On a Collection of Fishes Made by Dr. Marshall Laird at Norfolk Island

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Abstract

Norfolkia n.g. (F. Clinidae), allied to *Gillias*, established to contain *N. lairdi* n. sp. and the following recorded and variously discussed:—

O. Muraenida: *Gymnothorax flavimarginatus, G. nubilus.*

O. Percida: *Serranus daemelii, Girella cyanea, Pomacentrus fasciolatus, Parma polylepis, Abudefduf sordidus, A. polyacanthus, Halichoeres binotopsis, Thalassoma umbrostygma, Cirripectus variolosus, Salarias lineatus, Rhabdoblennius snowi, Tripterygion rufopileum, Clinus perspicillatus, Eviota viride, Bathygobius fuscus.*

From February 5 to 12, 1952, Dr. Laird collected the intertidal pool fishes from the (partly) coral reef at Kingston, Norfolk Island (S. Lat. 29° 03′ 45″ E. Long. 167° 58′ 6″). These were forwarded from the Department of Zoology, Victoria University College, Wellington, New Zealand, under date of March 7, for identification and study. The collection contains 100 specimens which I refer to 18 species, of which a clinid appears to be a new genus and species. It affords me great interest, as it is the first lot of fishes from Norfolk Island I have ever had opportunity to study.

Little appears to be known of the fishes of Norfolk Island, and the literature pertaining to it is most brief. I am presenting several drawings, including the new species and interesting phases of others. As most of the species listed in this collection are additions to the fauna of the island, I trust they merit the references and comments given. In this connection I wish to thank Dr. Laird with deep appreciation for the favour of placing this material at my disposal. In concurrence I also wish to gratefully acknowledge the assistance rendered to him by a Hutton Grant from the Royal Society of New Zealand.

Order MURAENIDA. The Eels.

Muraenidae

Gymnothorax flavimarginatus (Rueppell).

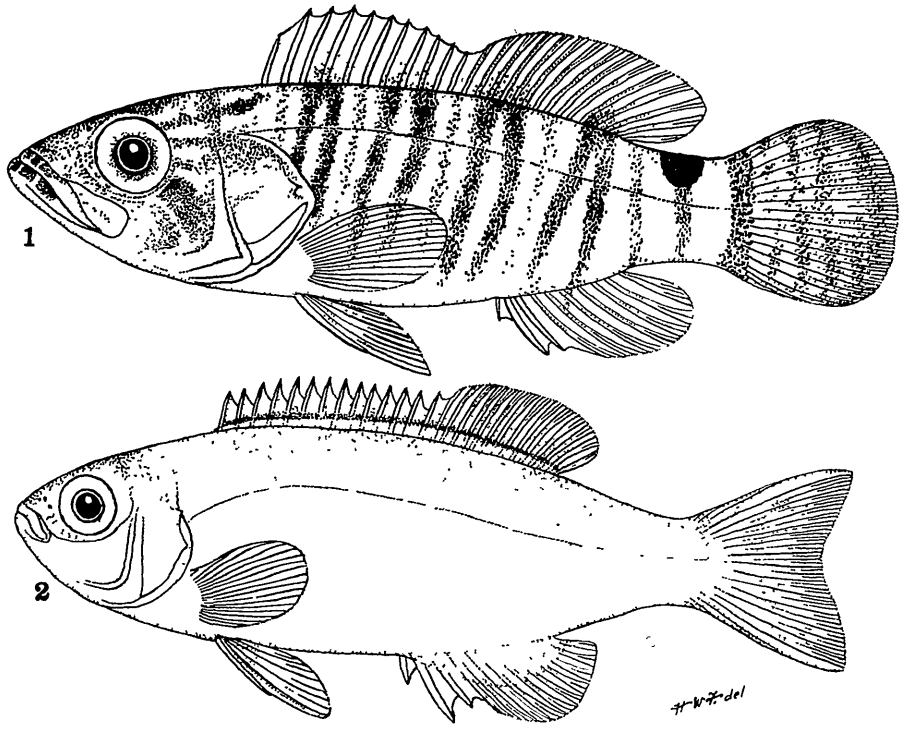
One 235 mm. Dark brown in alcohol, obscurely mottled or marbled with darker. On outer face on each jaw, as 4 above and 4 below, row of small white spots ocellated with darker or blackish borders. Gill opening with black border all around.

Inside mouth no inner teeth above, below front of eye, as shown by Bleeker (*Atlas Ich. Ind. Néerl*, vol. 4, 1864, p. 95, Pl. 178, fig. 3).

Gymnothorax nubilus (Richardson).

Muraena nubila Richardson, Voy. "Erebus and Terror," Fish, 1844–48 (1847). p 81 Pl. 46, figs. 6–10. Norfolk Island; Houtman's Abrolhos; Mauritius.

One 310 mm. Agrees in most all details with Richardson's figure. In the upper jaw an inner longer or larger tooth each side opposite front of eye. Narrow contrasted edges of dorsal posteriorly, caudal and entire anal pale blue grey in alcohol.



TEXT FIGURES 1 and 2

Order PERCIDA. The Perches

SERRANIDAE

Serranus daemelii Guenther. Figure 1.

Epinephelus daemelii Boulenger, *Cat. Fish Brit. Mus.*, vol. 1, 1895, p 223, Pl 7 (Sydney; Port Jackson, New South Wales; Norfolk Island.)

One 31 mm. Black saddle on caudal peduncle above very prominent

GIRELLIDAE

Girella cyanea Macleay. Figure 2.

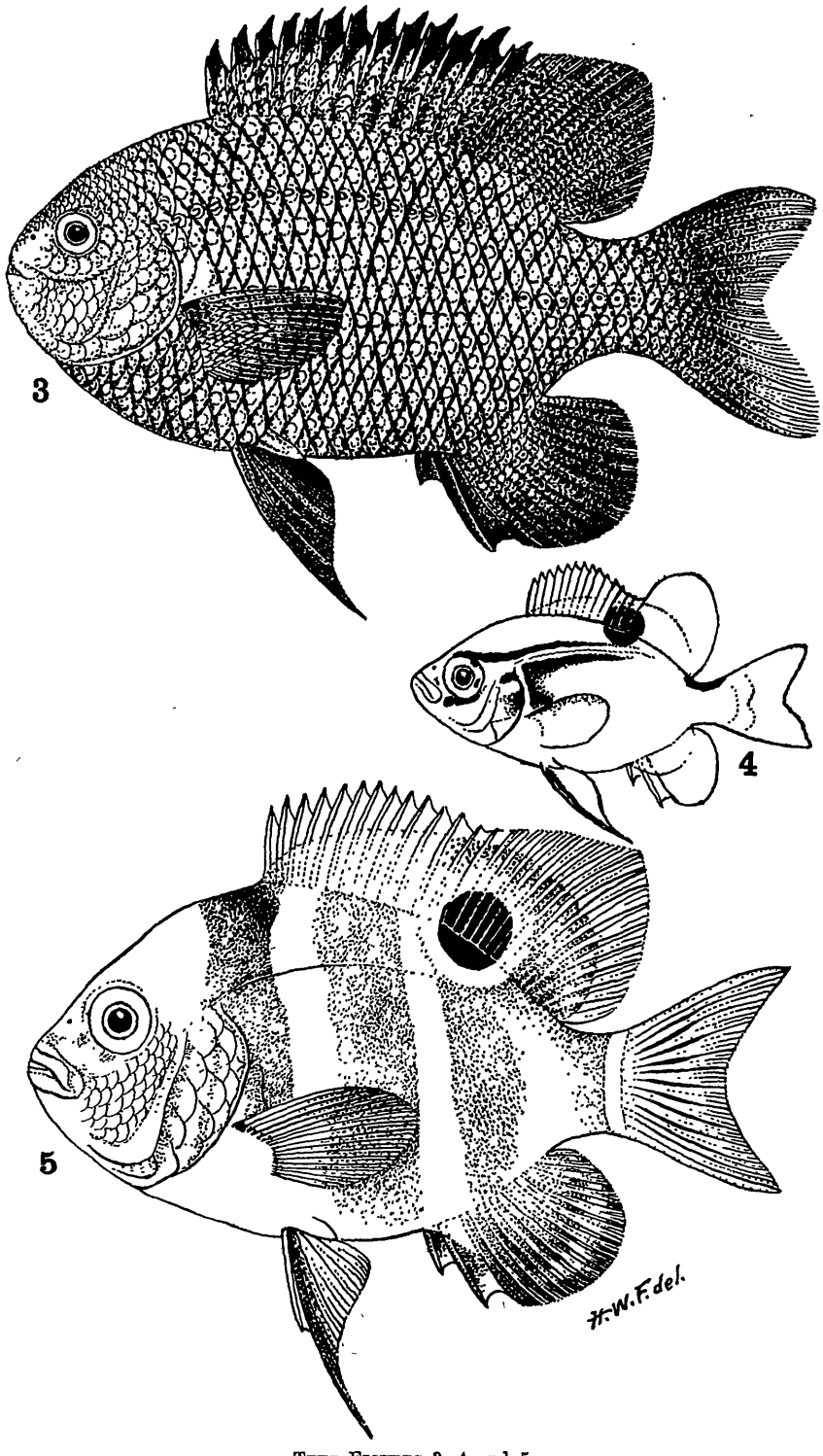
Three 42 to 59 mm

POMACENTRIDAE

Pomacentrus fasciolatus Ogilby. Figure 3.

Austral. Mus. Mem, no. 2, 1889, p. 69. Lord Howe Island

One 114 mm. In agreement with Ogilby's original description, which seems to be about all that is known of the species. Ogilby mentions "several specimens" which he says measure 1⅞ to 6½ inches in length. He mentions round,



TEXT FIGURES 3, 4 and 5

light blue spots on the opercles, cheeks, throat and base of the anal fin, though no trace of them appears in my specimen. He does not mention, however, the black spot at the origin of the pectoral fin. His description does not indicate the extent forward to which the small scales on the snout above reach, which in my specimen is well before the nostril and close to the edge of the upper lip.

Waite virtually identifies this species with *P. marginatus* Jenkins (*Austral. Mus. Mem.*, vol. 5, no. 3, March 11, 1904, p. 208, Lord Howe Island), which is erroneous. I have discussed the Hawaiian fish of Jenkins with the Easter Island *P. inornatus* Regan (*Proc. Acad. Nat. Sci. Phila.*, vol. 93, 1941, p. 262—*P. niomatus* De Vis, 1883). Regan says " a small blackish spot above axil of pectoral," but my specimen has a larger grey-black blotch at the pectoral origin extended into the axil. Other differences compared with Hall's figure of *P. inornatus* Regan, are the higher scales on the preorbital, more forward extension of the rostral scales, body scales brown edged, upper row of scales on the spinous dorsal greatly longer and larger than the lower or suborbital series, hind edges of soft dorsal, anal and caudal lobes pale grey in contrast, small, lanceolate scales on pectoral basally and first ventral ray ending in a filament.

Parma polylepis Guenther Figures 4 (young) and 5.

Cat. Fish. Brit. Mus., vol. 4, 1862, p. 59. Norfolk Island. Waite, *Austral. Mus. Mem.*, vol. 5, no. 2, March 11, 1904, p. 208, Pl. 22 (adult). (Lord Howe Island.)

Three 28 to 51 mm. These interesting young specimens show stages not previously described or figured.

Abudefduf sordidus (Forskael). Figure 6.

One 40 mm. Faded grey, paler on tail and caudal.

Abudefduf polyacanthus (Ogilby). Figure 7.

Glyphidodon polyacanthus Ogilby, *Austral. Mus. Mem.*, vol. 2, 1889, p. 65. Lord Howe Island.—Waite, *Rec. Austral. Mus.*, vol. 5, no. 3, March 11, 1904, p. 209, Pl. 23, fig. 1 (idem).

One 25 mm.

LABRIDAE

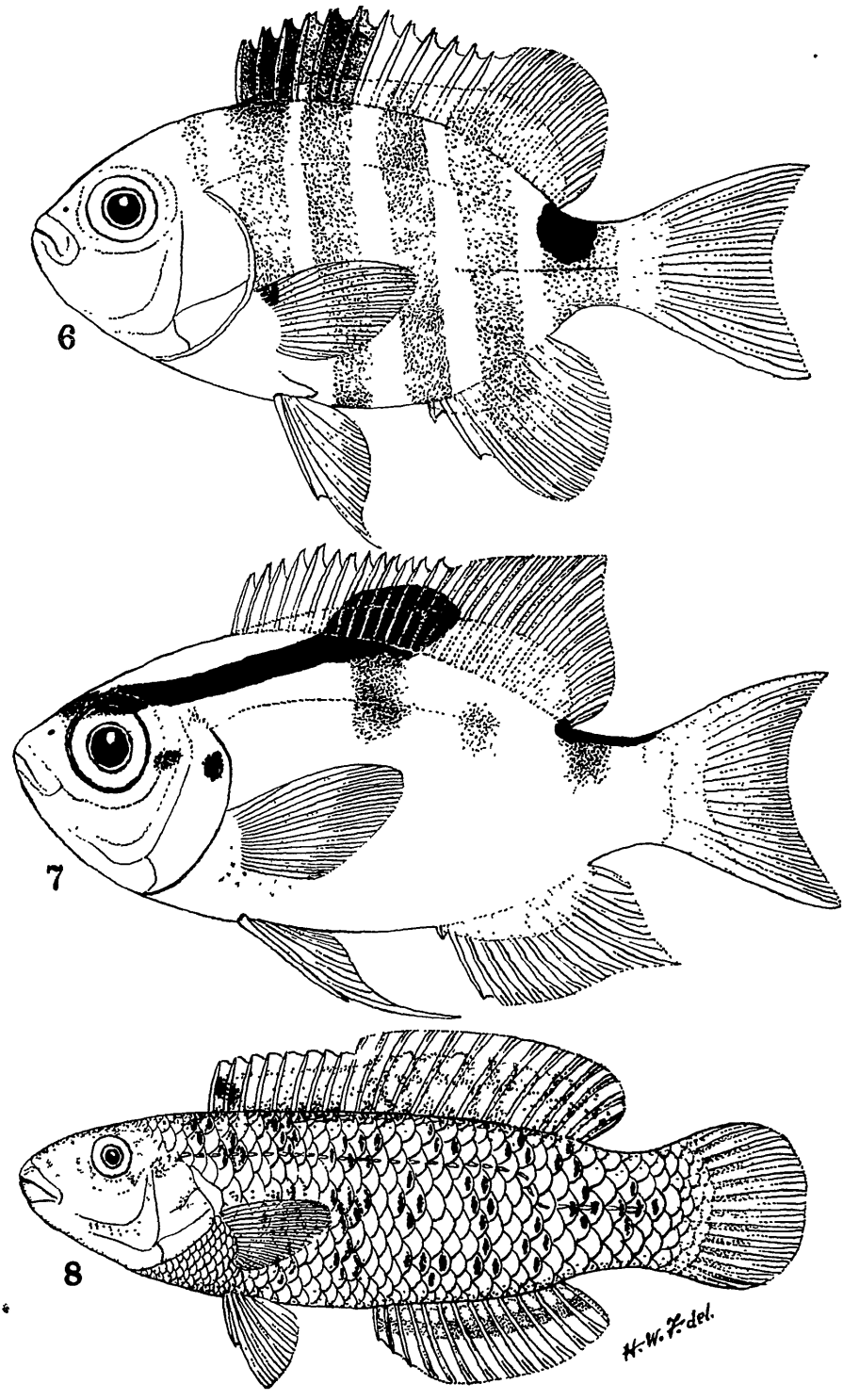
Halichoeres binotopsis Bleeker.

Depth $3\frac{3}{4}$; head $3\frac{1}{3}$. Snout $3\frac{1}{2}$ in head; eye $3\frac{1}{2}$; mouth cleft reaches $\frac{3}{4}$ to eye; interorbital space 4 in head, convex. Scales 22, 5–3 in lateral line. No basal scaly sheath along dorsals. Greenish in alcohol, head below and belly whitish. Iris dark grey. Along side of body axially row of 5 clusters of dark brown spots, composed as 1 dark bar terminally on each scale exposure. No dark spot at pectoral origin. Caudal whitish, with transverse sub-basal grey streak. Dorsals with small black basal spot on first membrane of spinous fin and another medially on first membrane of soft dorsal. Paired fins pale. One 40 mm.

Thalassoma umbrostygma (Rueppell) Figure 8.

Julis umbrostygma Rueppell, *Neue Wirbelth., Fische*, 1835, p. 11, Pl. 8, fig 2. Mohila and Djetta, Red Sea.

Teeth uniserial, with 2 canines in front of each jaw, but no hind canines. In alcohol largely greenish. Along side of back 8 groups of dark brown edged scales, 6 groups axially and 5 groups along lower side of body. Blackish blotch on membranes of first 2 dorsal spines and fin with subterminal pale grey lengthwise streak. Soft dorsal with 2 rows of pale spots on each membrane and outer border of fin broadly whitish. Anal with blue-green lengthwise band, separated



TEXT FIGURES 6, 7 and 8

from base of fin by a pale basal spot on each membrane and outer half of fin with a broad white border. Caudal bluish green over greater median and basal area and outer border broadly whitish. Pectoral with very small blackish spot at origin. Ventral pale greenish medially, marginally white. Iris grey-green. One 85 mm.

BLENNIIDAE

Cirripectus variolosus (Valenciennes).

Five 74 to 124 mm.

Salarias lineatus Valenciennes. Figure 9.

No canines. Both lips smooth, entire. Dorsal spines terminally flexible. No nuchal cirrus One 121 mm.

Rhabdoblennius snowi (Fowler). Figure 10.

Twenty-two 30 to 68 mm. Hind canines present. Unique in its coloration, with the arc of 5 white or pearly blotches along the hind edge of the eye.

CLINIDAE

Tripterygion rufopileum Waite. Figure 11, female.

Austral. Mus. Mem., vol. 5, no. 3, March 11, 1904, p. 182, Pl. 24, fig. 4 Lord Howe Island; p. 225 (reference).

Ten 26 to 40 mm. All with dark or black heads below.

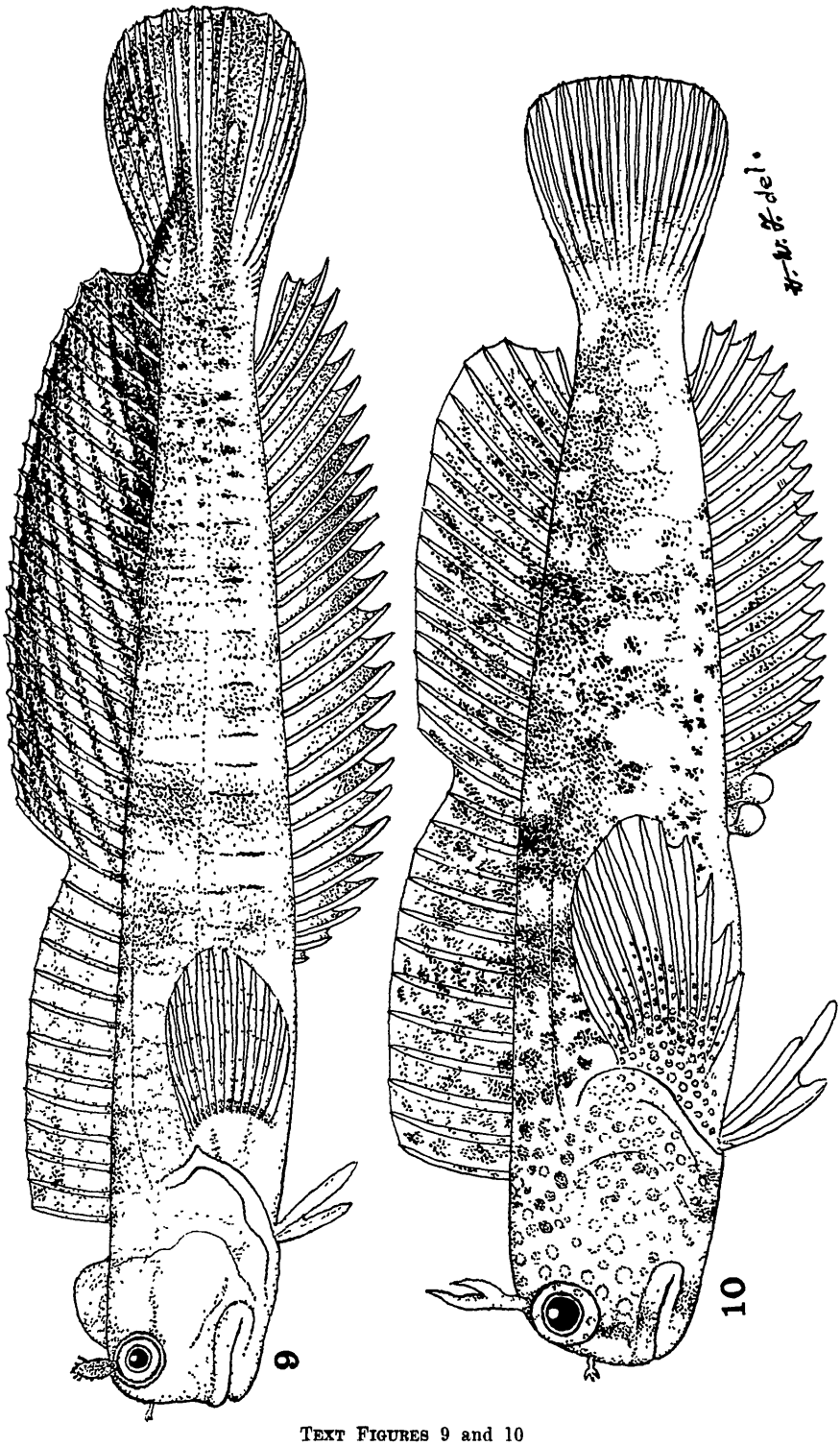
Sixteen 21 to 45 mm. Mostly all with lower surface of head pale like abdomen. Some with pale to whitish caudal with 3 broad transverse bands grey, or band may be divided as 3 narrow transverse bars. Some small specimens have the transverse dark bars very contrasted or blackish brown. Several are also orange or reddish.

Genus NORFOLKIA n. g.

Type: *Norfolkia lairdi* new species.

Body elongate, compressed. Head large, depressed. Snout broad, depressed. Eye moderate, elevated, entering upper profile of head. Upper edge of supraorbital with a row of very minute and somewhat irregular denticles. Mouth large, terminal, tip of snout level with lower edge of eye. Nostrils 2 close-set simple pores, without flap or filament. No supraorbital flap, though right orbit with free skinny point above posteriorly but none on left orbit. Gill opening extends forward nearly opposite hind edge of orbit. Head largely with fine scales and muzzle naked. Pectoral basally scaled, also chest and belly scaly. Lateral line with upper section extended nearly to middle of third dorsal fin base. Caudal base scaly. Lower section median along side of tail, obscure, separated from upper section by 2 rows of scales intervening below third dorsal, and marked by a single small, posterior, submarginal pore on each scale in its course. Dorsal composed of spines and divided as 3 fins. Anal with long base. Caudal small. Pectoral long. Ventral with long hind ray.

Approaches the American genus *Gillias* Evermann and Marsh (*Rep. U.S. Fish Comm.*, pt. 25, 1899 (Dec. 19), p. 357, type *G. jordani* Evermann and Marsh) but its genotype is shown with only a few scales on the front of the opercle, orbital and nasal cirri present, fewer fin rays, greatly larger scales, sections of the lateral line advanced to below second dorsal and separated by a single row of



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scales, a scaleless pectoral, entire supraorbital edge and the greatly different coloration.

McCulloch has placed 3 Australian species in *Gillias* (*Austral. Mus. Mem.*, vol. 5, pt. 3, Nov. 28, 1929, p. 347). They are *Tripterygion striaticeps* Ramsay and Macleay, 1888, *Tripterygium clarkii* Morton, 1888, and *T. macleayanum* Lucas, 1891.

Tripterygion striaticeps Ramsay and Macleay (*Proc. Linn. Soc. N.S. Wales* (2) vol. 3, no. 2, Sep. 10, 1888, p. 419, Tailor Bay, Port Jackson). This is based on specimens $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long, head $5\frac{1}{2}$ to $5\frac{2}{3}$, short squarish multifid tentacle above upper angle of eye, numerous spine-like tentacles on upper hinder edge of eye. This is perhaps closest to *Norfolkia lairdi*, but it is described with a greatly smaller head and only spine-like tentacles on the upper hind edge of the eye.

Tripterygium clarkii Morton (*Proc. Roy. Soc. Tasmania*, 1887 (1888), pp. xlvii, 78, Clarke Is., Bass Strait). Based on a specimen 3 inches long, with the lateral line given as 26, 3 spines in first dorsal, anal rays 23, and a small nasal tentacle present.

Tripterygium macleayanum Lucas (*Proc. Roy. Soc. Victoria*, n.s., vol. 3, 1890 (April, 1891), p. 12, Pl. 3, fig. 1, Port Phillip, Victoria). This is based on a specimen but 50 mm. long. It is described with the body depth less than the head length and equal to the caudal. Head $3\frac{1}{2}$ to caudal base. Pectorals reach nearly opposite to end of second dorsal (on figure shown reaching to opposite middle of second dorsal). Scales in lateral line 25. Eye 3 in head (as $3\frac{3}{4}$ on figure). Short fringed tentacle above orbit and at outer side of nostril (not shown on figure), line of fringed papillae above and behind orbit (not shown on figure). Orange, with broad, indistinct red vertical bands, edges red. Ventrals pale, with black margins (none of these markings shown on figure).

From these items it appears the generic identity of the three preceding species referred to *Gillias* by McCulloch is questionable. Their inclusion in *Norfolkia* would be equally doubtful until more evidence is forthcoming.

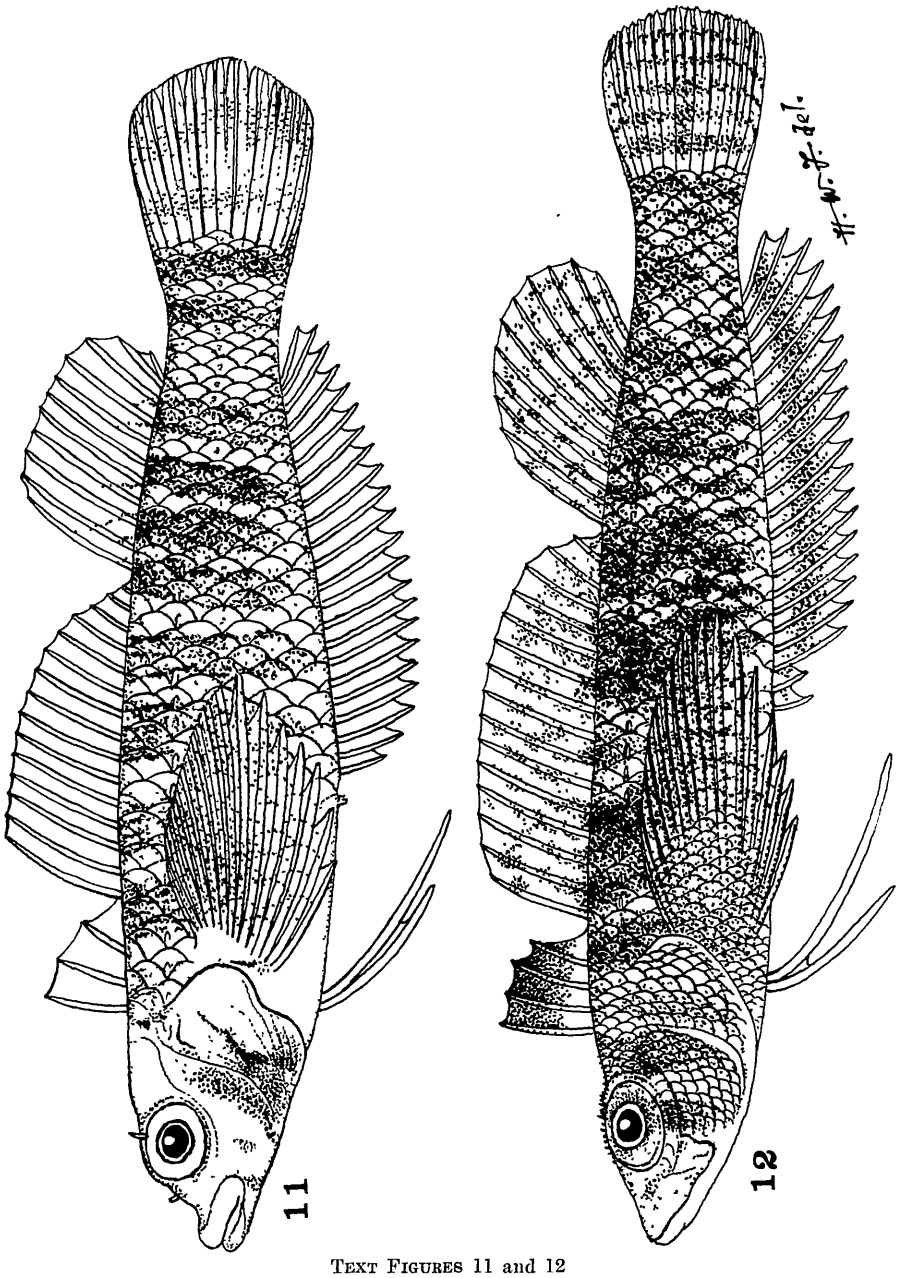
I have examined fresh Bahama specimens of *Gillias jordani* Evermann and Marsh, genotype of *Gillias*. In alcohol they are quite reddish and agree in most respects with the original figure and description. They are with more sharply contrasted dark brown cross bars on the body, more dark spots and blotches on the side of the head and lower parts of the pectorals.

(Named for Norfolk Island.)

Norfolkia lairdi new species. Figure 12. Type.

Depth $5\frac{2}{5}$; head $3\frac{1}{3}$, width $1\frac{2}{5}$. Snout 4 in head measured from snout tip; orbit $3\frac{1}{4}$, exceeds snout; mouth oblique, closed jaws with lower slightly protruded; maxillary reaches $2\frac{1}{3}$ in head, expansion $1\frac{7}{8}$ in eye; teeth uniform, small, in narrow bands in jaws; interorbital narrowly concave, width $2\frac{1}{4}$ in orbit; ridge or keel along upper hind edge of eye. Gill membranes broadly united over its isthmus

Scales, 23 tubular in upper section of lateral line, followed by axial section along side of tail as row of 18 pores; $1\frac{1}{2}$ scales above upper section, 4 below axial section to anal base. Cheek below suborbitals with 6 rows of scales and opercles fully scaled. Small scales on chest. Caudal base with a band of scales, 2 series wide.



TEXT FIGURES 11 and 12

D IV—XV—XI, with second fin most extensive; A II, XIX, spines short, subequal, caudal rounded, with 9 divided rays—viii, exceeds head; ventral with 2 rather long simple rays

Colour in alcohol pale brown generally, whitish on under surface of head, breast and belly. Along upper side 7 large brown blotches, of which first 5 along upper section of lateral line Below these blotches give off more or less indefinite

extensions, some of which appear as detached spots or blotches along lower side of the tail. Eye dark grey. Dark brown bar down from lower edge of eye over front of cheek, and another from postocular area down along upper limb of preopercle. First dorsal largely grey-black, and other dorsals with dark grey spots forming irregular bars. Caudal with blackish basal bar and with 5 transverse bars mostly made up of dark spots on rays. Anal with end of each ray and notch white, also narrow basal area white, but broad median area dark grey. Pectoral pale greyish. Ventral whitish.

Type, 57 mm. Kingston, Norfolk Island. February, 1952.

(Named for Dr. Marshall Laird.)

Clinus perspicillatus Valenciennes.

Hist. Nat. Poiss., vol. 11, July, 1836, p. (274) 472 Westernport, Victoria. —McCulloch, *Rec. Austral. Mus.*, vol. 7, no. 1, March, 1908, p. 43, Pl. 71, fig. 4 (Tasmania; Victoria).

General colour pale yellowish, with 7 transverse broad orange-brown bands, extending on dorsals and anal. Five 24 to 40 mm. Agree very well McCulloch's figures.

ELEOTRIDAE

Eviota viride (Waite).

Allogobius viridis Waite, *Rec. Austral. Mus.*, vol. 5, no. 3, March 11, 1904, p. 177, Pl. 23, fig. 3. Lord Howe Island.

Twenty specimens 10 to 33 mm. In general colour pink or greyish-white to greenish-yellow and dark grey. Some specimens show the muzzle and upper edge of the back with orange to orange-vermillion shades. Scales on back sometimes and those at caudal base with distinct reddish marginal tints. Round black spot at middle of caudal base distinct. Vertical fins more or less greyish to grey black, especially first dorsal and anal. In largest specimen dark brown inclined band from lower eye edge to arch of preopercle, with one in front and another behind.

Several of larger specimens with first dorsal spine a prolonged filament.

E. zonura Jordan and Seale (*Bull. Bur. Fisher. U.S.*, vol. 25, 1905 (1906), 386, fig. 75, Apia, and Pago Pago, Samoa) and *E. gymnocephalus* Weber have both been placed as synonyms (*Siboga Exped.*, vol. 57, Fische, 1913, p. 452, fig. 87, Damar, Salomakie I.). These do not, however, have the first dorsal spine produced, and are with different coloration. The Hawaiian *E. epiphanes* Jenkins (*Bull. U.S. Fish Comm. Fish.*, vol. 22, 1902 (1903), p. 501, fig. 12, Honolulu) differs still more so in coloration, and does not possess a dorsal filament.

GOBIIDAE

Bathygobius fuscus (Rueppell).

Four 56 to 75 mm. The smaller specimen approaches *Gobius aeolosoma* Ogilby, as shown by McCulloch's drawing as published by Waite (*Rec. Austral. Mus.*, vol. 5, no. 3, March 1904, p. 222, Pl. 23, fig. 2). The markings are much more vivid and contrasted.

BIBLIOGRAPHY

BLEEKER, PIETER, 1855. *Over eenige visschen van Van Diemensland.* (Amsterdam) vol. 2, 1855, pp. 30, Pl. with 5 figs. Includes a list of 8 species for Norfolk Island and 5 for the Aucklands. The first list is reprinted with identification of the species by Waite, in 1909.

FORSTER, J. R., 1844. Descr. animal. (Henrico Lichtenstein.) *Mare Pacificum inter novam Caledoniam et Norfolciae insulam*, pp. 282–310. On p. 292 *Sciaena cultrata* Richardson (—*Bathystethus cultratus*) is the only species recorded for Norfolk Island.

OGILBY, J. D., 1889. The reptiles and fishes of Lord Howe Island *Austral. Mus. Mem.*, no. 2, 1889, pp 49–74. Refers to a few Norfolk Island fishes.

WAITE, EDGAR R., 1909. A list of the known fishes of Kermadec and Norfolk Islands. *Trans. New Zealand Inst*, vol 42, 1909, pp. 370–383. On pp. 380–381 lists for Norfolk Island fishes.

——— 1911 Additions to the fish fauna of the Kermadec Islands. L. c., pt. 1, 1911, p. 28. Mention of 2 species from Norfolk Island.