

TWO NEW FLATFISHES FROM THE INDO-AUSTRALIAN
ARCHIPELAGO, WITH A SYNOPSIS OF THE SPECIES OF
THE GENERA *POECILOPSETTA* AND *NEMATOPS*.

By

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Through the kindness of Dr. J. D. F. HARDENBERG I have recently examined an extensive series of Flatfishes (Heterosomata) preserved in the Laboratorium voor het Onderzoek der Zee, Batavia. These include a number of specimens trawled by the S.S. "Gier", all of which had been previously studied by WEBER and BEAUFORT in connection with their work on the Indo-Australian fishes. In addition, there are a few obtained during Dr. MORTENSEN'S expedition to the Bali Sea, and other examples collected by Dr. HARDENBERG in the fish markets of Java and Sumatra. The collection includes examples of two species apparently new to science, which are described below, and I am greatly indebted to Professor DELSMAN for permission to retain the holotypes of these species for the British Museum. The description of the specimen of *Nematops* has led me to undertake a revision of this genus, and of the allied genus *Poecilopsetta*, the results of which are embodied in this paper in the form of a brief synopsis.

My thanks are due and are gratefully tendered to Dr. HARDENBERG, not only for the opportunity of studying this interesting collection, but also for allowing me to retain a large number of the specimens for the British Museum.

The illustrations for this paper have been prepared by Lt.-Col. W. P. C. TENISON, D.S.O.

1. DESCRIPTIONS OF NEW SPECIES.

Nematops macrochirus (Pleuronectidae).

Depth of body nearly 3 in the length, length of head $4\frac{1}{3}$. Snout much shorter than eye, diameter of which is about $2\frac{1}{4}$ in length of head; eyes almost contiguous, their anterior margins about level; upper eye entering dorsal profile of head; each eye with a short tentacle. Maxillary extending to below anterior margin of eye, length about 3 in that of head; lower jaw not projecting, an inconspicuous knob at the symphysis, length $2\frac{1}{4}$ in head. Teeth in villiform bands, rather better developed on blind side of jaws. Gill-rakers of moderate length, slender; 10 on lower part of anterior arch. Scales of ocular side ctenoid,

those of blind side cycloid; 68 in lateral line. Lateral line absent on blind side of body. Dorsal 65; commencing a little behind middle of upper eye; longest rays about $\frac{1}{2}$ as long as head. Anal 55. Right pectoral with 7 rays, all more or less branched, length a little greater than that of head; left pectoral very much smaller. Pelvics subequal, that of right side a little in advance and nearer median line than that of left side. Caudal with 18 rays; pointed. Caudal peduncle short, its depth about $\frac{1}{2}$ length of head. Brownish; some small dark spots and streaks on dorsal and anal fins; a dusky blotch on basal part of caudal; right pectoral dusky, with an indistinct darker blotch distally.

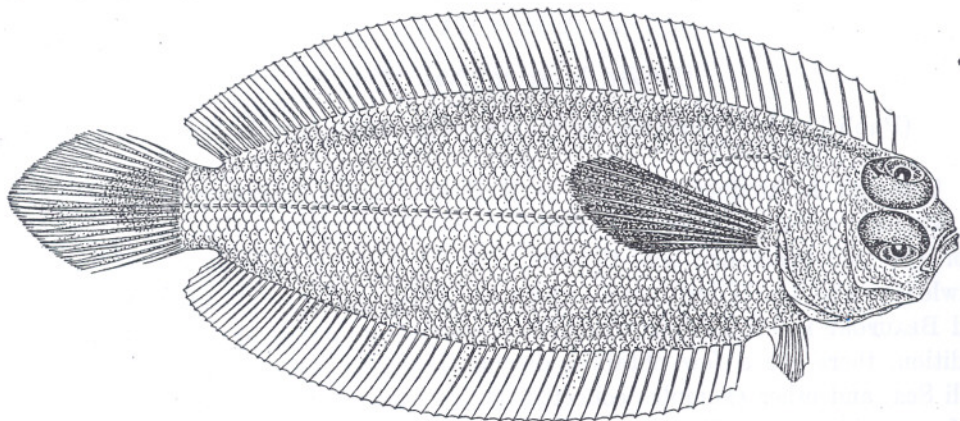


Fig. 1. *Nematops macrochirus*.

Bali Strait ($8^{\circ} 29' S$, $114^{\circ} 40' E$), 200 m. Trawl. April 15th, 1929. Coll. MORTENSEN (HARDENBERG).

Described from a single specimen, 106 mm in total length. Holotype — B. M. Reg. No. 1931. 7. 23. 1.

Differing from both the known species in the slender body and large pectoral fin.

Cynoglossus (Areliscus) hardenbergi (Cynoglossidae).

Depth of body about $3\frac{1}{2}$ in the length (nearly 4 measured on blind side), length of head $4\frac{1}{2}$. Snout obtusely pointed, length about $2\frac{2}{5}$ in head; rostral hook of moderate length, its posterior edge $4\frac{1}{3}$ in head; extending to a little beyond middle of eye; interorbital width less than diameter of eye, which is 10 in length of head; upper eye in advance of lower; angle of mouth below posterior part of eye, about equidistant from gill-opening and end of snout. A simple nostril between the eyes and a tubular one in front of the lower eye. Dorsal 98. Anal 77. Scales of both sides of body ctenoid; about 80 in a longitudinal series from above gill-opening to base of caudal fin; three lateral lines on ocular side, the upper and middle separated by 16 or 17 series of scales (counted at about middle of fish), the middle and lower by 16; no lateral line on blind side. Yellowish brown, with traces of fine dark longitudinal lines running along the series of scales.

Palembang Fish Market, Sumatra. Coll. HARDENBERG.

Described from a single specimen, 233 mm in total length. Holotype — B. M. Reg. No. 1931. 4. 23.54.

Closely related to *C. feldmanni* (BLEEKER), differing in the larger scales, longer and more pointed rostral hook, etc.

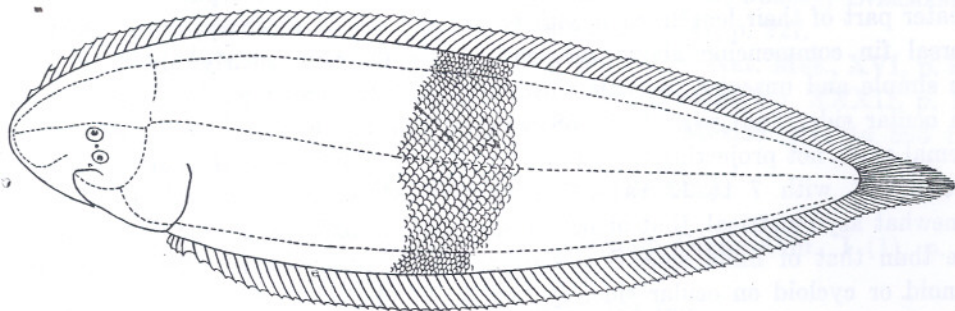


Fig. 2. *Cynoglossus hardenbergi*.

2. SYNOPSIS OF THE GENERA POECILOPSETTA AND NEMATOPS.

The subfamily Pleuronectinae, as defined by REGAN *), includes a large number of genera and species from Arctic and northern seas, with three genera from deep water in the warmer parts of the Atlantic and the Indo-Pacific. These last are all fishes of small size and rather fragile appearance, and may be readily distinguished from their northern relatives by the absence of the lateral line on the blind side of the body. The three genera may be distinguished as follows:—

- I. Anterior rays of dorsal and right pelvic more or less prolonged in both sexes, very long in the male; male with strong rostral spines, and with the teeth on ocular side of upper jaw extending on to the outer surface of the jaw. 1. *Marleyella*. †
- II. None of the anterior rays of dorsal or right pelvic prolonged; males similar to females.
 - A. No orbital tentacles. 2. *Poecilopsetta*.
 - B. Each eye with a tentacle. 3. *Nematops*.

POECILOPSETTA, GÜNTHER.

Poecilopsetta, GÜNTHER, 1880, Shore Fishes 'Challenger', p. 48; HUBBS, 1919, Proc. Biol. Soc. Washington, XXXII, p. 163.

Boopsetta, ALCOCK, 1896, J. Asiat. Soc. Bengal, LXV (2), p. 305; 1899, Cat. Indian Deep-Sea Fish., p. 126.

Alaeops, JORDAN & STARKS, 1904, Bull. U.S. Comm. Fish. Washington, XXII, (1902), p. 623.

Paralimada, BREDER, 1927, Bull. Bingham Ocean. Coll., I (1), p. 86.

† FOWLER, 1926. — Genotype: *Poecilopsetta bicolorata*, VON BONDE.

* REGAN, 1910, Ann. Mag. Nat. Hist., (8) VI, p. 484.

Body ovate or rather elongate, strongly compressed. Eyes on the right side, contiguous or separated by a very narrow space. Mouth rather small, nearly symmetrical, the length of the maxillary $2\frac{2}{3}$ to $3\frac{3}{4}$ in that of head; teeth small, villiform, in one or two rows or in narrow bands in the jaws; better developed on blind side of jaws; palate toothless. Gill-rakers rather short, pointed, few in number; lower pharyngeals rather narrow, separated for the greater part of their length, each with two or three rows of sharp, jointed teeth. Dorsal fin commencing above eye, with 56 to 68 rays, nearly all of which are simple and unscaled; a scale sheath covering the basal part of the fin on the ocular side. Anal with 45 to 58 rays, similar to dorsal; tip of first interhaemal spine not projecting in front of fin. Pectoral fins unequal, that of ocular side larger, with 7 to 12 rays. Pelvics 6-rayed, short-based, subequal, but somewhat asymmetrical, that of ocular side more anterior and closer to median line than that of blind side. Scales of moderate or small size; rather feebly ctenoid or cycloid on ocular side, cycloid on blind side; lateral line developed only on ocular side, extending on to the caudal fin, with a large, flat-topped arch above the pectoral fin; no accessory branches. Vent nearly median in position.

Seven species from deep water in the Atlantic and Indo-Pacific.

Key to the Species.

- I. Teeth in one or two rows; length of maxillary less than 3 in that of head *) (Atlantic species).
 - A. Scales ctenoid on ocular side; about 80 in lateral line; dorsal 63 to 68; anal 54 to 56. **1. beanii.**
 - B. Scales cycloid on ocular side; about 63 in lateral line; dorsal 62; anal 53. **2. inermis.**
- II. Teeth in narrow bands (at least in adults); length of maxillary 3 to $3\frac{3}{4}$ in that of head (Indo-Pacific species).
 - A. 90 to 95 scales in the lateral line.
 1. Depth $1\frac{9}{10}$ to $2\frac{1}{5}$ in length; maxillary 3 to $3\frac{1}{2}$ in head; eyes separated by a low narrow ridge.
 - a. Dorsal 56 to 61; anal 46 to 50; some of the middle rays of right pectoral branched. **3. colorata.**
 - b. Dorsal 62 to 67; anal 53 to 58; all the rays or right pectoral simple. **4. hawaiiensis.**
 2. Depth $2\frac{2}{3}$ to 3 in length; maxillary $3\frac{3}{5}$ to $3\frac{3}{4}$ in head; eyes contiguous; dorsal 59 to 65; anal 50 to 54. **5. praelonga.**
 - B. 60 to 70 scales in lateral line.
 1. Eye about $3\frac{1}{4}$ in head; 60 to 65 scales in lateral line; dorsal 60 to 64; anal 48 to 53. **6. plinthus.**
 2. Eye $2\frac{1}{3}$ in head; about 70 scales in lateral line; dorsal 62; anal 54. **7. natalensis.**

* Not verified in *P. inermis*.

1. *Poecilopsetta beanii* (GOODE).

Limanda beanii, GOODE, 1881, Proc. U. S. Nat. Mus., III, (1880), p. 473; JORDAN & GOSS, 1889, Rep. U. S. Com. Fish. Washington, XIV, (1886), p. 288; GOODE & BEAN, 1895, Ocean. Ichth., p. 428, pl. CII figs. 355 a-d; JORDAN & EVERMANN, 1898, Bull. U.S. Nat. Mus., XLVII (3), p. 2646, fig. 932; JORDAN, EVERMANN & CLARK, 1930, Rep. U. S. Com. Fish. Washington, 1928, II, p. 227.

Pleuronectes beani, JORDAN & GILBERT, 1882, Bull. U. S. Nat. Mus., XVI, p. 835.

Poecilopsetta beanii, HUBBS, 1919, Proc. Biol. Soc. Washington, XXXII, p. 163.

Hab. Off the coast of New England; Gulf of Mexico: 111 to 896 fms.

2. *Poecilopsetta inermis* (BREder).

Paralimanda inermis, BREder, 1927, Bull. Bingham Ocean Coll., I (1), p. 87, fig. 36.

Hab. Glover Reef, off British Honduras: 484 fms.

3. *Poecilopsetta colorata*, GÜNTHER.

Poecilopsetta colorata, GÜNTHER, 1880, Shore Fishes 'Challenger', p. 48, pl. XXII fig. B; NORMAN, 1927, Rec. Ind. Mus., XXIX, p. 41; WEBER & BEAUFORT, 1929, Fish. Indo-Austral. Arch., V, p. 136.

Poecilopsetta maculosa, ALCOCK, 1894, J. Asiat. Soc. Bengal, LXIII (2), p. 130, pl. VII fig. 1; 1895, Illust. Zool. 'Investigator', Fishes, pl. XV fig. 1; 1896, J. Asiat. Soc. Bengal, LXV (2), p. 328.

Boopsetta maculosa, ALCOCK, 1899, Cat. Indian Deep-Sea Fish., p. 127.

? *Boopsetta praelonga*, BRAUER, 1906, 'Valdivia' Tiefsee-Fische, p. 295.

Boopsetta praelonga (part.), SEWELL, 1912, Rec. Ind. Mus., VII, p. 10.

Hab. Gulf of Manar; Andaman Sea; Northwest of Sumatra (?).

4. *Poecilopsetta hawaiiensis*, GILBERT.

Poecilopsetta hawaiiensis, GILBERT, 1905, Bull. U. S. Com. Fish.

Washington, XXIII (3), (1903), p. 679, pl. 95; FOWLER, 1928, Mem. B. P. Bishop Mus., X, p. 93.

Hab. Hawaiian Islands: 128 to 238 fms.

I have examined a co-type of this species, which may prove to be identical with *P. colorata*.

5. *Poecilopsetta praelonga*, ALCOCK.

Poecilopsetta praelonga, ALCOCK, 1894, J. Asiat. Soc. Bengal, LXIII (2), p. 139, pl. VII fig. 2; 1895, Illust. Zool. 'Investigator', Fishes, pl. XV fig. 2; 1896, J. Asiat. Soc. Bengal, LXV (2), p. 328; 1898, Ann. Mag. Nat. Hist., (7) II, p. 156; NORMAN, 1927, Rec. Ind. Mus., XXIX, p. 40, fig. 11.

Boopsetta umbrarum, ALCOCK, 1896, J. Asiat. Soc. Bengal, LXV (2), p. 305; 1897, Illust. Zool. 'Investigator', Fishes, pl. XVII fig. 5.

- Boopsetta praelonga*, ALCOCK, 1899, Cat. Indian Deep-Sea Fish., p. 126.
Boopsetta praeolonga (part.), SEWELL, 1912, Rec. Ind. Mus., VII, p. 10.
Boopsetta maculosa, WEBER, 1913, 'Siboga'-Exped., Fische, LVII, p. 434.
Poecilopsetta maculosa, WEBER & BEAUFORT, 1929, Fish. Indo-Austral. Arch., V, p. 137, fig. 33.

Hab. Gulf of Manar; Bay of Bengal; Andaman Sea; Ki Islands; Timor Sea.

6. *Poecilopsetta plinthus* (JORDAN & STARKS).

- Alaeops plinthus*, JORDAN & STARKS, 1904, Bull. U. S. Com. Fish. Washington, XXII, (1902), p. 623, pl. V, fig. 2; 1906, Proc. U. S. Nat. Mus. XXXI, p. 199, fig. 12; FRANZ, 1910, Abh. K. Bayer. Ak. Wiss., Suppl. IV, p. 64; JORDAN, TANAKA & SNYDER, 1913, J. Coll. Sci. Tokyo, XXXIII (1), p. 323, fig. 272.
Poecilopsetta plinthus, HUBBS, 1915, Proc. U. S. Nat. Mus., XLVIII, p. 474.

Hab. Japan.

7. *Poecilopsetta natalensis*, sp.n.

- Limanda beanii* (non GOODE), VON BONDE, 1922, Rep. Fish. Mar. Biol. Surv. S. Afr., 1921, Spec. Rep. I, p. 16; BARNARD, 1925, Ann. S. Afr. Mus., XXI, p. 395.

Hab. Off Natal: 188 fms.

Depth of body $2\frac{3}{5}$ in the length, length of head $4\frac{2}{5}$. Snout much shorter than eye, diameter of which is $2\frac{1}{3}$ in length of head; eyes almost contiguous, their anterior margins about level; upper eye entering dorsal profile of head. Maxillary extending to a little beyond anterior margin of eye, length about $3\frac{1}{2}$ in that of head; lower jaw $2\frac{3}{5}$. Teeth in narrow bands. 11 gill-rakers on lower part of anterior arch. Scales ctenoid on ocular side, cycloid on blind side; about 70 in lateral line. Dorsal 62 (?). Anal 54. Right pectoral with 10 simple rays, length twice in that of head; left pectoral with 5 or 6 rays, smaller. Caudal pointed. Caudal peduncle very short. Greyish brown, with darker patches; dorsal and anal with irregular black markings; a conspicuous black blotch at middle of upper and lower margins of caudal; right pectoral blackish distally.

Described from a single specimen (holotype), 145 mm in total length. B. M. Reg. No. 1922. 3. 27.7.

NEMATOPS, GÜNTHER.

Nematops, GÜNTHER, 1880, Shore Fish. 'Challenger', p. 57.

Very close to *Poecilopsetta*, but each eye with a tentacle.

Three species from deep water in the Indo-Australian Archipelago.

Key to the species.

- I. Depth of body $2\frac{1}{3}$ in length; eye $2\frac{2}{3}$ in head; about 66 scales in lateral line; dorsal 67; anal 55. 1. *microstoma*.
- II. Depth of body $2\frac{1}{5}$ to $2\frac{2}{5}$ in length; eye $2\frac{1}{5}$ to $2\frac{3}{10}$ in head; 44 to 48 scales in lateral line; dorsal 52 to 59; anal 45 to 48. ... 2. *grandisquama*.

III. Depth of body nearly 3 in length; eye $2\frac{1}{4}$ in head; 68 scales in lateral line; dorsal 65; anal 55. 3. **macrochirus.**

1. **Nematops microstoma**, GÜNTHER.

Nematops microstoma, GÜNTHER, 1880, Shore Fish. 'Challenger', p. 57, pl. XXIV, fig. c.

Habs. Admiralty Islands: 152 fms.

2. **Nematops grandisquama**, WEBER & BEAUFORT.

Nematops grandisquama, WEBER & BEAUFORT, 1929, Fish. Indo-Austral. Arch., V, p. 134, fig. 32.

Hab. Bali: 59 to 88 fms.

3. **Nematops macrochirus**, sp.n.

Hab. Bali Strait: 109 fms.