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# STUDIES IN ICHTHYOLOGY.

No. 11.\*

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(Plate xxi, and Figure 1.)

Family OPHICHTHYIDAE.

Genus *Malvoliophis* Whitley, 1934.

*Malvoliophis* Whitley, Rec. Austr. Mus., xix, 2, March 26, 1934, p. 154. Orthotype,  
*Bascanichthys hemizona* Ogilby.

*Malvoliophis pinguis* (Günther).

(Fig. 1.)

*Ophichthys pinguis* Günther, Ann. Mag. Nat. Hist. (4), x, Dec. 1, 1872, p. 425.  
Salomon Islands. Type in British Museum. *Id.* Günther, Cruise Curaçoa  
(Brenchley), 1873, p. 430, pl. xxxv. *Id.* Günther, Journ. Mus. Godeff., vi, 17,  
1910 (Fische d. Südsee, ix), p. 399. *Id.* Borodin, Bull. Vanderbilt Mus., i,  
1932, p. 71.

*Bascanichthys hemizona* Ogilby, Proc. Linn. Soc. N.S. Wales, xxii, 2, Oct. 25, 1897,  
p. 248. Port Jackson, N.S. Wales.

*Bascanichthys pinguis* Waite, Rec. Austr. Mus., iv, 1901, p. 53, *et ibid.*, v, 1903,  
p. 22 (Lord Howe Island). *Id.* McCulloch, Austr. Zool., ii, 1921, p. 35, pl. viii,  
fig. 86a, and Austr. Mus. Mem., v, 1929, p. 70.

*Ophichthus pinguis* Fowler, Mem. Bern. P. Bishop Mus., x, 1928, p. 44.

*Malvoliophis pinguis* Whitley, Rec. Austr. Mus., xix, 1934, p. 154; Abstr. Proc.  
Linn. Soc. N.S. Wales, 497, May, 1937, p. 1.

Three post-larval specimens, 41, 45, and 48 mm. long, have been referred  
to this species, the middle-sized specimen being selected for describing and  
figuring here.

Head (6.4 mm.) 7, depth (2.5) 18 in total length (45). Eye (1) wider than  
interorbital, and slightly wider than dark bands on body.

The head is conic, the mouth being inferior, reaching backward to below the  
anterior half of the eye. The end of the upper jaw considerably overhangs the  
lower. Rows of fine acute teeth in jaws, the anterior ones caniniform. About  
four branchiostegal rays can be seen through the skin. The gill-slits are difficult

\* For No. 10, see RECORDS OF THE AUSTRALIAN MUSEUM, Vol. xx, No. 1, May, 1937,  
p. 3.

to distinguish, being tiny slits, lateral in position. Eye large, somewhat oval, not cutting dorsal profile; interorbital widest posteriorly. The nostrils are inconspicuous, the anterior ones occupying short tubes on upper lip, and posterior ones somewhat in front of eyes. Lateral line feebly developed for a short distance anteriorly.

Body elongate, compressed. The consistency of the flesh is firm and muscular, not gelatinous as in a *Leptocephalus* larva; there may have been slight shrinkage through fixation in methylated spirits. There are sixty-three myomeres between head and tip of tail. By counting these from the occipital region backwards, we find:

- Nos. 1 to 3 just behind vertex of head,
- No. 4 over first dark band of colour on body,
- Nos. 5 to 9 between first and second bands,
- No. 10 on second band,
- Nos. 11 to 16 between second and third bands,
- No. 17 on third band,
- Nos. 18 to  $24\frac{1}{2}$  between third and fourth bands,
- Nos.  $24\frac{1}{2}$  to 25 on fourth band,
- Nos. 26 to  $31\frac{1}{2}$  between fourth and fifth bands,
- Nos.  $31\frac{1}{2}$  to  $33\frac{1}{2}$  on fifth band,
- Nos.  $33\frac{1}{2}$  to 63 to end of tail.

This low number of myomeres is noteworthy, since most eel larvae have at least 100. Furthermore, it is deduced that the larva of this species must be a large one, since these specimens are practically metamorphosed at 41–48 mm. The anus is in the anterior half of the fish, between the third and fourth band, at the twenty-first myomere. The belly is somewhat rounded in transverse section anterior to anus, but the body is very compressed posteriorly, so that the vertebrae of the tapering tail region may be seen when the specimen is held against the light.

No fin-membranes are apparent anywhere. The dorsal and ventral profiles are, however, scalloped between the rather prominent interhaemal spines. Dorsally the scalloping commences immediately behind the head, but ventrally it starts behind the vent. No pectoral fins. Tail ending in a free point.

Colour, in spirit, yellowish-brown with some groups of sparse dark compact chromatophores on sides of head and top of snout. The fish is encircled by five prominent bands, chocolate brown in colour, and strongly contrasted with the ground colour; only the hindmost of these bands trespasses on the posterior half of the fish, and the anterior bands are closer together than the others.

*Locality*.—About one mile off Jervis Bay heads, southern New South Wales; trawled in Danish seine net in 26 fathoms by Mr. Thomas Webb aboard the "Nannegai". Three specimens presented by Mr. Melbourne Ward; Austr. Mus. Regd. No. IA.7115.

The 41 and 48 mm. specimens have not developed the cross-bands which are so prominent in the 45 mm. example figured. However, they have the same number of myomeres (63), similar clusters of rusty red spots on the head, and even some milky spots on opercles.



Fig. 1.—*Malvoliophis pinguis* (Günther). A juvenile specimen, 45 mm. in total length, from off Jervis Bay, New South Wales. Austr. Mus. Regd. No. IA.7115.

G. P. Whitley, *del.*

*Malvoliophis pinguis* has been recorded from the Solomon Islands, Lord Howe Island, and New South Wales, but it is by no means common. Thus it is all the more remarkable that three specimens should have been caught at once at Jervis Bay, also that they should have inhabited fairly deep water (though the bare possibility that they entered the net as it was being hauled must not be overlooked), since most eel larvae are pelagic. Some features of these young specimens disagree with the adults. The mouth does not extend beyond the eye, there are no pectoral fins, the coloration when present is symmetrical, and the body and tail are less elongate in the Jervis Bay juveniles. It is thought, however, that these features will alter with age and growth; concerning the presence or absence of pectoral fins in young eels, Eigenmann and Kennedy<sup>1</sup> have found that this depends at times on the age of the specimen. The structure of the head, the free tail-tip, and the coloration of my Jervis Bay specimens show that they are Ophichthyidae and point to the probability of their being *Malvoliophis*.

The Snake Eels or Ophichthyidae are stated by Jordan and Snyder<sup>2</sup> to produce eggs which are "numerous, of moderate size, similar to those of ordinary fishes". Very little is known about the *Leptocephalus* stages of this family, especially as compared with the Muraenidae, Leptocephalidae (Congers), and some of the deep-sea eels. It is possible that the Ophichthyidae are inshore breeders and that there is not a long period spent in the *Leptocephalus* stage. The adults are strikingly coloured, like banded sea-snakes, and different genera have developed very similar patterns, suggesting mimicry. The Ophichthyidae should probably be far removed in classification from the true eels like Anguillidae. Some extraordinary features of the Ophichthyidae have been noted by Deraniyagala,<sup>3</sup> who observed the breeding habit of *Leiuranus*, where the male gripped the swimming female in his jaws for hours before fertilization of the eggs took place. The same investigator<sup>4</sup> noted that *Ophichthus apicalis* selects the urogenital passages of large percoid fishes as a hiding place for part of its life. Thus any data concerning the young or the life-history of these fishes are of zoological interest.

#### Family LEPTOCEPHALIDAE.

##### *Facciolella*, gen. nov.

*Nettastomella* Facciola, Bolletino della Società Zoologica Italiana (3), iii, 1914, p. 47. Haplotype, *N. physonima* Facciola. Name preoccupied by *Nettastomella* Carpenter, Proc. Zool. Soc. Lond., 1865 (June 13, 1865), p. 202, a genus of Mollusca.

<sup>1</sup> Eigenmann and Kennedy.—Bull. U.S. Fish. Comm., xxi, 1901 (1902), p. 83.

<sup>2</sup> Jordan and Snyder.—Proc. U.S. Nat. Mus., xxiii, 1901, p. 863.

<sup>3</sup> Deraniyagala.—Spolia Zeylanica, xvi, 1, Sept. 8, 1930, p. 107.

<sup>4</sup> Deraniyagala.—Spolia Zeylanica, xvi, 3, March 18, 1932, p. 355.

This genus of eels has been given a preoccupied name and is accordingly renamed as above, with *Facciotella physonima* (Facciola) as orthotype.

Family ATHERINIDAE.

Genus *Pranesus* Whitley, 1930.

*Pranesus endrachtensis* (Quoy and Gaimard).

*Atherina endrachtensis* Quoy and Gaimard, Voy. Uranie Zool., 1825, p. 334. Shark's Bay, Western Australia.

D.vi/9 in larger specimen (10 in smaller specimen); A.i/12 (13 in smaller); P.15. Sc.40 (41). Tr.6. 17 predorsal scales.

Head (28 mm.) 3.5, depth (25) subequal to pectorals (25) 4 in standard length (100). Eye (10) 2.8, snout (7) 4 in head. Interorbital (11.5) wider than eye.

Breadth 15 mm. at level of pectorals. Head scaly, except anteriorly, and without spines. Eye large. Mucus pores cavernous, especially on top of head. Premaxillaries not dilated posteriorly. Premaxillary process short, about  $\frac{1}{2}$  diameter of eye. Maxillary reaching level of anterior third of eye. Rami of mandibles not elevated inside mouth. Tiny villiform teeth in jaws and on vomer. Gill-rakers slender, numerous.

Body elongate, robust, wholly scaly. Anus situated between tips of adpressed ventrals; these tips do not quite reach level of origin of first dorsal fin.

First dorsal origin nearer root of tail than snout. Anterior rays of fins longest. Anal origin opposite dorsal interspace. Anal base equal to its distance from first caudal rays. Pectorals lateral, dusky towards tip. Ventral origin not far behind level of that of pectoral. Caudal strongly forked.

Colour yellowish with the back-scales darkly stippled and greenish. A broad silvery to greyish lateral stripe. Front of head and a blotch near pectoral tip dusky.

*Loc.*—Swan River estuary (marine), Western Australia. Presented by Dr. D. L. Serventy. Two specimens in Austr. Mus., IA.7187-8.

Family MELANOTAENIIDAE.

Genus *Aidaprora* Whitley, 1935.

*Aidaprora carteri* Whitley.

(Plate xxi.)

*Aidaprora carteri* Whitley, Rec. Austr. Mus., xix, Sept. 19, 1935, p. 224. Flinders River and adjacent pools near Hughenden and Richmond, Central Queensland. Types in Australian Museum, Sydney.

Mr. A. K. Carter, after whom this hitherto unfigured species was named, has made the very beautiful and accurate drawings, which are here reproduced, from male and female paratypes (Austr. Mus. Regd. Nos. I.13092 and 13096).

I venture to predict that this striking freshwater fish may one day be at least as popular amongst aquarists as the ordinary 'Sunfish' or Australian Rainbow-fish (*Melanotaenia*).

## Family PLATYCEPHALIDAE.

Genus *Trudis* Whitley, 1931.*Trudis bassensis westraliae*, subsp. nov.

*Platycephalus bassensis* of Western Australian records, not strictly *P. bassensis* Cuvier and Valenciennes, Hist. Nat. Poiss., iv, Nov., 1829, p. 247, from Westernport, Victoria.

On comparing two small Western Australian specimens sent by Dr. D. L. Serventy with true *bassensis* in the Australian Museum, I note that the western specimens have about 85 scales along the lateral line, the occipital ridges prominent above the skin, the eye one-fifth length of head, and the black blotch on the caudal fin reaching forward almost to caudal root, rather as in *Platycephalus arenarius* Ogilby.

Specimens of *bassensis* have nearly all the occipital ridges obsolete or buried under the skin, the eye in young specimens of comparable size goes less than 4 into the head (5 times in adults) and thus the eyes of the Western Australian specimens are comparatively much smaller. Ogilby's type of *P. arenarius* has eyes more than 7 in head, maxillary extending further back, and is more finely spotted.

In view of the above distinctions, I provide a new subspecific name for the Western Australian fish.

*Loc.*—Swan River estuary (marine), Western Australia; Dr. D. L. Serventy.

Holotype (IA7189) and paratype (IA.7190) of the subspecies in the Australian Museum.

Included amongst some fishes which Dr. Serventy submitted for identification are several which constitute new records for Western Australia, thus:

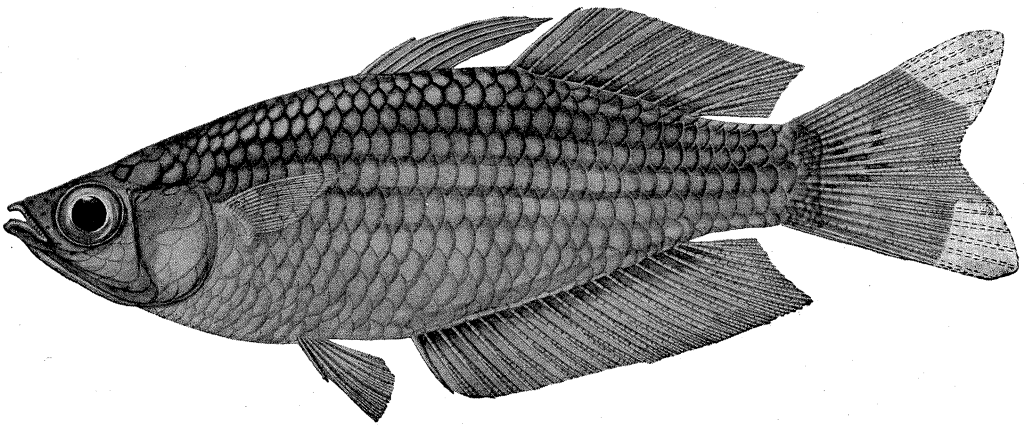
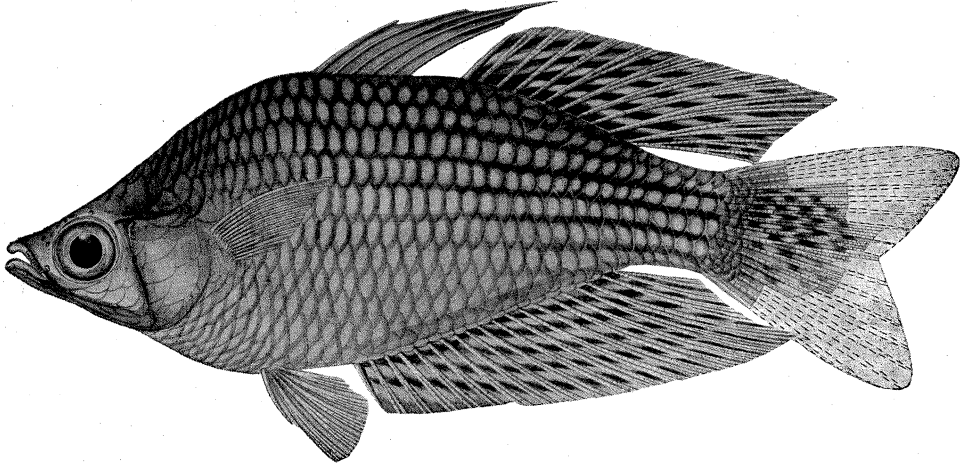
<i>Austr.</i> <i>Mus.</i> <i>Regd. No.</i>	<i>Name.</i>	<i>Locality.</i>
IA.7192.	<i>Arenigobius bifrenatus</i> (Kner.).	Swan River estuary (marine).
IA.7203.	<i>Arenigobius bifrenatus</i> (Kner.).	From stomach of cormorant, <i>Phalacrocorax varius</i> .
IA.7193.	<i>Stolephorus robustus</i> (Ogilby).	Fremantle.
IA.7197.	<i>Paraplotosus albilabris</i> (Cuv. and Val.).	Fremantle.
IA.7201.	<i>Maxillicosta scabriceps</i> Whitley.	Fremantle.

## EXPLANATION OF PLATE XXI.

*Aidaprora carteri* Whitley.

Upper figure: male paratype (Austr. Mus. Regd. No. I.13092), 61 mm. in standard length.

Lower figure: female paratype (I.13096), 66 mm. in standard length. Both from Hughenden district, Central Queensland.



A. K. CARTER, *del.*