and on to anterior two-thirds of upper half of operculum. Numerous well-developed pores, including double closely set row below eye, two mesial rows on dorsal surface of snout, fairly widely spaced row fringing preoperculum, about half a dozen below on each ramus of mandible: none on operculum. Anterior nostril tubular, broader than high, equidistant from orbit and upper lip, at 9 o'clock relative

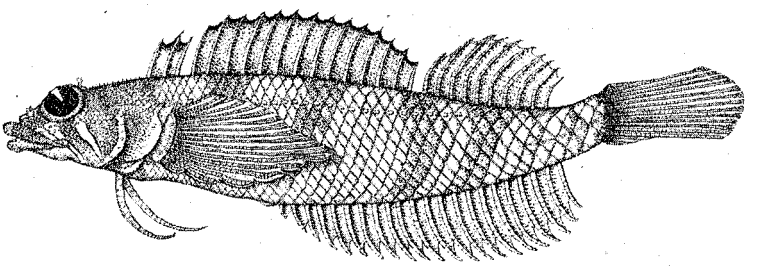

Fig. 2.—*Gillias macleayanus* (Lucas). Total length 53.75mm.

to eye (left aspect); surmounted by divided subtriangular flap. Posterior nostril a simple opening, close to orbit, at about 11 o'clock. Small hand-shaped ocular tentacle at about 1 o'clock. Row of minute fringed papillae above and behind orbit. Eye large, cutting dorsal profile, longer than high, set obliquely, its major axis at about 45° to the horizontal. Interorbital space slightly concave, with median depression, in hinder half; almost flat in anterior half. Lips large and thick, markedly protuberant, upper projecting slightly beyond lower; maxillary reaching to below hinder third of eye. Maxillary teeth uniserial, subconical, subequal; broad villiform vomerine arc; anterior portion of palatines with clustered large mammillary teeth; mandibular teeth in fairly broad cardiform patch near the symphysis, becoming uniserial laterally.

Body stout, its width at shoulder subequal to its height there, at origin of third dorsal about half its height there. Except for the pectoral base, wholly covered with scales, which are small and cycloid on breast, large and finely ctenoid on sides: 34 rows of scales from axilla to hypural, beyond which are one or two rows on bases of caudal rays. Counting obliquely backwards from origin of first dorsal, rows of scales number 3/1/8; or, from origin of third dorsal to base of anal, 2/1/5 (1). Lateral line subparallel with dorsal profile, from which it is distant about one-fourth as far as from ventral profile; continued to below fourth ray of third dorsal (25 scales), with indication of extension (specimen damaged) to below eighth ray of third dorsal (29 scales). A slight mediolateral groove, apparently without perforations, extends forward from caudal base to level of about eighth ray of third dorsal.

First dorsal fin originating about midway between levels of preopercular and opercular margins; length to origin 4.2 in standard length; base 3.8 in head, about half combined eye and snout; first, second, third spines respectively 32, 35, 29% of head. Interspace between first and second dorsals 5.0 in snout, slightly less than interorbital width. Second dorsal originating shortly behind level of upper angle of pectoral base; length to origin 3.1 in standard length; base 1.3 times head, subequal to length from anterior margin of eye to vent; first, ninth, (longest), fourteenth spines respectively 35, 45, 20% of head. Second interorbital space subequal to first. Third dorsal with the first five rays very feebly and briefly divided, the sixth, eighth, and tenth, which are the only undamaged rays of the remainder, simple; originating about as far behind vent as vent is behind pelvics, terminating about above penultimate anal ray; length to origin 1.5 in standard length; base 1.3 in head, subequal to depth of body; first, sixth (longest), tenth rays respectively 37, 49, 30% of head; laid back, fails to reach level of base of caudal rays by less than an eye-diameter. Anal with all rays simple, much stouter than those of the third dorsal, the membrane incised to a depth of more than one-third length of the rays; originating below sixth spine of second dorsal; length to origin 2.2 in standard length; base 1.8 times head, subequal to length to origin of the fin; extending behind end of third dorsal by twice interorbital width; spine, first, eleventh, twenty-first (longest), twenty-second rays respectively 12, 21, 43, 46 30% of head; laid back, extends slightly beyond base of caudal rays. Pectoral long, pointed; with upper rays slender, divided in their outer third or half; lower rays, between which membrane is markedly incised, not divided distally, but with the rib appearing as two separate ridges in the proximal two-thirds or four-fifths; originating

(1) The former convention is evidently that adopted in the original description of the present species (Lucas, 1891): the latter permits of comparison with the description of species ascribed to *Tripterygium* by Ramsay and Ogilby (1888a; 1888b).

behind pelvics by about an eye-diameter; length to origin 3.9 in standard length; longest (tenth) ray 1.2 times head; laid back, reaches to below penultimate spine of second dorsal. Ventral with the stout simple rays separate for nearly their whole length; originating about below preopercular margin, four-fifths of length of snout in advance of dorsal origin; length to origin 5.1 in standard length; outer, more anterior ray 1.3 in inner, more posterior ray, which is 1.2 in head. Caudal with all major rays branched up to nearly half their length, except lower two rays, which are simple, and decidedly stouter than upper two; length of median rays 4.4 in standard length, 1.2 in head.

Genital papilla moderate, longitudinally plicate.

General colour in formalin yellowish-grey, becoming flesh-coloured on the anterior half of the preanal ventral surface. About eight subvertical dark-brown bars, best developed anteriorly; first immediately behind pectoral base, second and third below second dorsal, fourth below interspace between second and third dorsals, fifth and sixth below third dorsal, seventh near middle of caudal peduncle, eighth at base of caudal rays: eight similarly coloured saddles on back, five posterior continuous with the lateral bars, the three anterior ones from third increasingly in advance of corresponding bars. General colour of head dark greyish-brown dorsally and laterally, concolorous ventrally with sides of body. Two conspicuous light-coloured, dark-bordered genal bands, running downwards and backwards from front and rear of lower edge of orbit: a less conspicuous, similarly coloured, band fringing preoperculum, preceded by dark band. Dark patch below eye; broad dark band extending forward from front of eye across upper lip, the latter elsewhere dark greenish-brown; tip of snout brown, the colour continued back as a narrow stripe to interorbital region. Lower lip concolorous mesially with throat, darker laterally. Eye greyish-blue. Dorsal fins greyish, heavily speckled on membrane and spines, and to lesser degree on rays, with dark brownish; first and second dorsals narrowly fringed with blackish along free margin. Anal greyish, less heavily punctulated than dorsals; tips of rays whitish. Pectoral greyish, the membrane lightly, the rays, especially at base, heavily, punctulated with brownish. Pelvic whitish. Caudal pale greyish, moderately dotted with brownish on membrane, slightly on rays.

Described and figured (Text fig. 2) from a specimen of total length 53.75 mm., standard length 43.75 mm., in the collection of the Queen Victoria Museum (Reg. No. 918FR).

Variation.—Examination of a range of specimens may show this fish is distinct from Lucas' species: with only one individual available, it seems advisable for the present to assume identity.

Chief differences from holotype exhibited by present specimen; two fewer rays in third dorsal; three more rays in pectoral; rather smaller eye; level of anal origin further forward along base of second dorsal than shown in Lucas' figure.

The marked differences in coloration—the holotype (in spirit) is described as orange, with red vertical bands; eye red—are probably attributable to the use of different media for preservation: attention has previously been called (Scott, 1936, p. 123) to variations in colour of blennies in alcohol and formalin (1).

Family OPHICLINIDAE

Genus **Ohpiclinus** Castelnau, 1872

Ophiclinus greeni Scott, 1936

Ophiclinus greeni Scott, *Pap. Roy. Soc. Tasm.* 1935 (1936), p. 114, fig. 1.

Record.—Two specimens, of total length 75.0, 62.0 mm., standard length 68.0, 56.5 mm. (Reg. No. 806, a-b), collected in rock pools at mouth of Currie River, Northern Tasmania, by Mr. G. R. F. Green, on 3rd January, 1936.

Remarks.—The species has hitherto been known only from the holotype and two paratypes, the type-locality being Lady Lucy Beach, Low Head, Northern Tasmania. In addition to providing a new locality, the present specimens are of importance in that they both considerably exceed in size the largest specimen previously known—larger individual is one and a half times as long as larger paratype, which has total length 49.8 mm., standard length 45.5 mm.—and afford some interesting data regarding variation of proportion with general size.

Proportions.—Large individual noted first [values in square brackets show range exhibited by holotype and two paratypes, 34.3-49.8 mm. in total length, 31.9-45.5 mm. in standard length]. Depth 7.7, 8.8 [7.7-8.2] in total length; 7.0, 8.1 [6.4-7.5] in standard length: depth at level of first anal ray 7.9, 9.3 [7.7-8.9] in total length; 7.2, 8.4 [6.9-8.1] in standard length. Head 6.4, 6.1 [4.9-5.7] in total length; 5.8, 5.5 [4.4-5.2] in standard length. Eye 6.5, 6.4 [5.3-6.1] in head; 1.5, 1.4 [1.2-1.5] in snout; 1.3, 1.1 [1.1-1.2] in tail without caudal fin.

It will be seen that with increase in size of the fish are correlated decrease in length of head, relative to total, or to standard, length; decrease in diameter of eye, relative to length of head; and decrease of combined length of head and trunk, relative to tail without caudal fin. The first two variations are, of course, characteristic of many fishes; and there is evidence to show that, with advancing age, increase of length of the postanal, relative to the preanal, portion of the body is not uncommonly encountered in Blenniid fishes.

Maxillary extends to level of middle (smaller specimen), or hinder four-fifths (larger specimen), of eye.

(1) Recently Myers (1936, p. 83) has discussed the significance in certain Albulid fishes of longitudinal dark stripes observed in formalin specimens, the presence or absence of which is possibly connected with the nature of the preservative used.

Fin-Formulae.—Larger individual noted first. D. XLVIII, 1; XLIX, 1. A. III, 32 (both specimens). P. 12; 11. V. 2 (both) C. 13 + $\frac{2}{3}$; 13 + $\frac{2}{1}$.

Genus **Salarias** Cuvier, 1829

Salarias meleagris Cuvier and Valenciennes, 1836

Salarias meleagris Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI. 1836. p. 332.

Remarks.—Type-locality is given as 'Terre de Van-Diemen' (Péron); and the species is included by Johnston in both his Tasmanian lists, since which, however, it has been dropped from all local catalogues. In their review of some Australian Blennioid Fishes McCulloch and McNeill state (1918, p. 17): 'This species was said to have been originally obtained by Péron in Tasmania, but no species of the genus occurs so far south. Johnston (1883, p. 121) noted that it was common in Tasmanian waters, but his reference doubtless applied to *Blennius tasmanianus*.' In the Australian Check-List the Australian range is given as Queensland, Northern Territory.

The comment made by McCulloch and McNeill regarding the confounding on Johnston's part of this species with *Blennius tasmanianus* Richardson, 1849, may perhaps appear a rather sweeping and overfacile one: it is, I believe, nevertheless, almost certainly correct. As the result of examination of a considerable number of specimens of *Blennius tasmanianus*, I find that while in the majority the conformation of the anterior portion of the head is much that shown in the well-known figure by Waite (1906, pl. XXXVI. fig. 5)—*i.e.*, dorsal profile of snout sloping backwards at about 45°; snout little less than, often greater than, eye; mouth-cleft markedly oblique (about normal to dorsal profile of snout), reaching to about middle of eye—occasional individuals have a decidedly *Salarias*-like facies, the dorsal profile of the snout being subvertical, making length of snout barely more than half eye, and bringing mouth-cleft, which now extends about to posterior orbital margin, virtually horizontal.

Family GOBIIDAE

A recent revision of the Tasmanian members of the family (Scott, 1935a) credits our fauna with three species, representing as many genera: *Nesogobius hinsbyi* (McCulloch and Ogilby, 1919); *Arenigobius tamarensis* (Johnston, 1883); *Tasmanogobius lordi* Scott, 1935.

A note on *Arenigobius tamarensis* appears below, and a key to the local gobies is supplied.

Key to Gobiidae Recorded from Tasmania

1. Body with well-developed normal scales. Second dorsal with < 12 rays; its base < 2 (about 1½) base of first dorsal ..... (2)
   Body without normal scales. Second dorsal with > 12 rays; its base > 2 (about 2½) base of first dorsal ..... (3)

2. Rows of scales between axilla and hypural < 40. Tongue notched anteriorly. Spines of first dorsal never > 6 ..... *Arenigobius*
D. VI, 9. A. I, 8. Rows of scales between axilla and hypural 32-33. General colour greenish-grey or greyish-brown, becoming whitish or pale greenish-grey below; vertical bars on side, if present, about 4, not descending below midlateral line ..... *A. tamarensis*

Rows of scales between axilla and hypural > 40. Tongue rounded anteriorly. Spines of first dorsal usually > 6 ..... *Nesogobius*
D. VII (rarely VI)-VIII, 9-12. A. I, 8-11. Rows of scales between axilla and hypural 50. General colour sandy above midlateral line, white below; usually about 12 narrow subvertical bars on side, often descending below midlateral line ..... *N. hinsbyi*

3. Body with pectinate groups of microscopic spines, arranged in staggered rows, often invisible without dissection ..... *Tasmanogobius*
D. VI-VII, 15-16. A. I, 13-15. In life virtually transparent, with small fawn markings ..... *T. lordi*

Genus **Arenigobius** Whitley, 1930

Arenigobius tamarensis (Johnston, 1883)

Gobius tamarensis Johnston, *Pap. Roy. Soc. Tasm.* 1882 (1883), p. 120.

Arenigobius tamarensis Scott, *Pap. Roy. Soc. Tasm.* 1934 (1935), p. 50, pl. IV, fig. 1 (references and synonymy).

Record.—This species, which appears to have remained unrecognised during the fifty-odd years between the publication of the original description and the provision of a redescription and figure in the revision of the Tasmanian Gobiidae cited above (Scott, 1935a), has hitherto been know only from the type-locality, River Tamar, Northern Tasmania.

It may now be recorded from the East Coast, two specimens of total length 51, 58 mm., standard length 41, 47 mm. (Reg. Nos. 943, a-b) being included in a sample of 'Prettyfish' collected at Swansea by Mr. H. W. A. von Stieglitz: received 18th December, 1934. 'Prettyfish,' it may be observed, is a collective term for various small fishes used as bait at several fishing resorts on the East Coast. The constituent species not improbably vary with locality and season: in the present instance, the two gobies are associated with 14 specimens of *Atherina microstoma* Günther, of total length 49-72 mm., av. 59 mm.

SUMMARY

1. Some general observations are made on *Arripis trutta* (Bloch and Schneider, 1801), *Petraites forsteri* (Castelnau, 1881), *Petraites incertus* McCulloch, 1915, *Tripterygion clarkei* Morton, 1888, *Ophiclinus greeni* Scott, 1935, *Arenigobius tamarensis* (Johnston, 1883).

2. Little-known species described and figured are *Leptonotus semistriatus* Kaup, 1856, *Gillias macleayanus* (Lucas, 1891).

3. Additions to the Tasmanian faunal list comprise *Leptoichthys fistularius* Kaup, 1853, *Arripis georgianus* (Cuvier and Valenciennes, 1831).

4. The inclusion in the local lists of *Corythoichthys phillipi* (Lucas, 1891), *Salarias meleagris* Cuvier and Valenciennes, 1836, is discussed.

5. Keys are supplied to the Tasmanian members of the families Syngnathidae, Arripidae, Blenniidae, Gobiidae.

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