Family Pleuronectidae

Body dextral, usually more or less elliptical in contour. Head unsymmetrical, cranium twisted. Eyes and color-on right side (except rarely in a few genera and some reversed examples). Mouth unsymmetrical, jaws on eyed side with nearly straight outline, on blind side strongly curved. Teeth chiefly on blind side. Preopercle edge not hidden by scales. Vertical fins well separated from caudal. Anal spine usually strong. Pectorals well developed. Ventrals nearly or quite symmetrical, on eyed side not prolonged along side of abdomen.

Genus Neorhombus Castelnau

Neorhombus Castelnau, (Res. Fishes Australia) Victoria Offic. Rec. Phila. Exhib., p. 45, 1875. (Type Neorhombus unicolor Castelnau, monotypic.)

Neorhombus unicolor Castelnau

Neorhombus unicolor Castelnau, (Res. Fishes Australia) Victoria Offic. Rec. Phila. Exhib., p. 45, 1875 (type locality : Fremantle, Western Australia). McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 282, Sep. 10, 1929 (reference).

Analysis of Genera

a! Pleuronectinae. Mouth small or large, symmetrical; fin rays not extended.

b! Eyes and color on right side.

c! Gill membranes united.

d! Mouth small.

e! Each eye with a tentacle.

Nematops.

e.[2] Eyes without tentacles. Poecilopsetta.

d.[2] Mouth large.

f! Scales firm, cover upper surfaces of eyes, jaws and snout.

Lepidoblepharon.

f.[2] Scales deciduous, not covering surface of eyes, jaws or snout; vomer toothed. Brachypleura.

c.[2] Gill membranes separate.

Paralichthodes.

b.[2] Eyes and color on left side.

Brachypleurops.

a.[2] Samarinae. Mouth symmetrical, with jaws and dentition nearly equally developed on both sides; front dorsal rays greatly prolonged.

g! Dorsal and right ventral with extended rays; caudal rays simple.

Samaris.

g.[2] Dorsal and right ventral rays not greatly extended; caudal rays branched.

Samariscus.

a.[3] Rhombosoleinae. Mouth usually asymmetrical, dentition always more developed on blind side; front dorsal rays not greatly prolonged.

h! Two ventral fins.

i! Right ventral free from anal, rays 10 or 11; lateral line with slight curve anteriorly. Azygopus.

i.[2] Right ventral joined to anal.

j! Dorsal begins above eyes; snout not extended. Pelotretis.

k! Mouth visible on ocular side; none of right pectoral rays extended.

Ammotretis.

k.[2] Mouth not visible on ocular side; upper right pectoral ray filamentous.

Peltorhamphus.

h.[2] One ventral fin. Rhombosolea.

Genus Nematops Günther

Nematops Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 57, 1880. (Type Nematops microstoma Günther, monotypic.)

Eyes on right side, close together, upper encroaching upon upper profile. Each eye usually with tentacle. Mouth narrow, small. Teeth small, scarcely any on colored side. No teeth on palate. Scales moderate, ctenoid on colored or right side, cycloid on blind side. Lateral line with arch above anteriorly. Dorsal begins above eye. Pectorals equally developed. Ventrals opposite or nearly so.

East Indies and Melanesia.

Nematops grandisquama Weber and Beaufort

Nematops grandisquama Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 134, fig. 32, 1929 (type locality : St. Nickolaas Bay, Bali, 108 to 162 meters).

Nematops microstoma Günther

Nematops microstoma Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 57, pl. 24, fig. C, 1880 (type locality : Outside Nares Harbour, Admiralty Islands, 152 fathoms). —Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 413, 1905 (1906) (name). —Fowler, Mem. Bishop Mus., vol. 10, p. 92, 1928 (compiled).

Genus Poecilopsetta Günther

Poecilopsetta Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 48, 1880.

(Type Poecilopsetta colorata Günther, monotypic.)

Boopsetta Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 305, Oct. 1, 1896. (Type Boopsetta umbrarum Alcock, monotypic.)

Alaeops Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 623, 1902 (1904). (Type Alaeops plinthus Jordan and Starks, monotypic.)

Orbits large, lower little advanced, close together. Mouth moderate, rather narrow. Maxillary 1/3 length of head. Each jaw with narrow band of villiform teeth. Palate toothless. Gill membranes united below throat. Gill rakers numerous, moderate, pointed. Scales moderate or small, ctenoid, cycloid in young, somewhat caducous. Lateral line simple, arched anteriorly, upper part of arch level or horizontal. Dorsal begins above middle of eye. Caudal rounded. Paired fins well developed. Eyes and color on right side.

Poecilopsetta colorata Günther

Poecilopsetta colorata Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 48, pl. 22, fig. B, 1880 (type locality : Ki Islands, 129 fathoms); vol. 22, p. 162, 1887 (types). —Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 41, April 1927 (type of P. maculosa; Andaman Sea; 142 to 400 fathoms). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 136, 1929 (type).

Poecilopsetta maculosa Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, No. 2, p. 130, pl. 7, fig. 1, 1894 (type locality : Bengal Bay, 145 to 250 fathoms); Illustrat. Zool. Investigator, pt. 3, pl. 15, fig. 1, 1895. —Goode and Bean, Oceanic Ichth., p. 535, 1895 (name). —Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328, 1896 (

—Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 137, fig. 33, 1899 (north of Bali; Timor Sea; Ki Islands).

Boopsetta maculosa Alcock, Descr. Cat. Deep Sea Fishes Ind. Mus., p. 127, 1899 (type locality : Bengal Bay; Andaman Sea; 145 to 250 fathoms). —Weber, Siboga Exped., vol. 57, p. 434, 1913 (Ki Islands; Timor Sea; 216 to 310 meters).

Depth 2 1/6; head 3 3/4, width 3 1/8. Snout tip to lower orbit 6 1/3 in head from snout tip, 2 1/2 in lower orbit; lower orbit 3 in head from snout tip, 1/4 in advance of upper; maxillary vertical, extends 1/4 in lower orbit, expansion 5 in lower orbit, length 3 1/4 in head from snout tip; interorbital narrow, width 1/6 of lower orbit, concave. Gill rakers 6 + 13, lanceolate, 1 1/5 in gill filaments, which 3 1/2 in lower orbit.

Scales 98 in lateral line to caudal base and 10 more on latter; 39 above, 40 below. Caudal largely covered with small scales, other fins naked. Scales ctenoid on blind side, ctenoid on colored side. Scales with 4 or 5 basal radiating striae, edge scalloped; 5 to 10 short apical denticles; circuli moderate. Lateral line arched anteriorly, arch flattened above, 3 in straight section to caudal base.

D. 61, fin height 2 in total head length; A. 50, fin height 2; caudal 1 1/8, convex behind; least depth of caudal peduncle 2 1/4; pectoral 1 2/3; ventral 2 1/5.

Brown on right side, with numerous small scattered deep brown spots. Body semipellucid as held to light broadly along interradial regions. Orbits slate gray. Vertical fins brown, very narrowly all edged light or pale. Caudal behind middle with large black blotch, nearly equal to orbit, one above marginally and another similarly below. Pectoral largely blackish brown medially, paler terminally and basally. Right ventral brown edged with whitish. Left side whitish, with 4 rows of obscure dusky blotches in medial musculature. Also row of still more obscure dark blotches along dorsal and anal bases though on marginal portions on body, none on semipellucid areas. Vertical fins of left side grayish, 2 blackish marginal caudal blotches gray black. Paired fins of left side white.

Bengal Bay, Andaman Sea, East Indies, Philippines.

10068. D.5275. Malavatuan Island (N.), S.71°E., 10.75 miles (lat. 13°55'55"N., long. 120°10'15"E.), China Sea, vicinity of southern Luzon. In 117 fathoms. July 16, 1908. Length

Poecilopsetta hawaiiensis Gilbert

Poecilopsetta hawaiiensis Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 679, pl. 95, 1903 (1905) (type locality : Pailolo Channel between Molokai and Maui, 128 to 138 fathoms; Laysan; Oahu; 128 to 238 fathoms). —Fowler, Mem. Bishop Mus., vol. 10, p. 93, 1928 (copied).

Poecilopsetta plinthus (Jordan and Starks)

Alaeops plinthus Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 623, pl. 5, fig. 2, 1902 (1904) (type locality : Surguga Bay; Owari Bay); Proc. U. S. Nat. Mus., vol. 31, p. 199, fig. 12, 1906 (type). —Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 323, fig. 272 (copied), 1913 (reference). —Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 117, 1920 (Ajiro, Izu).

Poecilopsetta plinthus Tanaka, Journ. Fac. Sci. Univ. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (reference).

Poecilopsetta praelonga Alcock

Poecilopsetta praelonga Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, No. 2, p. 130, pl. 7, fig. 3, 1894 (type locality : off Colombo, 142 to 400 fathoms). Illustrat. Zool. Investigator, pt. 3, p. 15, fig. 2, 1895. —Goode and Bean, Oceanic Ichth., p. 535, 1895 (name). —Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328, 1896 ( ); Ann Mag. Nat. Hist., ser. 7, vol. 2, p. 156, 1898. —Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 40, fig. 11, 1927 (type; type of Boopsetta umbrarum; Andaman Sea).

Boopsetta umbrarum Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, No. 3, p. 305, Oct. 1, 1896 (type locality : off Colombo, 180 to 217 fathoms); Illustrat. Zool. Investigator, pt. 4, pl. 17, fig. 5, 1896.

Depth 2 2/3 to 3; head 3 3/4 to 3 4/5, width 3 to 3 3/5. Snout to lower orbit 6 1/8 to 7 in head from snout tip; lower orbit 2 2/5 to 2 7/8, nearly opposite upper orbit to 1/4 in advance; maxillary reaches 1/3 to 2/5 in lower orbit, length 3 to 3 1/8 in head from snout tip; interorbital very narrow bony frenum, 1/7 lower eye diameter. Gill rakers 8 + 9, lanceolate, short, 1 1/4 in gill filaments, which 2 1/2 in lower orbit.

Scales 89 to 91 in lateral line to caudal base and 10 to 12 more on latter; 21 or 22 above, 32 or 33 below. Fins scaleless, except caudal which nearly entirely covered with small scales. Snout and maxillary scaleless. Scales with 8 to 12 short basal radiating striae; 10 to 16 slender pointed apical denticles; circuli moderate, mostly continuous. Right scales cycloid. Arch of lateral line 2 7/8 to 3 in straight section to caudal base.

D. 60 to 62, fin height 2 to 2 2/5 in total head length; A. 50 to 52, fin height 2 1/8 to 2 1/3; caudal 1 1/10 to 1 1/6, cuneate behind; least depth of caudal peduncle 2 1/4 to 2 4/5; right pectoral 2 to 2 1/3; left pectoral 1 3/4 to 1 4/5; right ventral 2 1/5 to 2 2/5; left ventral 2 1/4 to 2 1/2.

Right side brown, variously warm brown to umber. Most examples with 6 or 7 broad dark brown to dusky transverse bands, wider than their paler interspaces and sometimes obscure or obliterated along median axis of body so body appears to have 2 rows of dark bordering blotches. Against pale interspaces may be invaded by the darker tints so that they are virtually several series of rounded variable pale spots. Dark bands often united medially and may form 4 series of markings like letter H. Dorsal and anal more brownish to dusky basally, paler to whitish terminally. Caudal pale or light basally, with transverse median row of blackish spots, sometimes fused as band, or other spots variably terminally. Pectoral neutral

black terminally, pale basally. Right ventral with some brown tints. Left paired fins white. Ground color of left side whitish. Most all examples with median muscular area of blind sides marked with 4 series of about 6 or 7 alternating dark of blackish spots. Also row along and within edges of dorsal and anal profiles of body. Dark basal or subbasal tints of vertical fins distinct.

Ceylon, Andaman Sea. An interesting species, preserved examples showing a very variable contrasted blotched appearance. When held to the light their dorsal and anal regions of the trunk and tail are seen broadly translucent, in contrast with the thicker median more solid muscular region. Norman mentions "The right pectoral is broken in all the specimens, and cannot be accurately measured" though in mine it is mostly intact and apparently little smaller than his outline figure shows.

Genus Brachypleura Günther

Brachypleura Günther, Cat. Fishes Brit. Mus., vol. 4, p. 419, 1862.

(Type Brachypleura novae-zeelandiae Günther, monotypic.)

Laiopteryx Weber, Siboga Exped., vol. 57, p. 422, 1913. (Type Brachypleura xanthosticta Alcock, monotypic.)

Eyes and color on right side, separated by bony keel. Mouth wide. Maxillary 1/2 head length. Teeth pointed, conic, curved, anterior outer ones little enlarged in both jaws, also biserial in both jaws. Vomerine teeth present. Gill membranes more or less united at throat. Gill rakers few, lanceolate. Scales moderate, deciduous, ctenoid on colored side, cycloid or nearly so on blind side. Lateral line arched over pectoral. Dorsal and anal rays simple, caudal branched. Dorsal begins on snout before eyes, front rays filamentous in males. Pectorals developed on both sides. Base of right ventral well in advance of but smaller than left one.

Brachypleura novae-zëelandiae Günther

Brachypleura novae-zeelandiae Günther, Cat. Fishes Brit. Mus., vol. 4, p. 419, 1862 (type locality : New Zealand); Rep. Voy. Challenger, vol. 1, pt. 6, p. 49, 1880 (Arafura Sea; off New Guinea; 30 to 49 fathoms). —Waite, Rec. Canterbury Mus., vol. 1, p. 26, 1907 (name). —Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 43, fig. 12, April 1927 (types; Ganjam, Gopalpur, Hughli River mouth, Bengal Bay, Andamans, Tenasserim, Maldives, 12 to 53 fathoms). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 145, fig. 37, 1929 (Java Sea, Java, Madura Strait, Saleyer, Timor Sea).

Brachypleura novae-zealandiae Fowler, Mem. Bishop Mus., vol. 10, p. 93, 1928 (on Günther).

Brachypleura xanthosticta Alcock, Journ. Asiatic Soc. Bengal, vol. 58, No. 3, p. 281, pl. 17, fig. 3, 1889 (type locality : 28 miles south west of Puri, 25 fathoms; 5 miles south of Ganjam, 25 fathoms); vol. 65, pt. 2, p. 327, 1896 ( ). Illustrat. Zool. Investigator, pt. 5, pl. 22, fig. 2, 1898. —Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 232, 1908 (Suvadiva and

Mulaku, Maldives). —Jenkins, Mem. Indian Mus., vol. 3, p. 27, 1910.

Laiopteryx xanthosticta Weber, Siboga Exped., vol. 57, p. 423, 1913

(Saleyer and Timor Sea, 18 to 73 meters).

Depth 2 1/4 to 2 2/3; head 3 1/5 to 3 1/4, width 3 2/5 to 3 1/2. Snout to lower orbit 4 to 4 1/6 in head from snout tip; lower orbit 4 to 4 1/5, 1 to 1 1/5 in snout; upper orbit 1/4 to 2/5 in advance of lower orbit; maxillary reaches 4/5 or nearly opposite hind edge of lower orbit, expansion 1 1/2 to 1 5/6 in lower orbit, length 1 4/5 to 2 in head from snout tip, strongly arched anteriorly; bony interorbital as narrow transverse keel, width 6 in lower orbit. Gill rakers 6 + 9, rather thick, lanceolate, 2 1/2 in lower orbit; gill filaments 3/4 gill rakers.

Scales 30 or 31 in lateral line to caudal base and 6 or 7 on latter; 4 above, 9 below. Snout, maxillary and mandible naked. Caudal largely covered with small scales basally, other fins naked. Scales with 10 to 14 basal radiating striae; 58 to 80 short apical denticles of which 3 series transversely; circuli very fine, more or less obsolete apically. Lateral line only on left side, arch 1 1/2 to 1 3/5 in straight section to caudal base.

D. 66 to 72, longest filamentous anterior rays 1 2/3 to 2 in total length without caudal, uniform fin height 2 1/4 to 2 3/4 in total head length; A. 45 to 49, fin height 2 1/3 to 3; caudal 1 1/8 to 1 1/6, ends in median point behind; least depth of caudal peduncle 2 2/3 to 2 3/4; pectoral 1 1/6 to 1 1/4; left pectoral 1 3/5 to 1 2/3; left ventral 2 1/8 to 2 1/6.

Largely dull brown on right side, slightly clouded darker, though most specimens without distinct markings. Vertical fins sprinkled with obscure dark specks on small spots. Orbits dark neutral gray. Left side evidently whitish.

India, Maldives, Andamans, East Indies, New Zealand. In males anterior dorsal rays prolonged as filaments. Preserved specimens are seldom with uninjured squamation and usually with uniform pale appearance. Sometimes 8 to 10 dark blotches on vertical fins may be more or less distinct.

Genus Paralichthodes Gilchrist

Paralichthodes Gilchrist, Marine Investig. South Africa, vol. 2, p. 108, 1904. (Type Paralichthodes algoensis Gilchrist, monotypic.)

Eyes on right side. No premaxillary. Mouth rather large, nearly symmetrical. Teeth small, pointed, 2 or 3 series in jaws. Palate toothless. Preopercle edge free. Olfactory laminae arranged transversely to or radiating from central axis. Gill membranes separate. Vertebrae 31, of which 21 caudal. Scales small, cycloid. Lateral line on both sides with strong anterior arch. Dorsal extends forward on snout, above nostrils on blind side, all rays articulated. Ventral rays 6, base short, fins symmetrical, right nearly median and further forward than left.

Paralichthodes algoensis Gilchrist

Paralichthodes algoensis Gilchrist, Marine Investig. South Africa, vol. 2, p. 108, pl. 8, 1904 (type locality : Alogoa Bay [Port Elizabeth]). — Regan, Ann. Natal Mus., 1908, p. 243 (Durban Bay). —Gilchrist and Thompson, Ann. South African Mus., vol. 6, pt. 3, p. 262, 1909 (Durban Beach); Ann. Durban Mus., vol. 1, pt. 4, p. 397, May 1917 (compiled).

—Thompson, Marine Biol. Rep. South Africa, vol. 4, p. 125, 1918. — Regan, Ann. Durban Mus., vol. 2, pt. 5, p. 214, 1920 (Durban; Algoa Bay).

—Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 398, June 1925 (Algoa Bay, East London, Natal, 27 to 40 fathoms).

Genus Samaris Gray

Samaris Gray, Zool. Miscellany, p. 4, 1831. (Type Samaris cristatus Gray, monotypic.)

Eyes on right side, close together. Mouth narrow. Teeth small, equal, in narrow bands in jaws. Palate toothless. Gill membranes broadly united below throat. Gill rakers rudimentary. Scales of colored side strongly ctenoid, cycloid or moderately ctenoid on blind side. Lateral line straight, not arched over pectoral. Vertical fin rays simple. Dorsal begins on snout, first rays greatly extended filaments. Only right pectoral present. Right ventral with extended rays, longer and little in advance of left one.

Samaris cacatuae Ogilby

Samaris cacatuae Ogilby, New Fishes Queensland Coast, p. 130, Dec. 20, 1910 (type locality : off Cape Gloucester, Queensland). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 280, Sep. 10, 1929 (reference).

Samaris cristatus Gray

Samaris cristatus Gray, Zool. Miscellany, p. 4, 1831 (type locality : China). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 420, 1862 (type; China Seas; China). —Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (Canton). —Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, No. 3, p. 291, pl. 17, fig. 4, 1889 (off east coast Ceylon, 34 fathoms); vol. 65, pt. 1, p. 327, 1896 (Ceylon); Illustrat. Zool. Investigator, pt. 5, pl. 23, fig. 2, 1893. —Norman, Rec. XXXXXXX Indian Mus., vol. 29, pt. 1, p. 44, April 1927 (off Colombo, south of Ceylon, Ceylon, Andamans, 3 to 34 fathoms). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 138, fig. 34, 1929 (Java Sea; Bali Strait). —Chu, Biol. Bull. St. John's Univ., No. 1, p. 92, Jan. 1931 (reference). —Chevey, Inst. Océanog. Indo Chine, 19^{e} Note, p. 28, Aug. 25, 1932 (Poulo Condore).

Depth 2 2/3; head 5, width 4. Snout tip to lower orbit 4 in head from snout tip; lower orbit 3 3/5, greater than snout, 1/4 in advance of upper; maxillary reaches 1/4 in lower orbit, expansion 3, length 2 3/4 in head from snout tip; interorbital narrow bony ridge. Gill rakers 4 + 9, short feeble papillae like flaps, barely 1/5 of gill rakers, which 2 2/5 in lower orbit.

Scales 48 in lateral line to caudal base and 5 more on latter; 20 above, 20 below. Fins scaleless, except few scales on caudal base. Muzzle and maxillary scaleless. Scales with 14 to 16 basal radiating striae; 15 or 16 apical dentical in single row, uniform; circuli fine, more or less complete. Left scales cycloid. Lateral line axial, only on right side.

D. 75, first 13 elongated or 1 1/4 in combined head and body to caudal base or 4 times total head, fin height otherwise 1 2/5; A. 55, fin height 1 1/3; least depth of caudal peduncle 1 3/4; caudal 4 3/5 in rest of fish; pectoral 3 2/5; ventral 3 1/8.

Right side drab to ecru drab, mottled with darker shades and rather scattered variable dark brown spots and specks. Four more or less distinct blotches on body above anal base and 5 along below dorsal base, with last of each at bases of last fin rays. Uppermost and lower-most anterior caudal ray with small dark brown spot. Orbits grayish. Anterior elongated dorsal rays pure white, each of longest with broad subbasal blackish brown bar. Rest of dorsal brownish with obscure dark spots basally and terminally, middle of fin pale. Anal like dorsal. Caudal with 4 or 5 irregular dark transverse bars, also each ray with obscure whitish spots. Paired fins with brown spots on rays, pectoral grayish terminally and as about 5 dark brown bars on longest ventral rays. Left side whitish, fins all grayish to pale brownish terminally, spots only showing obscurely.

India, Ceylon, Andamans, East Indies, Indo China, China.

D. 5641. Kalono Point (W.), N.61°W., 3.4 miles (lat. 4°29'24"S., long. 122°52'30"E.), Buton Strait. In 39 fathoms. December 14, 1909. Length 68 mm.

4600 [1744]. D.5480. Tacbuc Point (Leyte), S.87°W., 17.3 miles (lat. 10°44'36"N., long. 125°19'E.), between Samar and Leyte. In 62 fathoms. July 29, 1909. Length 105 mm.

Samaris macrolepis Norman

Samaris macrolepis Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 45, pl. 6, April 1927 (type locality : Gulf of Martaban).

Genus Samariscus Gilbert

Samariscus Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 682, 1903 (1905). (Type Samariscus corallinus Gilbert, monotypic.)

Eyes on right side, close together or separated by narrow scaly interspace. Mouth narrow. Teeth small, in bands in jaws. Palate toothless. Gill membranes broadly united below throat. Gill rakers rudimentary. Scales ctenoid on both sides of body. Fins scaleless. Lateral line straight, without abrupt arch above pectoral. Dorsal and anal rays simple, caudal rays branched. Dorsal begins on snout, none of rays greatly extended, although may appear somewhat longer and more distantly placed than those following. Right pectoral only developed. Right ventral longer than left, without extended rays.

Samariscus corallinus Gilbert

Samariscus corallinus Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 682, pl. 96, 1903 (1905) (type locality : off south coast of Molokai, 43 to 47 fathoms).

Samaris corallinus Fowler, Mem. Bishop Mus., vol. 10, p. 93, 1928 (Hawaiian Islands).

Samariscus huysmani Weber

Samariscus huysmani Weber, Siboga Exped., vol. 57, p. 420, pl. 6, fig. 3, 1913 (type locality : lat. 6°36!5S., long. 114°55!5E., Java Sea, 88 meters). —Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 47, April 1927 (Gulf of Martaban, 61 fathoms). —Weber and Beaufort, Fishes Indo Australian. Archip., vol. 5, p. 142, fig. 35, 1929 (type).

Samariscus inornatus (Lloyd)

Samaris inornatus Lloyd, Mem. Indian Mus., vol. 2, p. 160, pl. 47, fig. 7 to 7a, 1909 (type locality : Arabian Sea, 130 fathoms).

Samariscus inornatus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 46, April 1927 (types).

Samariscus maculatus (Günther)

Samaris maculatus Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 47, pl. 21, fig. A, 1880 (type locality : Ki Islands, 129 fathoms); vol. 22, p. 162, 1887 (Ki Islands, 140 fathoms). —Regan, F. Maldives, 277, 1902

Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 232, 1908 (Suvadiva, Maldives).

Samariscus maculatus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 47, April 1927 (Maldives). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 141, 1929 (type).

Samariscus longimanus Norman

Samariscus longimanus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 46, pl. 7, April 1927 (type locality : west of Ceylon, 102 to 105 fathoms).

Samariscus sunieri Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 141, 1929 (type locality : Nikolas Bay, Bali; north of Bali; 108 to 252 meters).

Depth 2 7/8 to 3; head 3 3/5 to 3 4/5, width 3 4/5 to 4. Snout to lower orbit 4 1/3 to 4 4/5 in head from snout tip; lower orbit 2 2/3 to 3 1/8, greatly exceeds snout, opposite or advanced 1/5 from upper orbit; maxillary reaches 1/5 to 1/4 below lower orbit, expansion 3 to 3 3/4 in lower orbit, length 2 2/3 to 2 7/8 in head from snout tip; innerorbital narrow bony keel. Gill rakers 1 + 7 short feeble rudimentary points, 2/5 of gill filaments, which 1/3 of lower orbit.

Scales 60 to 64 in lateral line to caudal base and 4 or 5 more on latter; 18 above, 19 below. Caudal base scaly, fins otherwise naked. Scales with 9 to 11 basal radiating striae, edge scalloped; 13 to 15 slender apical denticles, with 3 transverse series of basal elements; circuli fine. Lateral line axial, only on right side.

D. 67 to 70, fin height 1 1/2 to 2 in total head length; A. 53 to 55, fin height 1 2/3 to 1 7/8; least depth of caudal peduncle 1 7/8 to 2; ventral 1 1/2 to 2; caudal 3 1/3 to 3 7/8 in combined head and body to caudal base; pectoral 2 1/4 to 3 3/5.

Light brown on right side, with 5 blackish brown blotches along upper edge of body below dorsal base and 4 along lower edge of body above anal base. Obscure or paler blotches may also be present along axial region of body. Orbits dark gray or slate. Vertical fins pale or whitish, with dark or brown specks on rays, mostly terminal. Pectoral variously spotted with dark brown, sometimes largely neutral black.

Ceylon, East Indies, Philippines. Samariscus sunieri Weber and Beaufort appears to be synonymous.

4170. 4174. D.5411. Lauis Point Light, N.35°E., 4.7 miles (lat. 10°10'30"N., long. 123°51'15"E.), between Cebu and Bohol. In 1.45 fathoms. March 23, 1909. Length 9.8 mm. 2 examples.

? maybe 145 fathoms?

1 example. [1436.] D.5412. Lauis Point Light, N.21°E., 5.5 miles (lat. 10°09'15"N., long. 123°52'E.), between Cebu and Bohol. In 162 fathoms. March 23, 1909. Length 124 mm.

3331, 3333, 3334. D.5418. Lauis Point Light, N.10°E., 3.5 miles (lat. 10°10'N., long. 123°53'15"E.), between Cebu and Bohol. In 159 fathoms. March 25, 1909. Length 83 to 123 mm.

2064. D.5519. Point Fagolo Light, S.71°W., 8.7 (lat. 8°47' N., long. 123°31'15"E.), northern Mindanao. In 182 fathoms. August 9, 1909. Length 124 mm.

2086. D.5117. Sombrero Island. S.47°E., 10 miles (lat. 13° 48'45"N., long. 120°41'51"E.), Balayan Bay and Verde Island Passage. In 159 fathoms. January 21, 1908. Length 105 mm.

Genus Azygopus Norman

Azygopus Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 261, June 15, 1926. (Type Azygopus pinnifasciatus Norman,

No rostal hook. Eyes narrowly separated, upper rather close to dorsal profile. Mouth rather small, subsymmetrical. Teeth small, movable, pointed, in bands in jaws and almost entirely on blind side. Nasal organ of blind side nearer median line of head than that of ocular side, below origin of dorsal fin; olfactory laminae arranged in pinnate form, with fairly long median rachis which parallel to main axis of body. Upper angle of gill opening just above pectoral fin base. Gill rakers moderate, short. Lower pharyngeals moderately broad, curved, in contact anteriorly, each with 3 or 4 irregular series of teeth. Scales rather small, imbricated, ctenoid on both sides of body, extending over dorsal surface of eyeballs. Low scaly sheath covers basal parts of dorsal and anal on ocular side. Lateral line with slight curve anteriorly, without accessory branches. Dorsal begins just before eyes and above nasal organ of blind side, rays not scaly. Anal like dorsal, without spine. Pectoral more developed on ocular side. Two ventrals, right with 10 or 11 rays, free from anal and left with 5 or 6 rays. Caudal convex.

One species.

Azygopus pinnifasciatus Norman

Azygopus pinnifasciatus Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 262, fig. 10, June 15, 1926 (type locality : Great Australian Bight; Bass Strait; 60 to 450 fathoms). —McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 280, Sep. 10, 1929 (reference).

Genus Pelotretis Waite

Pelotretis Waite, Trans. Proc. New Zealand Inst., 1910, pt. 2, p. 50.

(Type Pelotretis flavilatus Waite, monotypic.)

No rostral hook. Eyes separated by low ridge, upper very close to dorsal profile. Mouth small, partly symmetrical. Teeth small, movable, pointed, in bands in jaws of blind side. Nasal organ of blind side almost on median line of head, just before dorsal fin origin; olfactory laminae in pinnate form, with long median rachis parallel to main axis of body. Upper angle of gill opening just above base of pectoral fin. Gill rakers few, short. Lower pharyngeals narrow, evenly curved, in contact anteriorly, each with 3 irregular series of conical teeth. Scales moderate, imbricated, ctenoid on both sides of body. Patch of small scales on dorsal surface of each eyeball. Most dorsal and anal rays scaly on both sides and low scaly sheath covers basal part of fin on eyed side. Lateral line with slight curve anteriorly, without accessory branches. Dorsal begins at level of front part of upper eye and just behind hind nostril of blind side, most rays bifid. Anal like dorsal, without spine. Caudal convex. Pectoral more developed on ocular side. Ventrals 2, right one with 7 rays and joined to anal, left with 5 or 6 rays.

One species.

Pelotretis flavilatus Waite

Pelotretis flavilatus Waite, Proc. New Zealand Inst., 1910, pt. 2, p. 50,

(type locality :); Rec. Canterbury Mus.,

vol. 1, p. 212, pl. 41, 1911 ( ). —

Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 265, June 15, 1926 (New

Zealand; Chatham Islands).

Genus Ammotretis Günther

Ammotretis Gunther, Cat. Fishes Brit. Mus., vol. 4, p. 458, 1862. (Type Ammotretis rostratus Günther, monotypic.)

Colistuim Norman, ~~Biol.~~ Biol. Res. Endeavour, vol. 5, pt. 5, p. 272, June 15, 1926. (Type Ammotretis nudipinnis Waite.

Eyes on right isde, on same level or lower rather advanced. Mouth unsymmetrical, narrower on right side than left. Left maxillary less than 3 in head. Teeth on blind side only, where in villiform band. No teeth on palate. Gill openings narrow. Gill membranes broadly united below throat. Gill rakers short, conical. Scales small, ctenoid. Lateral line straight. Dorsal and anal rays branched, scaly. Dorsal begins on end of snout and not continued to caudal. Ventrals 2, right one in same line and continuous with anal.

Australia and Tasmania.

The following name, without figure or description, has been given.

Ammotretis ovalis Saville-Kent

Ammotretis ovalis Saville-Kent, Great Barrier Reef, p. 370, 1893 (type locality; name only).

Ammotretis brevipinnis Norman

Ammotretis brevipinnis Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 268, fig. 11, July 15, 1926 (type locality : St. Vincent Gulf, South Australia). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 281, Sep. 10, 1929 (reference).

Ammotretis elongatus McCulloch

Ammotretis elongatus McCulloch, Biol. Res. Endeavour, vol. 2, pt. 3, p. 123, pl. 27, July 3, 1914 (type locality : Investigator Strait or area south of Kangaroo Island). —Waite, Rec. South Austral. Mus., vol. 2, p. 159, fig. 260, 1914 ( ); Fishes of South Australia, p. 183, fig. , 1923. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 271, June 15, 1926 (South Australia). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 281, Sep. 10, 1929 (compiled).

Ammotretis guntheri Hutton

Ammotretis guntheri Hutton, Trans. New Zealand Inst., vol. 5, p. 267, pl. 11, fig. 82a, 1872 (1873) (type locality : Wellington Harbour).

—Waite, Rec. Canterbury Mus., vol. 1, p. 26, 1907(reference); p. 211, pl. 40.

Colistium guntheri Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 274, June 15, 1926 (new Zealand).

Ammotretis macrolepis McCulloch

Ammotretis macrolepis McCulloch, Biol. Res. Endeavour, vol. 2, pt. 3, p. 125, fig. 9, July 3, 1914 (type locality : Flinders Island, Bass Strait). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 271, June 15, 1926 (compiled). —McCulloch, Mem. Austral. Mus., No. 5, pt. 2, p. 281, Sep. 10, 1929 (reference).

Ammotretis nudipinnis Waite

Ammotretis nudipinnis Waite, Trans. Proc. New Zealand Inst., 1910, pt. 2, p. 50 (type locality ; Rec. Canterbury Mus., No. 1, p. 209, pl. 39, 1911.

Colistium nudipinnis Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 273, June 15, 1926 (New Zealand).

Ammotretis rostratus (not Günther) Hutton, Trans. Proc. New Zealand Inst., vol. 8, p. 215, 1876.

Ammotretis rostratus Günther

Ammotretis rostratus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 458, 1862 (type locality : Norfolk Bay, Tasmania). —Steindachner, Sitzs. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol. 80, pt. 1, p. 171, 1879 1880). —Macleay, Proc. Linn. Soc. New South Wales, vol. 6, p. 128, 1882 ( ). —Waite, Mem. Austral. Mus., No. 4, p. 123, 1899. —Stead, Edible Fishes New South Wales, p. 103, pl. 70, 1908. —Waite, Rec. Canterbury Mus., No. 1, p. 26, 1907 (name). —McCulloch, Biol. Res. Endeavour, vol. 2, p. 121, 1914. —Waite, Rec. Canterbury Mus., vol. 2, p. 158, fig. 259, 1921 ( ). —McCulloch, Austral. Zool., vol. 2, 1921, p. 46, pl. 13. —Waite, Fishes of South Australia, p. 182, fig. 1923. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 267, June 15, 1926 (type; Southern Western Australia; South Australia; Victoria; New South Wales). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 280, Sep. 10, 1929 (compiled).

Rhombosolea tapirina (part) Günther, Cat. Fishes Brit. Mus., vol. 4, p. 459, 1862.

Ammotretis rostratus var. adspersus Kner. Reise Novara, Fische, p. 289, pl. 13, fig. 4, 1865 (type locality : Sydney).

Rhombosolea bassensis Castelnau, Proc. Zool. Acclim. Soc. Victoria, vol. 1, p. 167, July 15, 1872 (type locality : Melbourne). —Macleay, Proc. Linn. Soc. New South Wales, vol. 6, p. 132, 1882.

Peltorhamphus bassensis Waite, Rec. Austral. Mus., vol. 6, pt. 3, 1906, p. 198, pl. 34. (Melbourne markets and Queenscliff).

Solea uncinata Klunzinger, Sitzs. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol. 80, pt. 1, p. 408, 1879 (1880) (type locality : Kings George's Sound).

Ammotretis zonatus Macleay, Proc. Linn. Soc. New South Wales, vol. 7, pt. 3, p. 367, Oct. 28, 1882 (type locality : Port Jackson).

Ammotretis macleayi Ogilby, Proc. Linn. Soc. New South Wales, vol. 10, pt. 1, p. 122, June 4, 1885 (type locality : Port Jackson).

Ammotretis thompsoni (Kyle)

Apsetta thompsoni Kyle, Proc. Zool. Soc. London, 1900 (1901), p. 986, fig. 1-3

(type locality : New Zealand)

Ammotretis thompsoni Waite, Rec. Canterbury Mus., No. 1, p. 27, 1907 (name).

Ammotretis tudori McCulloch

Ammotretis tudori McCulloch, Biol. Res. Endeavour, vol. 2, pt. 2, p. 124, pl. 26, July 3, 1914 (type locality : Bass Strait, Spencer Gulf and Investigator Group). —Waite, Rec. South Austral. Mus., vol. 2, 1921, p. 159, fig. 261 ( ); Fishes of South Australia, p. 183, fig., 1923. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 270, June 15, 1926 (South Australia, Victoria, Tasmania). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 281, Sep. 10, 1929 (compiled).

?Solea liturata Richardson, Trans. Zool. Soc. London, vol. 3, pt. 2, p. 156, 1843 (type locality : no locality : hempriere [= Tasmania]).

Ammotretis liturata McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 281, Sept. 10, 1929 (reference).

Genus Peltorhamphus Günther

Peltorhamphus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 461, 1862.

(Type Peltorhamphus novae-zeelandiae Günther, monotypic.)

Rostral hook somewhat flattened, connected with head by membranous flap which nearly or quite conceals mouth on ocular side. Lower lip of ocular side entire. Teeth slender, pointed, 3 or 4 series in blind side of each jaw. Nasal organs symmetrical; olfactory laminae parallel to one another and main axis of body; no central rachis. Gill rakers moderate, small, conical. Lower pharyngeals rather narrow, scarcely expanded posteriorly, in contact anteriorly, each with several series of pointed teeth. Scales of ocular side ctenoid, of blind side ctenoid or cycloid. Low scaly sheath covers basal parts of dorsal and anal on eyed side. Lateral line with slight curve anteriorly, without accessory branches. Dorsal rays 94 to 104, front ones partly free but not serrated, remainder bifid and naked. Anal rays 60 to 70, like dorsal, without spine. Second upper ray of right pectoral prolonged into filament. Right ventral with 6 rays, left with 4 or 5.

one species.

Peltorhamphus novae-zeelandiae Günther

Peltorhamphus novae-zeelandiae Günther, Cat. Fishes Brit. Mus., vol. 4, p. 461, 1862 (type locality : New Zealand; Norfolk Island). — Waite, Rec. Canterbury Mus., vol. 1, p. 27, 1907 (name); p. 213, pl. 42. — Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 276, June 15, 1926 (types; New Zealand; Norfolk Island; Chatham Islands).

Genus Rhombosolea Günther

Rhombosolea Günther, Cat. Fishes Brit. Mus., vol. 4, p. (401) 458, 1862.

(Type Rhombosolea monopus Günther, designated by Jordan, Genera of Fishes, pt. 2, p. 319, 1919.)

Bowenia Haast, Trans. Proc. New Zealand Inst., vol. 5, p. 276, 1872 (1873).

(Type Bowenia novae-zelandiae Haast, monotypic.)

Apsetta Kyle, Proc. Zool. Soc. London, 1900, pt. 4, p. 986 (April 1, 1901).

(Type Apsetta thompsoni Kyle, monotypic.)

Snout normal or extension short and fleshy, projecting freely over mouth. Eyes separated by low ridge, lower little advanced. Mouth moderate, asymmetrical, jaws of blind side curved; upper jaw notched to receive symphysis of lower jaws. Teeth small, pointed, in bands in jaws of blind side. Nasal organ of blind side nearer median line of head than that of ocular side and below front dorsal rays; olfactory laminae parallel to one another and to main axis of body; no central rachis. Interorbital naked. Upper angle of gill opening level with pectoral base. Gill rakers moderate, slender, rather long. Lower pharyngeals moderate or rather broad, in contact anteriorly. Scales small or moderate or rather irregular, nearly all cycloid on both sides of body. Dorsal and anal naked, without basal sheaths. Lateral line rising slightly or with very low curve anteriorly and short accessory branch. Dorsal begins near snout end well before nasal organ of blind side. Anal like dorsal, without spine. Caudal convex, scales extending on both sides. Pectoral more developed on eyed side. Right ventral only normally developed, with 6 rays joined to anal.

Four species in southern Australia and New Zealand.

Rhombosolea leporina Günther

Rhombosolea leporina Günther, Cat. Fishes Brit. Mus., vol. 4, p. 460, 1862 (type locality : Australia). —Hutton, Trans. Proc. New Zealand Inst., vol. 5, 1873, p. 268, pl. 11, figs. 83a ( ). — Kner, Reise Novara, Fische, p. 287, 1865 ("Sydney"). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 283, June 15, 1926 (New Zealand). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 282, Sep. 10, 1929 (compiled).

?Bowenia novae-zelandiae Haast, Trans. Proc. New Zealand Inst., vol. 5, p. 277, pl. 16, 1873 (type locality : New Zealand).

Rhomosolea flesoides Hutton, Trans. New Zeal. Inst., vol. 8, p. 215, 1876.

Rhombosolea millari Waite, Rec. Canterbury Mus., No. 1, pt. 3, p. 205, pl. 37, June 24, 1911 (type locality : Hawke Bay, New Zealand).

Rhombosolea plebeia (Richardson)

Platessa? (Rhombus?) plebeius Richardson, Trav. New Zealand, Dieffenbach, vol. 2, p. 222, 1843 (type locality : New Zealand).

Rhombosolea plebeia Gill, Mem. Nat. Acad. Sci., vol. 6, p. 121, 1893 (reference). —Waite, Rec. Canterbury Mus., No. 1, p. 26, 1907 (name); p. 203, pl. 35, 1911 ( ); Rec. South Austral. Mus., vol. 2, p. 157, fig. 257, 1921. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 282, June 15, 1926 (New Zealand; Auckland Islands; Australia?). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 282, Sep. 10, 1929 (compiled).

Rhombosolea monopus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 459, 1862 (type locality : New Zealand; Bay of Islands; Australia). —Hutton, Cat. Fishes New Zealand, p. 51, 1872. —Hector, Cat. Fishes New Zealand, p. 117, pl. 9, 1872. —Steindachner, Sitzs. Ber. Akad. Wiss. Wien, Math-nat. Kl., vol. 80, pt. 1, p. 170, 1880 ( ). —Klunzinger, Sitzs. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol. 80, pt. 1, p. 407, 1880 ( ). —Macleay, Proc. Linn. Soc. New South Wales, ~~vol.~~ 6, p. 129, 1882.

Apsetta thompsoni Kyle, Proc. Zool. Soc. London, 1900, p. 986, figs. 1-3.

Rhombosolea retiaria Hutton

Rhombosolea retiaria Hutton, Ann. Mag. Nat. Hist., ser. 4, vol. 12, ~~1873~~ 1873, p. 401; Trans. New Zealand Inst., vol. 6, p. 107, 1874 (on Hutton). — Waite, Rec. Canterbury Mus., vol. 1, p. 27, 1907 (name); p. 207, pl. 38. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 281, June 15, 1926 (New Zealand).

Rhombosolea tapirina (not Günther) Hector, Trans. New Zealand Inst., vol. 5, p. 268, pl. 12, fig. 83b., 1873.

Rhombosolea tapirana Günther

Rhombosolea tapirana Günther, Cat. Fishes Brit. Mus., vol. 4, p. 459, 1862 (type locality : Australia; King George's Sound; Auckland Islands; Norfolk Bay, Tasmania). —Hutton, Ann. Mag. Nat. Hist., ser. 4, vol. 12, p. 401, 1873 ( ); Trans. Proc. New Zeal. Inst., vol. 6, p. 106, pl. 19, fig. 83c, 1874; vol. 8, p. 215, 1876 ( ).

—Waite, Subantarctic Is. N.Z., vol. 25, Vertebr., p. 590, 1909; ~~MAX~~ Rec. Canterbury Mus., No. 1, p. 204, pl. 36, 1911; p. 27, 1913 (name).

—Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 284, June 15, 1926 (Western Australia:, South Australia, Victoria, southern New South Wales, Tasmania, New Zealand, Auckland Islands, Campbell Island). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 282, Sep. 10, 1929 (compiled).

Rhombosolea flesoides Günther, Ann. Mag. Nat. Hist., ser. 3, vol. 11, p. 117, 1863 (type locality : Victoria). —Waite, Rec. Austral. Mus., vol. 6, pt. 3, p. 197, pl. 35, 1902 (Melbourne; Queenscliff); Rec. Canterbury Mus., No. 1, p. 27, 1907 (name). —Stead, Edible Fishes New South Wales, p. 104, 1908. —McCulloch, Austral. Zool., vol. 2, p. 46, pl. 13, 1921. —Waite, Fishes of South Australia, p. 181, 1923.

Pleuronectes? victoriae Castelnau, Proc. Zool. Acclimat. Soc. Victoria, vol. 1, p. 168, July 15, 1872 (type locality : Melbourne).

Rhombosolea victoriae Macleay, Proc. Linn. Soc. New South Wales, vol. 6, p. 133, 1881. —Waite, Rec. S. Austral. Mus., vol. 2, p. 158, 1921.

?Rhombosolea monopus (not Günther) Woodward, Western Austral. Year book, 1900-01 (1902), p. 272. —Stead, Fishes of Australia, p. 181, 1906.

Family Soleidae

Body oblong or ovate, color on right side. Eyes moderate or small, upper more or less advanced, on right side and separated by distinct bony ridge. Mouth small, more or less twisted towards blind side. Teeth little developed, in villiform band. Preopercle edge adnate, usually concealed by sking and scales. Gill opening more or less narrowed. Gill membranes adnate to shoulder girdle above. Scales usually ctenoid, rarely absent. Blind side of head usually with fringes. Lateral line straight, usually single. Pectoral small, sometimes absent. Ventrals with long bases, confluent with anal, one or both sometimes obsolete.

Small fishes of sandy bottoms, those of sufficient size valued as food.

Analysis of Genera

a! Ventrals symmetrical or largely so, largely free from anal; snout not prolonged in hook.

b! Dorsal and anal free from caudal.

c! Pectorals present on both sides.

d! Gill opening on eyed side ends opposite lower edge of lower pectoral bases.

e! Hind dorsal and anal rays short. Solea.

e^2. Hind dorsal and anal rays more or less elongate and united with caudal fin. Brachirus

d^2. Gill opening of eyed side ends opposite upper part of pectoral base.

f! Hind dorsal and anal rays connected only with caudal base; A. 78 to 82. Soleichthys.

f^2. Hind dorsal and anal rays connected with at least basal third of caudal fin; A. 56 to 71.

g! Scales ctenoid; first dorsal ray not enlarged. Zebrias.

g^2. Scales cycloid; first dorsal ray enlarged, free. Aesopia.

c^2. Pectorals absent; lateral line with more or less distinct accessory branch on blind side.

h! Ventral free from anal. Aseraggodes.

h^2. Right ventral with long base, connected with anal. Pardachirus.

b^2. Dorsal and anal confluent with caudal.

i! Pectoral present, well developed or rudimentary. Phyllichthys.

i^2. Pectoral absent. Achiroides.

a^2. Ventrals greatly asymmetrical, right one median, elongate and joined to anal; snout prolonged in hook. Heteromycterus.

Genus Solea Quensel

Solea Quensel, Kon. Vet. Akad. Nya Handl. Stockholm, vol. 27, pp. 44, 203, 1806. (Type Pluronectes solea Linnaeus, tautotypic.)

Pegusa Günther, Cat. Fishes Brit. Mus., vol. 4, pp. 462, 467, 1862. (Type Solea aurantiaca Günther, designated by Jordan, Genera of Fishes, pt. 3, p. 319, 1919.)

Microbuglossus Günther, Cat. Fishes Brit. Mus., vol. 4, pp. 462, 471, 1862. (Type Solea humilis Cantor, designated by Jordan, Genera of Fishes, pt. 3, p. 319, 1919.)

Eyes on right side. Mouth curved, asymmetrical. Minute teeth in left jaws, absent or feeble in right jaws. Nostrils of blind side not dilated. Gill membranes confluent, free from isthmus. Scales ctenoid on both sides of body. One straight axial lateral line. Scales on left side of head often partially transformed into fringed cutaneous flaps. Dorsal and anal rays simple or divided, in caudal always branched. Dorsal begins on snout. Dorsal and anal separated from caudal. Both pectorals present. Ventrals symmetrical or nearly so, not united with anal.

Eastern Atlantic, Indian and Pacific Oceans. Weber and Beaufort have placed Solea margaritifer Günther; alleged

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'Cat. Fishes Brit. Mus., vol. 4, p. 468, 1862.

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to have come from Borneo (evidently wrongly), as a synonym of the Mediterranean Solea lascaris.

Norman has examined the type of Solea indica Günther' and

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1 Cat. Fishes Brit. Mus., vol. 4, p. 474, 1862 (type locality : "Madras"). —Day, Fishes of India, pt. 3, p. 426, 1877; Fauna British India, Fishes, vol. 2, p. 446, 1889.

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found it to be a wrongly labeled example of Achirus lineatus (Linnaeus).

Solea trichodactylus (Linnaeus)

Pleuronectes trichodactylus Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 268, 1758 (type locality : Amboina); ed. 12, pt. 1, p. 455, 1766. — Bonnaterre, Tabl. Ichth., p. 73, 1788 (Amboina). —Gmelin, Syst. Nat. Linn., p. 1226, 1789. —Forster, Fauna Indica, p. 14, 1795. — Schneider, Syst. Ich. Bloch, p. 147, 1801 (Amboina). —Lacépède, Hist. Poiss., vol. 4, pp. 596, 641, 1802 (Amboina).

Solea trichodactylus Kaup, Archiv Naturges., vol. 24, pt. 1, p. 95, 1858 (Paris Museum specimen from Bengal). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 472, 1862 (compiled). —Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 17, 1866-72 (copied). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 150, 1929 (Kaup's specimen).

Monochirus trichodactylus Jouan, Mém. Soc. Sci. Nat. Chêrbourg, vol. 13, p. 274, 1867.

—Chu, Biol. Bull. St. John's Univ., Shanghai, No. 1, p. 93, Jan. 1931 (reference).

Solea irrorata Rüppell

Solea irrorata Kuhl, in Rüppell, Samml. Senckenberg. Mus., p. 19, 1852 (type locality : Java Sea). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 150, 1929 (note).

Solea elongata Day

Solea elongata Day, Fishes of India, pt. 3, p. 426, pl. 90, fig. 4, 1877 (type locality : Madras); Fauna British India, Fishes, vol. 2, p. 445, 1889. —Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 175, fig. 1a (blind side of head), July 1928 (north end of Persian Gulf; Persian Gulf; Trincomali, Ceylon).

Solea heinii Steindachner

Solea heinii Steindachner, Denks. Akad. Wiss. Wien, Math.-nat. Kl., vol. 71, p. 153, pl. 1, fig. 3, 1902 (type locality : Gischin, south Arabia). —Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 176, July 1928 (Mekran coast; type of Solea sindensis).

Solea sindensis Jenkins, Rec. Indian Mus., vol. 5, p. 133, 1910 (type locality : Karachi); Mem. Indian Mus., vol. 7, pl. 3, fig. 2, 1910.

Solea ovata Richardson

Solea ovata Richardson, Ichth. China Japan, p. 279, 1846 (type locality : China Seas; Canton). —Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1202, 1849 (1850) (Pinang Sea). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 472, 1862 (China). —Day, Fishes of India, pt. 3, p. 426, pl. 93, fig. 1, 1877 (Madras). —Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 53 (Philippines), p. 55 (off Hong Kong), 1880. —Day, Fauna British India, Fishes, vol. 2, p. 445, 1889. —Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, No. 3, p. 285, 1889 (Bengal Bay). —Seale, Philippine Journ. Sci., vol. 9, p. 78 , 1914 (Hong Kong). —Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 176, fig. 2, July 1928 (Vasco Bay and Sandy Bay, Portuguese India; Madras; Orissa). —Wu, Contrib. Biol. Lab. Sci. Soc. China, vol. 5, No. 4, p. , 1929 (Amoy). —Chu, Biol. Bull. St. John's Univ. Shanghai, No. 1, p. 92, Jan 1931 (reference).

Solea (Microbuglossus) ovata Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (Canton; Amoy).

Solea humilis Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1201,

1849 (1850) (type locality : Sea of Pinang). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 471, 1862 (type; Pinang; Bleeker's specimen). —Kner, Reise Novara, Fische, p. 2888, 1865 ("Sidney" [error]). —Bleeker, Atlas Ichth. Ind. Néerl., vol. 4, p. 16, pl. (6) 234, fig. 11 (Java; Pinang). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 148, 1929 (Java Sea; Java).

Microbuglossus humilis Jordan and Seale, Bull. Bur. Fisher., vol. 46, p. 26, 1906 (1907) (Cavite). —Jordan and Richardson, Bull. Bur. Fisher., vol. 27, p. 54, 1907 (1908) (Manila). —Seale, Philippine Journ. Sci., vol. , p. 287, 1910 (Sandakan, Borneo). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 283, Sep. 10, 1929 (reference).

Solea maculata Kuhl and Van Hasselt, in Bleeker, Naturk. Tijds. Ned. Indie, vol. 1, p. 409, 1851 (type locality : Batavia; name in synonymy).

—Kaup, Archiv Naturges., vol. 24, pt. 1, p. 95, 1858 (Java).

Depth 2 1/5 to 2 1/4; head 3 2/3 to 3 7/8, width 3 to 3 1/4. Snout end to lower orbit 3 1/5 to 3 1/4 in head; lower orbit 4 1/2 to 4 2/3, 1 1/4 to 1 1/2 in snout; upper orbit advanced 1/3 to 2/5 from lower, mouth cleft extends 2/5 to 1/2 in lower orbit, length 2 3/4 to 3 in head; nasal tube long as pupil; scaly interorbital 1 2/5 to 1 1/2 in lower orbit, concave. Gill rakers 3 + 9 short rudimentary points; gill filaments 1 1/5 in lower orbit.

Scales 88 to 90 in lateral line from above gill opening to caudal base and 7 or 8 more on latter (7 more forward to dorsal intersection); 32 above, 40 to 42 below. All scales ctenoid. Scales with 8 or 9 basal radiating striae; 9 or 10 long slender apical denticles with 4 series transversly of basal elements; circuli fine, continuous, Lateral line on both sides, continuous. Blind side of head anteriorly with many villose slender cutaneous flaps or tentacles.

D. 57 to 59, fin height 1 9/10 to 2 1/8 in head; A. 42 or 43, fin height 1 7/8 to 7; caudal 1 1/3 to 1 2/5, rounded behind; pectoral 1 4/5 to 2 1/8; ventral 2 7/8 to 3.

Right side mouse gray to drab, mottled or specked with dark brown to neutral black. Along dorsal base on body 6 or 7 gray white blotches also similar series on body above anal base. Orbits dark neutral gray. Dark or blackish specks of body extend over vertical fins. Pectoral mottled gray and darker, more or less blackish terminally. Ventral like anal. Left side whitish, dark specks on vertical fins grayish, obsolete. Left paired fins whitish.

India, Malaya, East Indies, Philippines, China.

8044 to 8046. Manila market. March 18, 1908. Length 35 to 53 mm.

6966. Manila market. April 14, 1909. Length 39 mm.

19757. Manila market. April 20, 1909. Length 50 mm.

2 examples. Manila market. April 21, 1909. Length 34 to 40 mm.

11960, 11961. Manila market. April 22, 1909. Length 43 to 48 mm.

1 example. Manila market. April 29, 1909. Length 44 mm.

20650. Manila market. June 13, 1908. Length 46 mm.

9080. Manila market. June 24, 1908. Length 49 mm.

19426. Sorsogon market. March 12, 1909. Length 71 mm.

20234. Sandakan Bay, Borneo. March 2, 1908. Length 62 to 67 mm.

Genus Brachirus Swainson

Brachirus Swainson, Nat. Hist. Animals, vol. 2, p. (187) 303, 1839. (Type, Pleuronectes orientalis Schneider, designated by Swain, Proc. Acad. Nat. Philadelphia, 1883, p. 281.)

Synaptura Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1204, 1849 (1850). (Type, Pleuronectes orientalis Schneider, virtually as Synaptura Cantor proposed to replace Brachirus Swainson.)

Solenoides Bleeker, in Kaup, Archiv Naturges., vol. 24, pt. 1, p. 97, 1858 (name in synonymy). (Type, Pleuronectes orientalis Schneider, here affixed.)

Euryglossa Kaup, Archiv Naturges., vol. 24, pt. 1, p. 99, 1858. (Type, Pleuronectes orientalis Schneider, monotypic.)

Anisochirus Günther, Cat. Fishes Brit. Mus., vol. 4, pp. 480, 486, 1862. (Type, Synaptura panoides Bleeker, Designated by Jordan, Genera of Fishes, pt. 3, p. 319, 1919.)

Eyes on right side. Mouth curved, snout often overhanging and mouth cleft forming hook. Minute teeth in jaws of left side. Front nostril of colored side at end of shorter or larger tube, posterior ones covered by flap; nostril of blind side more or less hidden by cutaneous flap. Gill membranes united, free from isthmus. Scales ctenoid on colored side, cycloid or ctenoid on blind side. Straight axial lateral line on both sides of body. Scales on left side of head often formed as cutaneous filaments. Lower lip of colored side usually fringed. Dorsal begins on snout. Dorsal and anal confluent with caudal. Rays of vertical fins simple or divided at tips. Pectoral with well developed rays, with short base and free from branchiostegal membranes; or with broad base, rudimentary rays and connection through a folded membrane with upper part of branchiostegal membranes, forming kind of funnel-like access to branchial cavity. Ventrals short, broad based, free from each other and anal; or right ventral connected with low membrane at its hind end with genital papilla or with anal.

Indian and Western Pacific Oceans, some species entering fresh water. I accept the name Brachirus Swainson for these fishes, notwithstanding the contention that Brachyurus of the same author is a name with similar meaning. It is spelled differently and therefore Brachyrus may be allowed distinct. Jordan and Goss in 1889 make the mistake of citing Pleuronectes zebra Bloch as the type of Brachirus, therefore not following Swain's designation of 1883, which they also refer to.

Brachirus lipophthalmus (Károli)

Synaptura lipophthalma Károli, Termesez. Fuzetek, Budapest, vol. 5, p. 30, 1882 (type locality : Larawak, Borneo). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 179, 1929 (copied).

The following vomina nuda, mentioned by Saville Kent, likely belong in this genus:

Synaptura armata Saville-Kent, Great Barrier Reef, p. 370, 1893 (type locality : Queensland).

Synaptura inermis Saville-Kent, Great Barrier Reef, p. 370, 1893 (type locality : Queensland).

Brachirus albomaculatus (Kaup)

Synaptura albomaculata Kaup, Archiv Naturges., vol. 24, pt. 1, p. 96, 1858 (type locality : Coromandel). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 483, 1862 (East Indies). —Day, Fishes of India, pt. 3, p. 429, pl. 93, fig. 5, 1877 (Madras); Fauna British India, Fishes, vol. 2, p. 448, fig. 161, 1889.

Brachirus albomaculatus Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 179, July 1928 (Madras, Canara, Puri, Ganjam, Sundarbans, Akyab, Coromandel, Vizagapatam). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 169, 1929 (Akyab, India), p. 430 (reference).

Brachirus aspilos (Bleeker)

Synaptura aspilos Bleeker, Naturk. Tijds. Ned. Indië, vol. 3, p. 74, 1852 (type locality : Singapore); Verh. Batavia. Genoots., No. 9, vol. 24, p. 29, 1852 (Singapore). —Kaup, Archiv Naturges., vol. 24, pt. 1, p. 97, 1858 (reference). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 482, 1862 (no. locality). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 285, Sep. 10, 1929 (Compiled.

Synaptura aspilus Weber, Siboga Exped., vol. 57, p. 440, 1913 (Salomakie). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 170, 1929 (Singapore, Dammar, Aru).

Brachirus aspilos Ogilby, Proc. Roy. Soc. Queensland, vol. 23, p. 36, 1910 (Crocker Island, North Australia). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 294, June 15, 1926 (compiled).

Synaptura marmorata Bleeker, Naturk. Tijds. Nederl. Indië vol. 5, p. 90, 1853 (type locality : Lawajóng, Solor). —Kaup, Archiv Naturgss., vol. 24, pt. 1, p. 97, 1858 (name).

Synaptura heterolepis Bleeker, Act. Soc. Sci. Ind. Néerl. (Amboina), vol. 1, p. 65, 1856 (type locality : Amboina). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 482, 1862 (Amboyna); Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 347, 1909 (New Pommerania).

Brachirus heterolepis Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 20, pl. (5) 236, fig. 2, pl. (7) 238, 1866-72 (Singapore, Solor, Batjan, Timor, Ceram, Amboina). —Fowler, Mem. Bishop Mus., vol. 10, p. 95, 1928 (compiled).

Depth 2 1/3 to 2 2/5; head 4 2/3 to 4 4/5, width 3 1/3 to 3 2/3. Snout end to lower orbit 2 3/4 to 3 in head; lower orbit 5 1/2 to 7, 1 7/8 to 2 in snout; upper orbit 1/3 to 1/2 in advance of lower; mouth cleft curved, reaches 1/3 to 2/5 in lower orbit, length from snout tip 2 3/4 to 3 in head from snout end; scaly interorbital 7 to 7 1/2, 1 1/5 to 1 1/2 in lower orbit, concave. No gill rakers; gill filaments long as lower orbit.

Scales from above gill opening 72 to 74 to caudal base (10 or 11 more tubular forward on head towards upper eye to dorsal intersection); 32 or 33 above, 37 or 38 below. Right scales ctenoid, left cycloid. Scales with 9 to 11 basal radiating striae; 7 or 8 rather long diverging apical denticles, with 2 or 3 series transversely of basal elements; circuli fine. Lateral line complete on both sides of body.

D. 64 to 68, fin height 1 4/5 to 2 1/8 in head; A. 52 to 55, fin height 1 1/2 to 1 4/5; caudal 1 1/3 to 1 3/5; right pectoral 2 1/2 to 3 1/4; right ventral 2 1/2 to 3.

Largely umber on right side, mottled with paler. Body color extends vertical fins, all of which with narrow white border formed by white tip to each ray. Oribts slate. Pectoral gray or gray white, marginally, medially blackish. Right ventral brown. Left side whitish, vertical fins blackish brown submarginally, with narrow whitish edge all around formed by white tips of rays.

Malaya, Siam, East Indies, Philippines, North Australia, Melanesia.

8410. Cebu market, Cebu. March 19, 1909. Length 298 mm.

8455. Cebu market. March 27, 1909. Length 346 mm.

21757. Cebu market, Cebu. March 28, 1909. Length 144 mm.

9315. Cebu market. August 16, 1909. Length 254 mm.

4690, 4691. Nasugbu Bay. January 16, 1908. Length 170 to 195 mm.

20698. Ulugan Bay near mouth of Baheli River, Palawan. December 28, 1908. Length 148 mm.

5106. Sandakan Bay, Borneo. March 3, 1908. Length 178 mm.

Brachirus breviceps Ogilby

Brachirus breviceps Ogilby, Proc. Roy. Soc. Queensland, vol. 23, p. 36, 1910 (type locality : Rockhampton, Queensland). —Norman, Biol. Res. Endeavour, vol. 15, pt. 5, p. 295, June 15, 1925 (compiled).

Synaptura breviceps McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 285, Sep. 10, 1929 (reference).

Brachirus callizona (Regan)

Synaptura callizona Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 57, pl. 6, fig. 2, 1903 (type locality : Arafura Sea). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 173, 1929 (Java Sea, Madura, Arafura Sea).

Brachirus cancellatus (McCulloch)

Synaptura cancellata McCulloch, Mem. Queensland Mus., vol. 5, p. 60, pl. 8, fig. 1, July 10, 1916 (type locality : near Freemantle, Western Australia); Austral. Mus. Mem., No. 5, pt. 2, p. 285, Sep. 10, 1929 (reference). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 296, June 15, 1926 (compiled).

Brachirus commersoni (Lacépède)

Pleuronecte commersonnien Lacépède, Hist. Nat. Poiss., vol. 3, pl. 12, fig. 2, 1800 (not Pleuronectes commersonii Lacépède, Hist. Nat. Poiss., vol. 4, pp. 599, 654, 1802).

Brachirus commersoni Swainson, Nat. Hist. Animals, vol. 2, p. 303, 1839 (on Jerree Potoo A. Russell, Fishes of Coromandel, vol. 1, p. 55, pl. 70,). —Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 178, July 1928 (South Canara, Madras, Akyab, Karachi).

Synaptura commersoniana Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1204, 1849 (1850) (Pinang Sea, Malay Peninsula, Singapore). — Kaup, Archiv Naturges., vol. 24, pt. 1, p. 96, 1858 (Paris Museum). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 483, 1862 (Pinang). — Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 18, pl. (4) 235, fig. 3, 1866-72 (Java, Singapore, Pinang, Borneo). —Day, Fishes of India, pt. 3, p. 428, pl. 94, fig. 1; Fauna British India, Fishes, vol. 2, p. 448, 1899. —Jenkins, Mem. Indian Mus., vol. 3, p. 29, 1910. —Weber and Beaufort, Fishes Indian Archip., vol. 5, p. 168, 1929 (Sumatra; Java).

Synaptura commersoni Jerdon, Madras Journ. Lit. Sci., vol. 17, No. 39, p. 148, 1851 (1853).

Solea russellii Bleeker, Naturk. Tijds. Ned. Indië, vol. 1, p. 401, 1851 (type locality : Batavia); Verh. Batavia. Genoot., No. 9, vol. 24, p. 15, 1852 (copied).

Synaptura russellii Bleeker, Verh. Batavia. Genoot. (Bengal. Hind.), vol. 25, p. 76, 1853 (reference).

Solea bimarginata Van Hasselt, in Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 19, 1866-72 (type locality : Pondicherry). (Name in synonymy.)

Brachirus craticulus (McCulloch)

Synaptura craticulus McCulloch, Mem. Queensland Mus., vol. 5, p. 62, pl. 9, fig. 1, July 10, 1916 (type locality : near Bowen, Queensland); Austral. Mus. Mem., vol. 5, pt. 2, p. 285, Sep. 10, 1929 (reference).

—Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 296, June 15, 1926 (reference).

Brachirus fasciatus (Macleay)

Synaptura fasciata Macleay, Proc. Linn. Soc. New South Wales, vol. 7, pt. 1, p. 14, May 23, 1882 (type locality : Port Jackson). —Ogilby, Cat. Fish. New South Wales, p. 33, 1887. —Waite, Mem. Austral. Mus., vol. 4, p. 126, pl. 31, 1899. —Stead, Edible Fish. New South Wales, p. 107, 1908. —McCulloch, Mem. Queensland Mus., vol. 5, p. 61, pl. 8, fig. 2, 1916; Austral. Zool, vol. 2, p. 46, pl. 13, 1921. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 295, June 15, 1925 (compiled). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2 p. 285, Sep. 10, 1929 (reference).

Brachirus fitzroiensis (De Vis)

Synaptura fitzroiensis De Vis, Proc. Linn. Soc. New South Wales, vol. 7, pt. 3, p. 319, Oct. 28, 1883 (type locality : Fitzroy River, Queensland); McCulloch, Mem. Austral. Mus., No. 5, pt. 2, p. 286, Sep. 10, 1929 (reference).

Brachirus macrolepis (Bleeker)

Synaptura macrolepis Bleeker, Act. Soc. Sci. Ind. Néerl. (Borneo), vol. 5, p. 7, 1858-59 (type locality : Sinkawang, Borneo). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 486, 1862 (copied). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 171, 1929 (compiled), p. 430 (reference).

Brachirus macrolepis Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 20, pl. (5) 236, fig. 3, 1866-72 (Borneo). —Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 181, ~~XX~~ pl. 4, July 1928 (orissa).

Brachirus muelleri (Steindachner)

Synaptura mülleri Steindachner, Denks. Akad. Wiss. Wien, Math.-nat, Kl., vol. 41, p. 4, 1879 (type locality : Cleveland Bay at Townsville, Queensland). —Klunzinger, Sitzs. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol. 80, pt. 1, p. 408, 1879 (1880) (Queensland). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 172, 1929 (compiled).

Synaptura muelleri McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 285, Sep. 10, 1929 (compiled).

Brachirus muelleri Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 295, June 15, 1926. (Gloucester Head; Bowen; types of Synaptura arafirensis).

Synaptura arafurensis Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 49, 1880 (type locality : Arafura Sea, 35 fathoms).

Brachirus arafurensis Fowler, Mem. Bishop Mus., vol. 10, p. 95, 1928 (compiled).

Brachirus orientalis (Schneider)

Pleuronectes orientalis Schneider, Syst. Ichth., p. 157, 1801 (type Locality : Tranquebar).

Brachirus orientalis Swainson, Nat. Hist. Animals, vol. 2, p. 303, 1839 (reference). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 293, June 15, 1926 (Australia, New South Wales, southern Queensland, Port Darwin); Record Indian Mus., vol. 30, pt. 2, p. 179, fig. 3, July 1928 (Karachi, South Canara, Canara, Quilon, Trivandrum, Malabar, Madras, Ennur backwater, Chilka Lake, Cochin, Persian Gulf, Sind, Calicut, Ceylon, Malabar). —Chu, Biol. Bull. St. John's Univ. Shanghai, No. 1, p. 93, Jan. 1931 (reference). —Chevey, Inst. Océan. Indo Chine, 19^{e} Note, p. 28, Aug. 25, 1932 (Annam).

Euryglossa orientalis Kaup, Archiv Naturges., vol. 24, pt. 1, p. 99, 1858 (Paris Museum).

Synaptura orientalis Günther, Cat. Fishes Brit. Mus., vol. 4, p. 484, 1862 (compiled). —Day, Fishes of India, pt. 3, p. 429, pl. 94, fig. 2, 1877 (Canara, Singapore); Fauna British India Fishes, vol. 2, p. 449, 1889.

Jordan and Evermann, Proc. U. S. Nat. Mus., vol 25, p. 366, 1902(Formosa).

—Jenkins, Mem. Indian Mus., vol. 3, p. 29, 1910 ( ).

—Seale, Philippine Journ. Sci., vol. 9, p. 78, 1914 (Hong Kong).

—Hora, Mem. Indian Mus., vol. 5, p. 759, 1923 (Chilka Lake); Mem. Asiatic Soc. Bengal, vol. 6, pt. 9, p. 476, 1924 (Talé Sap, Peninsular Siam). —McCulloch, Mem. Austral. Mus., No. 5, pt. 2, p. 285, Sept. 10, 1929 (compiled). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 175, 1929 (Riouw). —Tirant, Serv. Océan. Pêch. Indo Chine, 6^{e} Note, p. 172, 1929 (Hué).

Solea foliacea Richardson, Ichth. China Japan, p. 279, 1846 (type locality : coasts of China; Canton).

Synaptura foliacea Günther, Cat. Fishes Brit. Mus., vol. 4, p. 481, 1862 (China). —Day, Fishes of Malabar, p. 173, 1865. —Reeves, Journ. Pan Pac. Res. Inst., vol. 2, No. 3, p. 14, July-Sep. 1927 (name).

Brachirus foliaceus Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (reference).

Solea pan (not Buchanan-Hamilton) Bleeker, Naturk. Tijds. Nederl. Indië, vol. 1, p. 410, 1850 (1851).

Synaptura pan Bleeker, Verh. Batavia. Genoot., No. 9, vol. 24, p. 30, 1852 (Biliton). —Reeves, Journ. Pan Pac. Res. Inst., vol. 2, No. 3, p. 14, July-Sep. 1927 (Swatow).

?Solea trichodactylus (not Cuvier) Kaup, Archiv Naturges., vol. 24, pt. 1, p. 95, 1858 (type locality : Amboina [Paris Collection]).

Synaptura cinerascens Günther, Cat. Fishes Brit. Mus., vol. 4, p. 482, 1862 (type locality : Ceylon). —Day, Fishes of India, pt. 3, pl. 93, fig. 4, 1877.

Brachirus sundaicus Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 20, pl. (5) 236, fig. 4, pl. (8) 239, fig. 2, 1866-72 (type locality : Rio, Bintang; Singapore; Biliton).

Synaptura nigra Macleay, Proc. Linn. Soc. New South Wales, vol. 5, pt. 1, p. 49, Aug. 1880 (type locality : Cook's River, Botany Bay); vol. 6, 1882, p. 137. —Woods, Fish Fisher. New South Wales, p. 77, 1882. —Ogilby, Cat. Fish. New South Wales, p. 33, 1887. —Saville Kent, Proc. Roy. Soc. Queensland, vol. 6, 1889, p. 240. —Ogilby, Edible Fish. New South Wales, p. 160, pl. 39, 1893. —Waite, Mem. Austral. Mus., vol. 6, p. 125, pl. 30, 1899.

—Stead, Fishes of Australia, p. 181, pl. 6, 1906; Edible Fish. New South Wales, p. 106, pl. 73, 1908. —Ogilby, Proc. Roy. Soc. Queensland, vol. 21, p. 25, 1908. —Roughley, Fishes of Australia, p. 172, pl. 59, 1916. —McCulloch, Austral. Zoologist, vol. 2, p. 46, 1921.

Synaptura cinerea De Vis, Proc. Linn. Soc. New South Wales, vol. 8, pt. 2, p. 288, July 17, 1883 (type locality : Moreton Bay, Queensland).

Brachirus pan (Buchanan-Hamilton)

Pleuronectes pan Buchanan-Hamilton, Fishes of Ganges, pp. 130, 373, pl. 24, fig. 42, 1822 (type locality : eastern Gangetis estuaries from Dhaka downwards).

Brachirus pan Swainson, Nat. Hist. Animals, vol. 2, p. 303, 1839 (reference). —Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 21, pl. (9) 240, fig. 1, 1866-72 (Bintang, Singapore, Biliton); Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (name). —Norman, Mem. Indian Mus., vol. 30, pt. 2, p. 181, July 1928 (Calcutta, River Hughli, ~~Snatipur~~ Santipur marshes, Sundarbans, Sittang River). —Chu, Biol. Bull. St. John's Univ., Shanghai, No. 1, p. 94, Jan. 1931 (reference).

Synaptura pan Bleeker, Verh. Batavia. Genoot., No. 9, vol. 24, p. 30, 1852 (Biliton). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 481, 1862 (India). —Day, Fishes of India, pt. 3, p. 429, pl. 93, fig. ~~XXXX~~ 3, 1877 (Calcutta). —Sauvage, Bull. Soc. Philomath. Paris, ser. 7, vol. 5, p. 107, 1881 (Swatow); Fauna British India, Fishes, vol. 2, p. 449, 1889. —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 171, 1929 (Bleeker's specimen).

Pleuronectes canus Gray, Cat. Fish Gronow, p. 91, 1854 (type locality :

Mari Indico).

Brachirus panoides (Bleeker)

Synaptura panoides Bleeker, Naturk. Tijds. Nederl. Indië, vol. 2, 1851, p. 440 (type locality : Bandjermassing, Borneo); Verh. Batavia. Genoot., No. 9, vol. 24, p. 30, 1852 (Bandjermassing). —Kaup, Archiv Naturges., vol. 24, pt. 1, p. 97, 1858 (reference). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 486, 1862 (Singapore?). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 174, 1929 (Sumatra).

Brachirus panoides Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 21, pl. (8) 239, fig. 3, 1866-72 (Singapore, Sumatra, Borneo).

Brachirus pectoralis (Kaup)

Synaptura pectoralis Kaup, Archiv Naturges., vol. 24, pt. 1, p. 96, 1858 (type locality : Cape of Good Hope). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 483, 1862 (compiled).

Brachirus salinarum Ogilby

Brachirus salinarum Ogilby, Proc. Roy. Soc. Queensland, vol. 23, p. 35, 1910 (type locality : Saltpans at Kimberly, North Queensland). —

Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 294, June 15, 1926 (compiled)

Synaptura salinarum McCulloch, Mem. Queensland Mus., vol. 5, p. 64, figs. 2-3, 1916 (types); Austral Mus. Mem., No. 5, pt. 2, p. 285, Sep. 10, 1929 (reference).

Brachirus selheimi (Macleay)

Synaptura selheimi Macleay, Proc. Linn. Soc. New South Wales, vol. 7, pt. 1, p. 71, May 23, 1882 (type locality : Palmer River, Queensland). —

McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 286, Sep. 10, 1929 (reference).

Brachirus selheimi Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 294, June 15, 1926 (reference).

Brachirus setifer (Paradice)

Synaptura setifer Paradice, Mem. Queensland Mus., vol. 11, pt. 1, p. 101, fig. 3, April 28, 1927 (type locality : Port Darwin, Northern Territory).

—McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 286, Sep. 10, 1929 (reference).

Brachirus villosus (Weber)

Synaptura villosa Weber, Nova Guinea, vol. 5, pt. 2, p. 251, pl. 13, fig. 3, 1908 (type locality : Wogani River in Urama basin, south New Guinea); vol. 9, pt. 4, p. 590 (Verleten Bocht, Alkmaar, Merauke, Sabang, Lorentz River, Regen Island). —Regan, Trans. Zool. Soc. London, vol. 20, pt. 6, p. 276, 1914 (Mimika River, New Guinea). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 176, fig. 47, 1929 (Wagani, Lorentz River, Merauke).

Brachirus villosus Fowler, Mem. Bishop Mus., vol. 28, p. 95, 1928 (reference).

Genus Soleichthys Bleeker

Soleichthys Bleeker, Act. Soc. Sci. Ind. Néerl., vol. 6, p. 183, 1859.

(Type Solea heterorhinos Bleeker, monotypic.)

Front nasal tube of ocular side elongate. Gill opening of ocular side ends opposite uppart of pectoral base. Opercular membrane joined to upper part of pectoral fin. Only posterior parts of dorsal and anal fins scaly on blind side. Hind dorsal and anal rays connected only with base of caudal fin, rather long. Pectoral fins small.

Soleichthys heterorhinos (Bleeker)

Solea heterorhinos Bleeker, Act. Soc. Sci. Ind. Néerl. (Amboin.), vol. 1, p. 64, 1856 (type locality : Amboina).

Solea heterorhina Günther, Cat. Fishes Brit. Mus., vol. 4, p. 466, 1862 (no locality). —Kner, Denks. Akad. Wiss. Wien, Math.-nat. Kl., vol. 24, p. 8, pl. 3, fig. 2, 1856 (

—Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, pl. (9), 240, fig. 2, 1866-72. —Day, Fishes of India, pt. 3, p. 426, pl. 92, fig. 5, 1877 (Port Blair). —Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 36, 1880 (Ovalau, Fiji). —Day, Fauna British India, Fishes, vol. 2, p. 444, fig. 159, 1889. —Saville-Kent, Great Barrier Reef, p. 297, pl. 16, fig. 5, 1893 (Thrusday Island). —Günther, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 345, 1909 Ponapé, New Britain, Samoa, Tonga, Fiji). —Weber, Siboga Exped., vol. 57, p. 435, 1913 (Elat and Feer, High Kei). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 148, fig. 38, 1929 (Weber's material).

Solea heterorhinus Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 17, 1866-72 (Celebes, Amboina, Timor).

Soleichthys heterorhinos Bleeker, Act. Soc. Sci. Ind. Néerl. (Amboin.), vol. 8, p. 14, 1860 (Amboina). —Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 107, 1906 (1907) (Bacon). —McCulloch, Mem. Queensland Mus., vol. 5, p. 60, 1916 (type of Solea lineata; India). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 286, June 15, 1926 (compiled). —Fowler, Mem. Bishop Mus., vol. 10, p. 94 (compiled). —McCulloch, Mem. Austral. Mus., No. 5, pt. 2, p. 283, Sep. 10, 1929 (reference).

?Aesopia multifasciata Kaup, Archiv Naturg., vol. 24, pt. 1, p. 97, 1858 (type locality : India; through Le Sneur).

Synaptura multifasciata Günther, Cat. Fishes Brit. Mus., vol. 4, p. 485, 1862 (compiled; said to be from East Indies). —Day, Fishes of India, pt. 3, p. 430, 1877; Fauna British India, Fishes, vol. 2, p. 450, 1889.

Solea nigrostiolata Steindachner and Kner, Sitzs. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol. 61, p. 427, pl. 1, fig. 2, 1870 (type locality : Viti Levu).

Solea lineata Ramsay, Proc. Linn. Soc. New South Wales, vol. 7, pt. 4, p. 406, April 1883 (type locality : Port Stephens, New South Wales).

Soleichthys lineatus McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 283, Sep. 10, 1929 (reference).

Depth 2 4/5 to 2 7/8; head 5 1/2 to 5 2/3, width 2 1/4 to 3. Snout end to lower orbit 3 4/5 to 4 in head; lower orbit 4 4/5 to 5 1/4, 1 1/8 to 1 1/4 in snout, opposite to 1/4 in advance of upper orbit; mouth cleft reaches 1/4 to 1/3 in lower orbit, length 3 to 3 1/4 in head; nasal tentacle 1 1/4 times lower orbit; scaly interorbital 2 1/2 to 3 in lower orbit. Gill rakers as few very minute rudimentary papillae; gill filaments long as lower orbit.

Scales 88 to 90 in lateral line from above gill opening to caudal base and 7 or 8 more on latter (7 more forward on head to dorsal intersection); 22 or 23 above, 35 to 37 below. Scales all ctenoid. Scales with 5 basal radiating striae; 11 or 12 rather long slender pointed apical denticles; circuli fine continuous.

D. 88 to 90, fin height 1 2/3 to 2 in head; A. 75 or 76, fin height 1 3/5 to 1 2/3; caudal 1 1/4, rounded behind; pectoral 2 1/8 to 2 1/6; ventral 2 1/4 to 2 4/5.

Ecru drab generally or right side with many variable transverse close-set darker to drab bands, often as pairs, and all with still darker narrow bordering lines. Often transverse dark bands more widened and broken or irregular towards caudal and all extending on vertical fins. Vertical fins all darker subterminally, with narrow whitish edge. Oribits grays. Left side whitish, vertical fins pale basally, subterminally blackish brown, edges whitish.

Andamans, East Indies, Philippines, Queensland, New South Wales, Melanesia, Micronesia.

~~1406~~ 1406

11567. Cubu market, Cebu. Ausust 26, 1909. Length 82 mm.

15510. Dumaca River, Luzon. February 25, 1909. Length 105 mm.

Soleichthys microcephalus (Günther)

Solea microcephala Günther, Cat. Fishes Brit. Mus., vol. 4, p. 466, 1862 (type locality : Australia; New South Wales). —Kner, Reise Novara, Fische, p. 288, 1865 ( ). —Macleay, Proc. Linn. Soc. New South Wales, vol. 6, 1882, p. 135

—Ogilby, Cat. Fishes New South Wales, p. 32, 1887. —Waite, Mem. New South Wales Nat. Club, No. 2, p. 44, 1904. —Stead, Edible Fishes of New South Wales, p. 105, pl. 71, 1908. —Roughley, Fishes of Australia, p. 176, pl. 61, 1916.

Soleichthys microcephalus McCulloch, Austral. Zool., vol. 2, p. 47, pl. 13, 1921 (New South Wales). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 287, June 15, 1926 (compiled). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 283, Sep. 10, 1929 (reference).

Genus Zebrias Jordan and Snyder

Zebrias Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, p. 380, 1900.

(Type Solea zebrina Schlegel, monotypic.)

Opercular membrane joined to upper portion of pectoral. Gill opening on ocular side ending opposite upper part of pectoral base. Front nasal tube of ocular side short or moderate. Scales ctenoid. Dorsal and anal entirely scaly on blind side. Hind rays of dorsal and anal connected with at least basal third of caudal. First dorsal ray not enlarged.

Zebrias altipinnis (Alcock)

Synaptura altipinnis Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 441, 1890 (type locality : off Vizagapatam coast, in 25 fathoms), Journ. Asiatic Soc. Bengal, vol. 65, p. 329, 1896 ( ); Illustrat. Zool. Investigator, pt. 5, pl. 24, fig. 1, 1898. — Jenkins, Mem. Indian Mus., vol. 3, No. 1, p. 29, 1910. —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 178, 1929 (Java Sea; Madura), p. 430 (reference).

Zebrias altipinnis Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 184, pl. 7, July 1928 (Orissa, Ganjamk Hugli River mouth, Bengal Bay, Tenasserim, Arakan coast).

Zebrias dicholepis (Peters)

Synaptura dicholepis Peters, Monatsb. Akad. Wiss. Berlin, p. 844, 1876 (1877) (type locality : New Hanover, Bismarck Archipelago).

Zebrias dicholepis Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 413, 1905 (1906) (name).

Brachirus dicholepis Fowler, Mem. Bishop Mus., vol. 10, p. 95, 1928 (compiled).

Zebrias jerreus (Cuvier)

Pleuronectes jerreus Cuvier, Règne Animal, vol. 2, p. 343, 1829 (on Jerree potoo B. Russell, Fishes of Coromandel, vol. 1, p. 56, pl. 71, 1803; type locality : Vizagapatam).

Brachirus jerreus Swainson, Nat. Hist. Animals, vol. 2, p. 303, 1839 (reference).

Synaptura jerreus Bleeker, Verh. Batavia. Genoot. (Bengal. Hind.), vol. 25, p. 76, 1853 (reference). —Jerdon, Madras Journ. Liter. Sci., vol. , p. 148, 1851.

Synaptura quagga (not Kaup) Günther, Cat. Fishes Brit. Mus., vol. 4, p. 485, 1862 (part).

Synaptura synapturoides Jenkins, Mem. Indian Mus., vol. 3, p. 28, pl. 3, fig. 4, 1910.

Zebrias synapturoides Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 83, pl. 5, July 1928 (Ganjam, Malabar, 24 to 68 fathoms).

Zebrias quagga (Kaup)

Aesopia quagga Kaup, Archiv Naturg., vol. 24, pt. 1, p. 98, 1858 (type locality : Bombay). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 287, Sep. 10, 1929 (reference).

Synaptura quagga Günther, Cat. Fishes Brit. Mus., vol. 4, p. 485, 1862 (China); Ann. Mag. Nat. Hist., vol. 13, ser. 4, p. , 1874 (Chefoo). —Macleay, Proc. Linn. Soc. New South Wales, vol. 6, pt. 1, p. 136, 1881 (Sydney, Brisbane, Swan River). —?Nyström, Bih. Svensk. Vet. Akad. Handl. Stockholm, vol. 13, aft. 4, No. 4, p. 41, 1887 (Hagasaki, Japan). —Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 440, 1890 ( ); Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, No. 3, p. 286, 1889 (Bengal Bay); vol. 65, pt. 2, 329, 1896 ( ). —Weber and Beaufort, Fishes Indo Austral Archip., vol. 5, p. 173, 1929 (Java Sea; Madura).

Brachirus quagga Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (reference).

Zebrias quagga Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 123, 1901 (reference). —Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 493, 1915 (Hong Kong specimen). —Reeves, Journ. Pan Pac. Res. Inst., vol. 2, No. 3, p. 14, July-Sep. 1927 (Ningpo; Hong Kong). —Norman, Records Indian Mus., vol. 30, pt. 2, p. 184, pl. 6, July 1928 (Madras, Orissa, Persian Gulf, Bombay, 7 to 10 fathoms). —Chu, Biol. Bull. St John's Univ. Shanghai, No. 1, p. 93, Jan. 1931 (Chingwangtao).

Synaptura zebra (not Bloch) Day, Fishes of India, pt. 3, p. 430, pl. 94, fig. 3, 1877 (part). —Regan, Journ. Bombay Nat. Hist. Soc., vol. 16, p. 330, 1905 (Persian Gulf). —Jordan and Seale, Proc. Davenport Acad. Sci., vol. 10, p. 17, pl. 12, 1905 (1907) (Hong Kong).

Zebrias Zebra (Bloch)

Pleuronectes Zebra Bloch, Naturges. Austral Fische, vol. 3, p. 27, pl. 187, 1787 (type locality : East Indies). —Bonnaterre, Tabl. Ichth., p. 76, pl. 90, fig. 375, 1788 (East Indies). —Gmelin, Syst. Nat. Linn., pt. 1, p. 1226, 1789 (India). —Walbaum, Artedi Pisc., vol. 3, p. 114, 1792 (on Bloch). —Forster, Fauna Indica, p. 14, 1795. —Schneider, Syst. Ichth. Bloch, 1801, p. 151 (Tranquebar). —Lacépède, Hist. Nat. Poiss., vol. 4, pp. 597, 642, 1802 (East Indies). —Shaw, General Zool., vol. 4, p. 305, pl. 44, 18 ( ). —Shaw and Nodder, Naturalist's Miscell., vol. 21, p. 890, 1809 (Indian Seas). —Bennett, Life of Raffles, p. 692, 1830 (Sumatra).

Solea zebra Cuvier, Regne Animal, vol. 2, p. 223, 1817 ( ). —Bleeker, Verh. Batavia. Genoot., No. 9, vol. 24, p. 16, 1852 (Batavia). —Rutter, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. , (Swatow). —Rendahl, Archiv Zool. vol. 16, No. 2, p. , 1924 (Swatow).

Brachirus zebra Swainson, Nat. Hist. Animals, vol. 2, p. 303, 1839 (on Bloch), —Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 22, pl. (9) 240, fig. 3, 1866-72 (Java, Singapore, Pinang, Sumatra, Borneo); Nederl. Tijds. Dierk.,

vol. 4, p. 130, 1873 (1874) (Canton; Amoy); Verh. Akad. Wet. Amsterdam (Poiss. Jap.), vol. 18, p. 22, 1879 (Nagasaki, Shimoda). —Fowler, Mem. Bishop Mus., vol. 10, p. 94, 1928 (compiled).

Synaptura zebra Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 1, p. 1206, 1849 (1850) (Sea of Malay Peninsula and islands). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 484, 1862 (Amoy, China, East Indies, Pinang). —Kner, Reise Novara, Fische, p. 292, 1865 (Java). —Day, Fishes of India, pt. 3, p. 430, pl. 94, fig. 3, 1877 (type). —Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 49, 1880 (Arafura Sea, 35 to 49 fathoms). —Namiye, Class. Cat., p. 111, 1881 (Tokyo). —Day, Fauna British India, Fishes, vol. 2, p. 450, 1889. —Otaki, Journ. Fisher. Bur. Tokyo, p. 8, pl. 8, fig. 11, 1897. —Ishikawa and Matsuura, Prelim. Cat. Fishes Mus. Tokyo, p. 24, 1897. —Volz, Revue Suisse Zool., vol. 12, p. 462, 1904 ( ). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 177, 1929 (Java).

Aesopia zebra Kaup, Archiv Naturges., vol. 24, pt. 1, p. 98, 1858 (reference). —Bean and Weed, Proc. U. S. Nat. Mus., vol. 3, p. 611, 1912 (Batavia).

Zebrias zebra Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 769, 1901

(reference). —Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, p. 367, 1902 (Formosa). —Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 493, 1915 (Swatow, China). —Reeves, Journ. Pan Pac. Res. Inst., vol. 2, No. 3, p. 14, July-Sep. 1927 (Chefoo, Chinwangtao, Swatow). —Chu, Biol. Bull. St. John's Univ. Shanghai, No. 1, p. 93, Jan. 1931 (reference).

Solea zebrina Schlegel, Fauna Japonica, Poiss., pts. 10-14, p. 185, pl. 95, fig. 1, 1846 (type locality : Japan).

Zebrias zebrinus Jordan and Snyder, Annot. Zool. Jap., vol. 3, p. 123, 1901.(reference); Proc. U. S. Nat. Mus., vol. 23, p. 900, 1901 (Nagasaki). —Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 232, fig. 26, 1906 (Nagasaki, Tokyo, Kobe, Hakata). —Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 440, 1912 (Tokyo, Misaki, Kagoshima). —Jordan, Tanaka, Snyder, Journ. College Sci., vol. 33, p. 334, fig. 284, 1913 (reference). —Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 492, 1915 (Manao and Shimizu). —Izuka and Matsuura, Cat. Zool. Spect. Mus. Tokyo, Vert., p. 115, 1920 (Kochi, Tosa). —Evermann and Shaw, Proc. Cal. Acad. Sci., vol. 16, No. 4, p. 112, Jan. 31, 1927 (Chefoo). —Reeves, Journ. Pan Pac. Res. Inst.,

vol. 2, No. 3, p. 14, July-Sep. 1927 (Shangtung; Canton). —McCulloch, Austral Mus. Mem., No. 5, pt. 2, p. 287, Sep. 10, 1929 (compiled). —Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 615, 1929 (Hong Kong). —Wu, Contrib. Biol. Lab. Sci. Soc. China, vol. 5, No. 4, p. 69, fig. 56, 1929 (Amoy). —Schmidt and Lindberg, Bull. Acad. Sci. U. R. S. S., 1930, p. 1149 (Tsuruga). —Chu, Biol. Bull. St. John's Univ., No. 1, p. 93, Jan. 1931 (reference). —Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 2, p. 128, 1931 (~~Nagasaki~~ Nagasaki); Compt. Rend. Sci. U. R. S. S., 1931, p. 318 (Fusan, Korea).

Solea ommaturus Richardson, Fishes China Japan, p. 279, 1846 (type locality : coasts of China; Canton; Borneo).

Aesopia ommatura Kaup, Archiv Naturges., vol. 24, pt. 1, p. 98, 1858 (reference).

Synaptura ommatura Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 56, 1903.

Pleuronectes fasciatus Gray, Cat. Fish Gronow, p. 91, 1854 (type locality : India Orientali).

Solea fasciata Basilewsky, Nouv. Mem. Soc. Nat. Moscow, vol. 10, p. 261, 1855 (Shantung).

Zebrias fasciatus Jordan and Metz, Mem. Carnegie Mus., vol. 6, No. 1, pl. 9, fig. 2, 1913 (Fusan, Corea). —Sowerby, Natural. Manchuria, vol. 4, p. 183, 1930 (Pei Hai Ho).

Sesopia helotes Kaup, Archiv Naturges., vol. 24, pt. 1, p. 99, 1858 (on Jerree potoo B. Russell, Fishes of Coromandel, vol. 1, p. 56, pl. 71, 1803; type locality : Vizagapatam).

Aesopia japonica Bleeker, Act. Soc. Sci. Ind. Néerl. (Jap.), vol. 8, p. 71, 1860 (type locality : Nagasaki).

Synaptura japonica Günther, Cat. Fishes Brit. Mus., vol. 4, p. 485, 1862 (compiled).

Zebrias japonicus Jordan and Snyder, Annotat. Zool. Japon., vol. 3, p. 123, 1901 (Nagasaki). —Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 234, 1906 (Tokyo; Wakanoura). —Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 440, 1912 (Hakodate), p. 517 (Okinawa). —Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 355, 1913 (reference). —Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 115, 1920 (Takamatsu). —Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., Acad. Sci. U. R. S. S., 1931, p. 318 (Fusan, Korea).

Synaptura quagga (not Kaup) Rutter, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. 90 (Swatow).

Synaptura smithi Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 57, pl. 6, fig. 1, 1903 (type locality : Inland Sea of Japan).

Depth 2 7/8 to 3; head 5 3/5 to 6, width 2 4/5 to 3. Snout end to lower orbit 4 to 4 1/5 in head; lower orbit 5 to 5 1/5, 1 1/5 to 1 1/4 in snout; orbits opposite or upper 1/5 in advance; maxillary reaches 2/5 to 1/2 in lower orbit, length to snout tip 3 in head; nasal tube short, less than pupil; scaly interorbital 1 1/2 in lower orbit, concave. Gill rakers 6 or 7 short feeble rudiments; gill filaments equal lower orbit.

Scales 102 to 108 in lateral line from above gill opening to caudal base and 8 to 10 more on latter (10 more forward to dorsal intersection); 26 or 27 above, 41 to 43 below. Scales all ctenoid. Scales with 4 or 5 basal radiating striae; 7 or 8 long slender and somewhat divergent apical denticles; circuli fine, continuous. Lateral line on both sides.

D. 80 to 82, fin height 1 3/5 to 1 2/3 in head; A. 66 or 67, fin height 1 7/8 to 2; caudal 1, rounded behind; pectoral 1 1/3 to 1 2/5; ventral 2 1/3 to 2 2/5.

Right side cream buff to vinaceous buff, with 11 pairs of darker brown transverse bands, pairs variable in width, pale interspaces never quite so wide as dark bands and narrow separating pale line dividing bands of each pair. On fins bands all bent posteriorly. White ringed blackish brown ocellus on caudal base.

Orbits gray. Left side whitish, vertical fins all dark, especially terminally, cross bands obscurely showing through. Right pectoral blackish, left greatly shorter and whitish.

India, Malaya, East Indies, China, Formosa, Rui Kui, Korea, Japan.

13738. Kowloon, China, September 24, 1908. Length 105 mm.

Genus Aesopia Kaup

Sesopia Kaup, Archiv Naturges., vol. 24, pt. 1, p. 97, 1858. (Type Solea cornuta Cuvier, designated by Jordan, Genera of Fishes, pt. 2, p. 282, 1919.)

Differs from Zebrias in cycloid scales and first dorsal ray enlarged and free.

Aesopia cornuta (Cuvier)

Solea cornuta Cuvier, Regne Animal, ed. , vol. 2, p. , 18 (on Jerree potoo Russell, Fishes of Coromandel, vol. 1, p. 56, pl. 72, 1803, type locality:

Aesopia cornuta Kaup, Archiv Naturges., vol. 24, pt. 1, p. 98, 1858 (British India). —Günther, Cat. Fishes Brit. Mus., vol. 4, p. 487, 1862 (compiled). —Day, Proc. Zool. Soc. London, 1873, p. 238 ( ). —Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 235, fig. 27, 1906 (Nagasaki). —Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 441, 1912 (Kagoshima). —Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 336, fig. 285, 1913 (reference). —Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 493, 1915 (Swatow). —Regan, Ann. Durban Mus., vol. 2, p. 218, 1920 (Natal). —Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 409, June 1925 ( ). —Norman, Records Indian Mus., vol. 30, pt. 2, p. 185 , fig. 5, July 1928 (Madras, Ganjam, Orissa, Martaban, 7 to 68 fathoms). —Chu, Biol. Bull. St. John's Univ., Shanghai, No. 1, p. 93, Jan. 1931 (reference). —Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 2, p. 130, 1931 (Misaki).

Synaptura cornuta Day, Fishes of India, pt. 3, p. 430, pl. 94, fig. 4, 1877; Fauna British India, Fishes, vol. 2, p. 450, 1889. —Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, No. 3, p. 287, 1889 (Bengal Bay). —Johnstone, Ceylon Pearl Oyster Fisher., Supp. Rep. 15, p. 206, 1904. —Jenkins, Mem. Indian Mus., vol. 3, p. 29, 1910.

Synaptura potoo Bleeker, Verh. Batavia. Genoot. (Bengal. Hind.), vol. 25, p. 76, 1853 (on Jeree potoo Russell).

Synaptura quagga (not Kaup) Rutter, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. (Swatow).

Genus Aseraggodes Kaup

Aseraggodes Kaup, Archiv Naturges., vol. 24, pt. 1, p. 103, 1858. (Type Aseraggodes guttulatus Kaup, designated by Jordan, Genera of Fishes, pt. 2, p. 282, 1919.)

Liachirus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 479, 1862. (Type, Liachirus nitidus Günther, monotypic.)

Coryphillus Chabanaud, Bull. Soc. Zool. France, vol. 56, 1931, p. 302, (Type, Aseraggodes filiger Weber, monotypic.)

Body oblong. Eyes on right side. Mouth more or less restricted. Minute teeth on left rami of jaws. Front nostrils on both sides tubular; posterior right nostril slit above mouth, looking downward; left posterior nostril tubular, behind and above anterior one. Gill membranes united, free from isthmus. Scales ctenoid on both sides of body. One straight axial lateral line on each side. Left side of head more or less covered with papillae or filaments which form fringe along profile of head and opercular border. Dorsal begins on snout. Dorsal and anal rays simple or divided at tips and caudal rays branched. Dorsal and anal free from caudal. No pectorals. Ventrals symmetrical, short based, free from anal. Vent median.

Indian Ocean to Japan and Australia, one species in fresh water.

Aseraggodes abnormis (Weber and Beaufort)

Achirus abnormis Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 163, 1929 (type locality : Macassar, Celebes). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 192 (type).

Aseraggodes beauforti Chabanaud

Aseraggodes beauforti Chabanaud, Zool. Mededeelngen Leiden, vol. 13, pts. 3-4, 1930, p. 189 (type locality : Sea of Timor; on Weber); Bull. Soc. Zool. France, vol. 56, p. 300, 1931 (diagnosis in key).

Aseraggodes cyaneus (not Alcock) Weber, Siboga Exped., vol. 57, p. 435, pl. 11, fig. 3, 1913 (Timor Sea material). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 154, 1929 (Weber's material).

Aseraggodes cyaneus (Alcock)

Solea cyanea Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 439, 1890 (type locality : off Ganjam coast; Vizagapatam; 20 to 33 fathoms).

Solea (Achirus) cyanea Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 329, 1896.

Aseraggodes cyaneus Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 188, fig. 7, July 1928 (Persian Gulf; Arabian Sea; Kathiawar; Laccadive Sea; north west of Calicut; Travancore; Ganjam; Vizagapatam; Bengal Bay; Gulf of Oman; Muscat; Maldives?; 20 to 148 fathoms). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 154, 1929 (part). —Chabanaud, Zool. Mededeel., vol. 13, pts. 3-4, 1930, p. 188 (compiled); Bull. Soc. Zool. France, vol. 61, 1931, p. 300 (diagnosis in key).

Solea umbralitis Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 131, pl. 7, fig. 3, 1894 (type locality : Bengal Bay, 91 to 107 fathoms).

Solea umbratiles Goode and Bean, Oceanic Ichth., p. 536, 1895 (name).

Solea umbratilis Alcock, Illustrat. Zool. Investigator, pt. 3, pl. 15, fig. 4, 1895; Cat. Deep Sea Fishes Indian Mus., p. 129, 1899 (Bengal Bay, Arabian Sea, Malabar Coast, 68 to 148 fathoms). —Regan, Journ. Bombay Nat. Hist. Soc., vol. 16, p. 329, 1905 (Sea of Oman, 98 fathoms).

Solea (Achirus) umbratilis Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 329, 1896.

Depth 2 1/6 to 2 1/2; head 3 1/2 to 3 4/5, width 3 to 3 4/5. Snout end to lower orbit 2 3/5 to 3 in head; lower orbit 7 to 7 3/4, 2 to 2 1/3 in snout; upper 1/3 advanced from lower; maxillary extends 1/3 to 2/5 in lower orbit; mouth cleft 3 to 3 1/5 in head from snout end; nasal tube long as pupil; scaly interorbital 1 1/3 in lower orbit, concave. Gill rakers as feeble obsolete minute papillae; gill filaments 1 1/4 in lower orbit.

Scales 58 to 60 in lateral line from above gill opening to caudal base and 6 or 7 more on latter (9 forward to dorsal intersection); 22 or 23 above, 27 or 28 below. Scales all ctenoid. Scales with 28 to 30 close-set radiating basal striae; 10 or 11 rather long slender apical denticles, with 2 or 3 series basal elements; circuli fine, continuous. Right lateral line axial, complete. Left lateral line complete, distinct, also with front extension along and close below front dorsal base.

D. 73 or 74, fin height 2 1/4 to 2 3/5 in head; A. 53 or 54 , fin height 2 to 2 1/8; caudal 1 1/6 to 1 1/4, convex behind; least depth of caudal peduncle 1 7/8 to 2 1/4; ventral 2 2/5 to 2 3/5.

Ecru drab to faun color on right side, with obscure though slightly larger blotches formed more or less as darker scales around

slightly paler or lighter blotches, usually as axial row along lateral line and another series on body along submarginally to dorsal and anal fin bases. Blotches more or less as about 5 transverse series, often variable or with intermediate blotches. Orbits gray. Vertical fins with scattered small dark spots on rays, often larger and more scattered spots basally. Left side whitish, dark spots on vertical fins very obscure or indistinct.

Arabian Sea, Persina Gulf, Laccadive Sea, India, Bengal Bay, Philippines, China Sea.

2658, 2659. D.5272. Corregidor Light, N.26°E., 25.50 miles (lat. 14°N., long. 120°22'30"E.), China Sea vicinity southern Luzon. In 118 fathoms. July 14, 1908. Length 115 to 124 mm.

2492, 2494, D.5273. Corregidor Light, N.27°E., 27.25 miles (lat. 13°58'45"N., long. 120°21'35"E.), China Sea, vicinity southern Luzon. In 114, fathoms. July 14, 1908. Length 83 to 120 mm.

2690. D.5302. China Sea, vicinity Hong Kong (lat. 21°42'N., long. 114°50'E.). In 38 fathoms. August 9, 1908. Length 93 mm.

3379. D.5454. Legaspi Light, S.64°W., 5.7 miles (lat. 13°12' N., long. 123°50'30"E.), east coast of Luzon. In 153 fathoms. June 7, 1909. Length 119 mm.

1751. D.5265. Matocot Point, Luzon, S.17°E., 3.30 miles (lat. 13°41'15"N., long. 120°00'50"E.), Verde Island Passage and Batangas Bay. In 135 fathoms. June 6, 1908. Length 115 mm.

Aseraggodes dubius Weber

Aseraggodes dubius Weber, Siboga Exped., vol. 57, p. 438, fig. 82, 1913 (type locality : lat. 6°16!5S., long. 114°37'E., Java Sea, 82 meters). —Weber and Beaufort, Fishes Indo Austral Archip., vol. 5, p. 156, fig. 39, 1929 (type; Java Sea; Bali). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 189 (type); Bull. Soc. Zool. France, vol. 56, 1931, p. 300 (diagnosis in key).

Depth 2 1/5 to 2 2/3; head 3 4/5 to 4, width 2 3/4 to 3. Snout end to lower orbit 3 to 3 3/4 in head; lower orbit 5 to 6 1/2, 1 1/2 to 2 in snout; upper orbit advanced 1/2 to 3/5 from lower orbit; mouth cleft reaches 1/2 to 3/4 in lower orbit, curved, length 2 3/4 to 3 [illegible] 3/4 in head from front end of snout; interorbital narrow scaly groove, width 1/2 of lower orbit. No gill rakers; gill filaments long as lower orbit.

Scales 62 to 64 in lateral line from above gill opening to caudal base (10 to 12 more forward on head to dorsal intersection; 25 or 26 above, 27 or 28 below. Caudal scaly basally, other fins naked except scaly basal sheaths. Scales with 21 to 24 slightly radiating basal striae; 9 to 11 slender apical denticles, with 4 or 5 transverse series of basal elements; circuli fine. Lateral line continuous, present on both sides. Scales of both sides ctenoid.

D. 68 to 71, fin height 2 to 2 1/2 in head; A. 48 to 51, fin height 1 7/8 to 2 1/4; caudal 1 1/5 to 1 1/3, convex behind; least depth of caudal peduncle 2 to 2 1/5; ventral 2 2/5 to 2 1/2.

Rather pale brown on right side with traces of indistinct darker blotches along dorsal and anal edges of body, most distinct in young. Vertical fins with dark spots on rays, also most distinct in young. Orbits dark gray. Left side whitish, fins scarcely darker.

East Indies, Philippines.

20065. Batangas, Batangas River, Luzon. June 7, 1908. Length 49 mm.

2689. D.5302. China Sea, vicinity Hong Kong (lat. 21°42'N., long. 114°50'E.). In 38 fathoms. August 9, 1908. Length 84 mm.

13 examples. Davao, Mindanao. May 16, 1908, Length 52 to 62 mm.

1645. D.5266. Matocot Point, S.22°E., 7 miles (lat. 13°44'36"N., long. 120°59'15"E.), Verde Island Passage and Batangas Bay. In 100 to 135 fathoms. June 8, 1908. Length 90 mm.

1 example. D.5105. Sueste Point Light, N.57°W., 1.90 miles (lat. 14°43'55"N., long. 120°12'50"E.), China Sea off southern Luzon. In 25 fathoms. January 8, 1908. Length 67 mm.

2998. D.5376. Tayabas Light (outer), N.53°W., 18.7 miles (lat. 13°42'50"N., long. 121°51'30"E.), vicinity Marinduque Island. In 90 fathoms. March 2, 1909. Length 107 mm.

3721. D.5371. Tayabas Light (outer), N.43°W., 6 miles (lat. 13° 49'40"N., long. 121°40'15"E.), vicinity Marinduque Island. In 83 fathoms. February 24, 1909. Length 101 mm.

Aseraggodes filiger Weber

Aseraggodes filiger Weber, Siboga Exped., vol. 57, p. 436, pl. 11, fig. 4, 1913 (type locality : Buka Bay, Rotti Island, 34 meters). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 152, fig. 40, 1929 (Java Sea; type). —Chabanaud, Zool. Medeel. Leiden, vol. 13, pts. 3-4, 1930, p. 192 (type).

Aseraggodes guttulatus Kaup

Aseraggodes guttulatus Kaup, Archiv Naturges., vol. 24, pt. 1, p. 103, 1858 (type locality : no locality). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 190 (types); Bull. Soc. Zool. France, vol. 56, 1931, p. 302 (diagnosis in key).

Solea guttulata Günther, Cat. Fishes Brit. Mus., vol. 4, p. 477, 1862 (copied).

Aseraggodes hacckeanus (Steindachner)

Solea (Achirus) haackeana Steindachner, Anzeiger Ak. Wiss. Wien, vol. 20, p. 95, 1883 (type locality : South Australia); Sitzs. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol. 88, pt. 1, p. 1104, pl. 1, fig. 3, 1884.

Aseraggodes haackeana McCulloch, Mem. Queensland Mus., vol. 5, p. 59, 1916. —Waite, Rec. South Austral. Mus., vol. 2, p. 160, fig. 262, 1921; Fishes of South Austral., p. 184, fig. , 1923. —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 190 (compiled); Bull. Soc. Zool. France, vol. 56, p. 291, 1931 (diagnosis in key).

Aseraggodes haackeanus Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 289, June 15, 1926 (compiled). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 283, Sep. 10, 1929 (compiled).

Solea (Aseraggodes) textilis Ramsay and Ogilby, Proc. Linn. Soc. New South Wales, ser. 2, vol. 1, pt. 1, p. 6, May 25, 1886 (type locality : St. Vincent Gulf, South Australia, 12 fathoms).

Aseraggodes jaubertensis (Rendahl)

Achirus jaubertensis Rendahl, Kon. Svensk. Vet. Akad. Handl. Stockholm, vol. 61, No. 9, p. 16, 1921 (type locality : Cape Jaubert, North West Australia).

Aseraggodes jaubertensis Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 292, June 15, 1926 (reference). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 284, Sep. 10, 1929 (compiled).

Aseraggodes kaianus (Gunther)

Solea kaiana Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 49, pl. 21, fig. C, 1880 (type locality : Ki Islands, 129 fathoms).

Aseraggodes kaianus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 155, 1929 (type).

Aseraggodes klunzingeri (Weber)

Pardachirus klunzingeri Weber, Nova Guinea, vol. 5, pt. 2, p. 250, pl. 13, fig. 2, 1908 (type locality : Merauke River mouth; Alkmaar, New Guinea). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 288, June 15, 1926 (compiled). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 284, Sep. 10, 1929 (reference).

Aseraggodes klunzingeri Weber, Nova Guinea, vol. 9, pt. 4, p. 588, 1913 (Varen River; Lorentz River; Bivak River; Alkmaar). —Fowler, Mem. Bishop Mus., vol. 10, p. 94, 1928 (compiled). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 157, 1929 (Weber's materials). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 190 (type).

Aseraggodes kobensis (Steindachner)

Solea (Achirus) kobensis Steindachner, Ann. Hofmus. Wien, vol. 11, p. 218, 1896 (type locality : Kobe).

Aserraggodes kobensis Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 122, 1901 (reference).

Aseraggodes kobensis Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 230, fig. 24, 1906 (Nagasaki). —Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 440, 1912 (Shimizu). —Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 333, fig. 282, 1913 (reference). —Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 115, 1920 (Enoura, Suruga). —Chabanaud, Zool. Mededeel., vol. 13, pts. 3-4, 1930, p. 189 (type); Bull. Soc. Zool. France, vol. 56, p. 300, 1931 (diagnosis in key).

Aseraggodes microlepidotus Weber

Aseraggodes microlepidotus Weber, Siboga Exped., vol. 57, p. 438, pl. 11, fig. 2, 1913 (type locality : lat. 8°19'S., long. 117°41'E., Saleh Bay, Sumbawa, 274 meters). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 153, 1929 (type). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 189 (type); Bull. Soc. Zool. France, vol. 56, p. 300, 1931 (diagnosis in key).

Aseraggodes macleayanus (Ramsay)

Solea macleayana Ramsay, Proc. Linn. Soc. New South Wales, vol. 5, pt. 4, p. 462, 1881 (type locality : Manly, New South Wales).

Aseraggodes macleayanus Ogilby, Mem. Queensland Mus., vol. 5, p. 137, pl. 15, 1916 ( ). —McCulloch, Austral. Zool., 2, p. 47, pl. 13, 1921. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 289, June 15, 1926 (compiled). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 283, Sep. 10, 1929 (Richmond River; Gloucester Head; 16 to 35 fathoms). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 191 (compiled).

Aseraggodes macleayana Roughley, Fishes of Australia, p. 175, pl. 60, 1916.

Solea fluviatilis Ramsay, Proc. Linn. Soc. New South Wales, vol. 7, pt. 1, p. 111, May 23, 1882 (type locality : Hunter River, New South Wales, in fresh water).

Aseraggodes melanospilos (Bleeker)

Achirus melanospilos Bleeker, Nat. Tijds. Ned. Indië, vol. 7, p. 257, 1854 (type locality : Manado, Celebes).

Achirus melanospilus Bleeker, Atlas Ichth. Ind. Néerl., vol. 4, p. 23, pl. (13) 244, fig. 1, 1866-72 (Singapore, Celebes, Batjan, Amboina).

Liachirus melanospilus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 158, fig. 42 (colored side), fig. 43 (blind side of head), 1929 (Bleeker's specimens; type of Aseraggodes melanospilos Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 191 (type of Liachirus nitidus).

Liachirus nitidus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 479, 1862 (type locality : China). —Steindachner, Sitzs. Ber. Akad. Wiss Wien, Math.-nat. Kl., vol. 55, pt. 1, p. 588,(China). —Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, p. 366, fig. 28, 1902 (Giran, Formosa). Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 231, fig. 25, 1906 (Giran). —Jordan, Tanaka, Snyder, Journ. College Sci., vol. 33, p. 333, fig. 283, 1913 (reference). —Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, art. 2, p. 67, 1922 (Takao, Formosa). —Rendahl, Arkiv Zool.

vol. 16, No. 2, p. , 1924 (Swatow; Kuang-Tung). Chu, Biol. Bull. St. John's Univ., Shanghai, No. 1, p. 93, Jan 1931 (reference).

Aseraggodes melanostictus (Peters)

Solea (Achirus) melanosticta Peters, Monatsb. Akad. Wiss. Berlin, 1876, (1877), p. 845 (type locality : Bougainville Island, 40 fathoms).

Aseraggodes melanostictus Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 290, June 15, 1926 (part; not material). —Fowler, Mem. Bishop Mus., vol. 10, p. 94, 1928 (compiled). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 190 (type). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 284, Sep. 10, 1929 (reference).

Aseraggodes normani Chabanaud

Aseraggodes normani Chabanaud, Ann. Mag. Nat. Hist., ser. 10, vol. 5, p. 241, 1930 (on Norman).

Aseraggodes melanostictus (not Peters) Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 290, p. 290, fig. 12, June 15, 1926 (type locality : Gladstone, Queensland).

Aseraggodes pellucidus (Bennett)

Achirus pellucidus Bennett, Whaling Voyage, p. 277, 1840 (type locality : lat. 27°S., long. 170°W., Pacific Ocean; day's sail from Marquesas Islands). —Fowler, Mem. Bishop Mus., vol. 10, p. 93, 1928 (compiled).

Aseraggodes pellucidus Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 413, 1905 (1906) (name).

Aseraggodes ramsayi (Ogilby)

Solea ramsayi Ogilby, Mem. Austral. Mus., vol. 2, p. 70, pl. 3, fig. 4, 1889 (type locality : Lord Howe Island).

Aseraggodes ramsayi Waite, Rec. Austral. Mus., vol. 5, pt. 3, p. 226, (reference).

Aseraggodes sinus-arabici Chabanaud

Aseraggodes sinus-arabici Chabanaud, Bull. Soc. Zool. France, vol. 66, 1931, p. 296 (type locality : Gulf of Suez, Djibouti).

Aseraggodes texturatus Weber

Aseraggodes texturatus Weber, Siboga Exped., vol. 57, pt. , p. 437, fig. 81, 1913 (type locality : lat. 10°27'9S., long. 123°28'7E., Timor Sea, 216 meters). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 155, fig. 41, 1929 (type). —Chabanaud, Zool. Mededeel. Leiden, vol. 13, pts. 3-4, 1930, p. 189 (type).

Genus Pardachirus Günther

Pardachirus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 478, 1862.

(Type Achirus marmoratus Lacépède, designated by Jordan, Genera of Fishes, pt. 3, p. 319, 1919.)

Body oblong. Eyes on right side. Mouth strongly restricted, more developed on right side than on blind side. Minute teeth on left rami of jaws only. Front nostril wide tube above middle of mouth; hind nostril before eye; nostrils on blind side both narrow tubes, placed above each other and well above mouth. Gill membranes confluent, free from isthmus. Scales feebly ctenoid, smaller ones along vertical fins cycloid.(scales may also become cycloid through wear). Straight axial lateral line on both sides, also second on blind side along upper profile of neck, beginning on snout. Left side of head covered with rather long filaments, forming fringe along lower profile and opercular borders of both sides. Dorsal and anal separate from caudal. All vertical fin rays divided. Each dorsal and anal ray with basal pore. No pectorals. Ventrals unsymmetrical, right one long based, membrane attached posteriorly on base of first anal ray; left one short based and less developed. Vent asymmetrical, on right side.

Indian and Western Pacific Oceans.

The following doubtful species is not located by Norman:

Pardachirus maculatus (Schneider)

Pleuronectes maculatus Schneider, Syst. Ichth. Bloch, p. 157, 1801 (type locality : Tranquebar).

Achirus maculatus Day, Fishes of India, pt. 3, p. 427, 1877 (type);

Fauna British India, Fishes, vol. 2, p. 447 (compiled).

Pardachirus hedleyi Ogilby

Pardachirus hedleyi Ogilby, Mem. Queensland Mus., vol. 5, p. 144, pl. 17, July 10, 1916 (type locality : Port Jackson, New South Wales). — McCulloch, Austral. Zool., vol. 2, p. 47, pl. 13, 1921. —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 288, June 15, 1926 (compiled); Rec. Indian Mus., vol. 30, pt. 2, p. 188, July 1928 (diagnosis in key). — McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 284, Sep. 10, 1929 (reference).

Achirus hedleyi Chabanaud, Zool. Anzeiger, vol. 93, pt. 3/4, 1931, p. 101 (diagnosis in key).

Pardachirus marmoratus (Lacépède)

Achirus marmoratus Lacépède, Hist. Nat. Poiss., vol. 4, pp. 658, 660, 1802 (type locality : Mauritius); vol. 3, pl. 12, fig. 3, 1800. — Kaup, Archiv Naturges., vol. 24, pt. 1, p. 102, 1858 (reference). — Chabanaud, Zool. Anzeiger, vol. 93, pt. 3/4, 1931, p. 102 (diagnosis in key).

Pardachirus marmoratus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 478, 1862 (Madagascar). —Sauvage, Hist. Nat. Madagascar, Poiss., p. 472, 1891. —Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 405, June 1925. —Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 188, July 1898 (Muscat; Persian Gulf).

?Pleuronectes barbatus Bonnaterre, Encyclop. Méth. Ich., p. 74, 1788 (type locality : unknown locality). —Shaw and Nodder, Naturalists Miscellany, vol. 21, p. , 1810 (India; Red Sea).

Achirus barbatus Lacépède, Hist. Nat. Poiss., vol. 4, pp. 658, 660, 1802 (no locality). —Geoffroy, Ann. Mus. Hist. Nat. Paris, vol. 1, p. 152, pl. 11, ( ). —Rüppell, Atlas Reise

nördl. Afrika, Fische, p. 122, pl. 31, fig. 2, 1828 (Mohila).

?Pleuronectes albus Schneider, Syst. Ichth. Bloch, p. 159, 1801 (on Gronow, Zoophylacii, p. 75, No. 255, 17 ; type locality : Amboina).

?Pleuronectes maculosus Gray, Cat. Fishes Gronow, p. 89, 1854 (type locality : Mari Americano).

Pardachirus pavoninus (not Lacépède) Pellegrin, Bull. Soc. Zool. France, vol. 39, p. 229, 1914 (Madagascar).

Pardachirus pavoninus (Lacépède)

Achirus pavoninus Lacépède, Hist. Nat. Poiss., vol. 4, pp. 658, 660, 1802 (type locality : no locality, "la collection de Hollande, cédeé à la France"). —Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1207, 1849 (1850) (Pinang Sea). —Kaup, Archiv Naturges., vol. 24, pt. 1, p. 102, 1858 (reference). —Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 24, pl. (10) 241, fig. 1, 1866-72 (Java, Sumatra, Nias, Pinang, Singapore, Banka, Celebes, Batjan, Ceram, Aru); Verh. Kon. Ak. Wet. Amsterdam, vol. 18 (Chine), p. 3, 1879 (China). —Day, Fishes of India, pt. 3, p. 427, pl. 93, fig. 2, 1877 (Port Blair); Fauna British India, vol. 2, p. 446, fig. 160, 1889. —Chu, Biol. Bull. St. John's Univ. Shanghai, No. 1, p. 92, Jan. 1931 (reference). —Chabanaud, Zool. Anzeiger, vol. 93, pt. 3/4, 1931, p. 102 (diagnosis in key).

Pleuronectes pavoninus Shaw, General Zool., vol. 4, p. 310, 1804.

Pardachirus pavoninus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 479, 1862 (Pinang, Singapore, Moluccas). —Schmeltz, Cat. Mus. Godeffroy, No. 4, p. 24, 1869 (Pelew Islands). —Günther, Cruise of Curacoa, Brenchley, p. 410, 1873 (Solomon Islands). —Macleay, Proc. Linn. Soc. New South Wales,

vol. 6, p. 136, 1881 (Cape Grenville). —Meyer, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 40, 1885 (North Celebes; Cebu). —Seale, Occas. Pap. Bishop Mus., vol. 4, No. 1, p. 86, 1906 (Faté). —Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 107, 1906 (1907) (Bacon). —Günther, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 347, 1909 (New Pommerania, Solomons, Tonga). —Kendall and Goldsborough, Mem. Mus. Comp. Zool., vol. 26, p. 332, 1911 (Tonga). —Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 517, 1912 (Okinawa). —Weber, Siboga Exped., vol. 57, p. 439, 1913 (Macassar; Saleyer; Rotti; 18 to 45 meters). —Ogilby, Mem. Queensland Mus., vol. 5, p. 142, pl. 16, 1916 (Raine Island). — Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, art. 2, p. 67, 1922 (Zamboanga). —Norman, Biol. Res. Endeavour, vol. 5, pt. 2, p. 288, June 15, 1926 (compiled); Rec. Indian Mus., vol. 30, pt. 2, p. 187, fig. 5, July 1928 (Andamans). —Fowler, Mem. Bishop Mus., vol. 10, p. 94, 1928 (Fatè; Tonga). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 165, fig. 46, 1929 (Singapore, Madura, Celebes, Saleyer, Rotti, Aru, South New Guinea). —McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 284, Sep. 10, 1929 (reference).

Achirus maculatus Kuhl and Van Hasselt, in Bleeker, Nat. Geneesk. Arch. Ned. Indië, vol. 2, p. 509, 1845 (type locality : Batavia).

Achirus barbatus (not Lacépède?) Thiollière, Faune Woodlark, p. 210, 1857 (Woodlark Island).

Achirus napai (Montrouzier) Thiollière, Faune Woodlark, p. 210, 1857 (name in synonymy).

Pardachirus marmoratus (not Lacépède?) Kner, Reise Novara, Fische, p. 290, 1856.

Solea persimilis Günther, Mus. Godeffroy, Jour., vol. 8, pt. 16, p. 346, 1909 (type locality : New Pommerania).

Asseraggodes persimilis Fowler, Mem. Bishop Mus., vol. 10, p. 94, 1928 (compiled : error).

Depth 2 1/3 to 2 1/2; head 3 2/3 to 4 1/2, width 3 to 3 1/4. Snout end to lower orbit 2 7/8 to 3 2/5 in head; lower orbit 5 1/2 to 7, 1 3/4 to 2 in snout; upper orbit 2/5 to 2/3 in advance of lower orbit; mouth cleft reaches scarcely to or 2/5 in lower eye, curved, length 2 4/5 to 3 1/4 in head from snout end; interorbital 1 1/4 to 2 in lower orbit, slightly concave. Gill rakers vestigeal or absent; gill filaments long as lower orbit.

Scales 68 to 71 in lateral line from over gill opening to caudal base (8 or 9 more forward on head to dorsal intersection); 33 or 34 above, 36 to 38 below. Vertical fins all scally basally. Scales all ctenoid. Scales with 34 to 45 basal radiating striae; 5 to 9 slender apical denticles; circuli fine. Lateral line complete, present on both sides.

D. 64 to 66, fin height 1 1/2 to 1 3/5 in head; A. 50 or 51, fin height 1 1/2 to 1 3/5; caudal 1 1/5 to 1 1/4, convex behind; depth of caudal peduncle 2 to 2 1/8; ventral 2 to 2 1/3.

Variably brown to russet or dark brown on right side, with innumerable very variable dark to blackish rings, many with black central dot, some often enclosing pale or gray white blotches. Along fins marginally rings smaller, more numerous and crowded. In young coloration all made up of small-dark spots with paler areas and fins with dark to blackish spots. Left side whitish, fins brownish submarginally.

Andamans, Malaya, East Indies, Philippines, Micronesia, Melanesia, Polynesia, China, Rui Kui, Queensland.

20312. Bolinao Bay. May 10, 1909. Length 108 mm.

1 example. Capunuypugan, Mindanao. May 9, 1908. Length 65 mm.

11342, 11343. Cebu market, Cebu. April 4, 1908. Length 150 to 170 mm.

15487. Cebu market. March 26, 1909. Length 141 mm.

21754. Cebu market. March 28, 1909. Length 64 mm.

5725. Cebu market. August 12, 1909. Length 171 mm.

11563 to 11566. Cebu market. Ausust 26, 1909. Length 70 to 150 mm.

13868 [1877]. Cebu market. August 31, 1909. Length 64 mm.

5161. Jolo market, Jolo. March 6, 1908. Length 165 mm.

8824. Malcochin River, Pagapas Bay, Luzon. February 20, 1909. Length 128 mm.

12640, 12641. Santiago River, Pagapas Bay, Luzon. February 20, 1909. Length 160 to 161 mm.

Pardachirus poropterus (Bleeker)

Achirus poropterus Bleeker, Naturk. Tijds. Nederl. Indië, vol. 1, p. 410, 1851 (type locality : Batavia; Padang); Atlas Ichth. Ind. Néerl., vol. 6, p. 24, pl. (15) 246, fig. 2, 1866-72 (Java, Sumatra, Nias, Amboina). —Jouan, Mém. Soc. Sci. Nat. Chérbourg, vol. 13, p. 275, 1867 ( ). —Regan. Trans. Zool. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 235, 1908 (Mulaku, Maldives, 27 fathoms). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 162, fig. 44, 1929 (Simalur; Java; Karakelang; Flores; Ceram).

Aseraggodes poropterus Kaup, Archiv Naturges., vol. 24, pt. 1, p. 103, 1858 (reference).

Solea (Achirus) poropterus Klunzinger, Sitzs. Ber. Akad. Wiss. Wien, Math. -nat. Kl., vol. 80, p. 408, 1879 (1880) (Port Darwin).

Solea (Achirus) poroptera Macleay, Proc. Linn. Soc. New South Wales, vol. 9, p. 51, 1884.

Pardachirus poropterus Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 188, July 1928 (diagnosis in key).

Achirus thepassii Bleeker, Naturk. Tijds. Nederl. Indië, vol. 6, p. 500, 1854 (type locality : Amboina); Atlas Ichth. Ind. Néerl., vol. 6, p. 24, pl. (15) 246, fig. 4, 1866-72 (Celebes; Amboina).

Solea thepassii Günther, Cat. Fishes Brit. Mus., vol. 4, p. 478, 1862 (no locality). —Smith and Seale, Proc. Biol. Soc. Washington, vol. 19, June 4, 1906, p. 82 (Mindinao).

Pardachirus rautheri (Chabanaud)

Achirus rautheri Chabanaud, Zool. Anzeiger, vol. 93, pt. 3/4, 1931, p. 95, figs. 1-2 (type locality : Port Darwin, North Australia).

Genus Phyllichthys McCulloch

Phyllichthys McCulloch, Mem. Queensland Mus., vol. 5, p. 66, July 10, 1916. (Type Synaptura sclerolepis Macleay).

Dorsal and anal united with caudal. Ventral fins more or less joined by membrane, right one completely joined to anal.

Phyllichthys punctatus McCulloch

Phyllichthys punctatus McCulloch, Mem. Queensland Mus., vol. 5, p. 67, July 10, 1916 (type locality : Busselton, South West Australia); Austral. Mus. Mem., No. 5, pt. 2, p. 286, Sep. 10, 1929 (reference). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 297, June 15, 1926 (compiled).

Phyllichthys sclerolepis (Macleay)

Snyaptura sclerolepis Macleay, Proc. Linn. Soc. New South Wales, vol. 2, p. 363, pl. 10, fig. 4, 1878 (type locality : Port Darwin, Northern Territory); vol. 6, p. 137, 1882.

Phyllichthys sclerolepis McCulloch, Mem. Queensland Mus., vol. 5, p. 66, pl. 9, fig. 2, text-fig. 4, 1916 ( ). —Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 297, June 15, 1926 (compiled). — McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 286, Sep. 10, 1929 (reference).

Genus Achiroides Bleeker

Achiroides Bleeker, Naturk. Tijds. Nederl. Indië, vol. 1, pp. 404, 411, 1850. (Type Achiroides melanorhynchus Bleeker, designated by Jordan, Genera of Fishes, pt. 2, p. 247, 1919.)

Eurypleura Kaup, Archiv Naturges., vol. 24, pt. 1, p. 100, 1858. (Type Plagusia melanorhynchus Bleeker, designated by Jordan, Genera of Fishes, pt. 2, p. 282, 1919.)

Snout not forming prominent hook. Eyes on right side. Mouth small, twisted, somewhat curved. Minute teeth in jaws of left side only. Front nostril of colored side at end of tube, hind one with cutaneous flap; nostril of blind side a short tube. Gill membranes united, free from isthmus. Scales feebly ctenoid on both sides of body. One streight axial lateral line on both sides. Scales of blind side round corner of mouth and on chin replaced by fleshy tentacles. Lips of colored side with similar but shorter tentacles. Dorsal begins on snout. Dorsal and anal confluent with caudal. Rays of vertical fins divided or split at tips only. No pectorals. Ventrals short, rather broad based, free from each other and from anal.

Few species in Malaya, East Indies and Cambodja.

Achiroides melanorhynchus (Bleeker)

Plagusia melanorhynchus Bleeker, Naturk. Tijds. Ned. Indië, vol. 1, p. 15, 1850 (type locality : Bandjermassing, Borneo).

Achiroides melanorhynchos Bleeker, Verhand. Batavia. Genoots., No. 9, vol. 24, p. 19, 1852 (Bandjermassing).

Achiroides melanorhynchus Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 26, pl. (15) 266, fig. 6, 1866-72 (Sumatra; Borneo). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 180, fig. 49 (head), 1929 (Borneo). —Chevey, Inst. Océan. Indo Chine, 19e Note, p. 28, Aug. 25, 1932 (Cochin China).

Eurypleura melanorhyncha Kaup, Archiv Naturges., vol. 24, pt. 1, p. 100, 1858 (reference).

Synaptura melanorhyncha Günther, Cat. Fishes Brit. Mus., vol. 4, p. 487, 1862 (Gamboja). —Volz, Zool. Jahrb. Abth. Syst., vol. 19, p. 380, 1903 ( ). —Tirant, Serv. Océan. Pech. Indo Chine, 6e Note, p. 172, 1929 (Thudaumot).

Synaptura achira Duncker, Mitteil. Naturh. Mus. Hamburg, vol. 21, p. 168, 1904.

Achiroides leucorhynchos Bleeker

Achiroides leucorhynchos Bleeker, Ned. Tijds. Ned. Indië, vol. 1, p. 411, 1850 (1851) (type locality : Surakarta, central Java, in rivers); Verh. Batavia, Genoot., No. 9, vol. 24, p. 20, 1852 (Surakarta).

Achiroides leucorhynchus Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 26, pl. (13) 264, fig. 3, 1866-72 (Java). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 181, 1929 (compiled).

Eurypleura leucorhyncha Kaup, Archiv Naturges., vol. 24, pt. 1, p. 100, 1858 (note).

Synaptura leucorhyncha Günther, Cat. Fishes Brit. Mus., vol. 4, p. 486, 1862 (no locality).

Genus Heteromycterus Kaup

Heteromycterus Kaup, Archiv Naturges., vol. 24, pt. 1, p. 103, 1858.

(Type Heteromycterus capensis Kaup, monotypic.)

Amate Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 228, 1906.

(Type Achirus japonicus Schlegel, orthotypic.)

Monodichthys Chabanaud, Bull. Mus. Hist. Nat. Paris, 1925, p. 356.

(Type, Monodichthys proboscideus Chabanaud, monotypic.)

Snout prolonged into hook. Anterior nostril of blind side dilated and fringed. Inter-branchial septum perforated. Dorsal rays extend to end of snout. Ventrals markedly asymmetrical, on right side median, elongate and joined to anal.

Heteromycterus capensis Kaup

Heteromycterus capensis Kaup, Archiv Naturges., vol. 24, pt. 1, p. 103, 1858 (type locality : no locality [=Cape of Good Hope]). —Chabanaud, Ann. Mag. Nat. Hist., ser. 9, vol. 20, p. 525, Nov. 1927 (type).

Achirus capensis Boulenger, Marine Investig. South Africa, vol. 1, p. 2, 1898 (False Bay). —Von Bonde, Fisher. Mar. Biol. Surv. South Africa, Rep. No. 2, pt. 1, p. 17, 1922 (reference). —Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 404, June 1925 (Saldanha Bay, False Bay, East London).

Heteromycteris hartzfeldii (Bleeker)

Achirus hartzfeldii Bleeker, Naturk. Tijds. Nederl. Indië, vol. 4, p. 123, 1853 (type locality : Amboina). —Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 106, 1906 (1907) (Philippines).

Achirus hartzfeldi Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 25, pl. (15) 246, fig. 1 (Sumatra, Amboina, Flores, Timor). —Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 160, fig. 45, 1929 (Malacca Straits, Bawean, Obi, British India), p. 429 (reference).

Aseraggodes hartzfeldi Kaup, Archiv Naturges., vol. 24, pt. 1, p. 103, 1858 (reference). —Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 122, 1901 (Nagasaki).

Solea hartzfeldii Günther, Cat. Fishes Brit. Mus., p. 471, 1862 (no locality).

Solea hartzfeldi Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. , 1906 (Bacon).

Heteromycterus hartzfeldi Chabanaud, Ann. Mag. Nat. Hist., ser. 9, vol. 20, p. 526, 1927 (paratype).

Depth 2 1/4 to 2 3/4; head 3 4/5 to 4, width 4 1/4 to 4 1/2. Snout end to lower orbit 2 1/8 to 2 1/4 in head; lower orbit 5 1/2 to 6, 2 to 2 1/3 in snout; upper orbit advanced 1/2 to 2/3 of lower orbit; mouth cleft extends 2/5 to 1/2 below lower eye, curved, length 3 2/3 to 4 in head, flap of upper jaw well overlapping mandible; interorbital 3/5 to 2/3 of lower orbital diameter, concave. No gill rakers; gill filaments equal lower orbit.

Scales 80 to 83 in lateral line from above gill opening to caudal base (10 or 11 more forward on head to dorsal intersection); 28 or 29 above, 24 to 26 below. Scales all ctenoid. Scales with 10 to 12 basal radiating striae; 11 or 12 slender divergent apical denticles, with 3 or 4 transverse series of basal elements; circuli fine. Lateral line complete, present on both sides.

D. 84 to 90, fin height 2 to 2 1/4 in head; A. 59 to 62, fin height 1 4/5 to 2 1/2; caudal 1 1/8 to 1/5, convex behind; least depth of caudal peduncle 2 3/5 to 2 3/4; ventral 1 7/8 to 2 1/8.

Dark brown on right side, mottled with still darker. Row of 5 or 6 large ocelli on body below dorsal base and row of 4 or 5 above anal base, also row of 5 along lateral line axially, these often double. dark or blackish borders of ocelli often specked or dotted with white. Vertical fins frequently with dark to blackish specks. Orbits dark slate. Left side whitish, vertical fins with faint dark dots.

Malacca, East Indies, Philippines, Japan.

One example. Cotabato, below mouth of Mindanao River, Mindanao. May 20, 1908. Length 54 mm.

6 examples. Davao, Mindanao. May 16, 1908. Length 70 to 86 mm.

8 examples. Hinunangan Beach, Leyte. July 30, 1909. [1794.] Length 31 to 77 mm.

1 example. Mantaquin Bay, Palawan. April 2, 1909. Length 70 mm.

1 example. [823.] Port Bais, Negros. March 31, 1908. Length 70 mm.

1 example. Subig Bay, Olongapao. January 7, 1908. Length 78 mm.

1 example. Verde del Sur, Palawan. April 6, 1909. Length 50 mm.

Heteromycteris oculus (Alcock)

Solea oculus Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, p. 285, pl. 18, fig. 3, 1889 (type locality : south west of Puri 32 miles, Bengal Bay, 7 fathoms). —Johnstone, Ceylon Pearl Oyster Fish., Suppl. Rep. 15, p. 206 (1904).

Solea (Achirus) oculus Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 329, 1896.

Heteromycterus oculus Chabanaud, Ann. Mag. Nat. Hist., ser. 9, vol. 20, p. 526, 1927 (Bengal Bay). —Norman, Rec. Indian Mus., vol. 30, pt. 2, p. 190, fig. 8, July 1928 (Mekran, Ganjam, Puri, Sundarbans, 9 to 14 fathoms).

Heteromycteris japonicus (Schlegel)

Achirus japonicus Schlegel, Fauna Japonica, Poiss., pts. 10-14, p. 186, 1846 (type locality : seas of Japan).

Solea japonica Günther, Cat. Fishes Brit. Mus., vol. 4, p. 471, 1862 (compiled).

Aseraggodes japonicus Jordan and Snyder, Annot. Zool. Japon. Tokyo, vol. 3, p. 122, 1901 (reference).

Usinosita japonica Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, p. 366, 1902 (Keerun, Formosa).

Amate japonica Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 228, fig. 23, 1906 (Wakanoura, Tokyo, Tsuruga, Misaki, Kobe, Nagasaki). — Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 440 (Tokyo, Tanegashima, Kagoshima, Nagasaki). —Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 322, fig. 281, 1913 (reference). —Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 115, 1920 (Tokyo).

Heteromycteris japonicus Reeves, Journ. Pan Pac. Res. Inst., vol. 2, No. 3, p. 14, July-Sep. 1927 (name).

Heteromycteris japonica Chabanaud, Ann. Mag. Nat. Hist., ser. 9, vol. 20, p. 527, Nov. 1927 (southern Japan). —Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 2, p. 128, 1931 (Misaki).

Heteromycteres japonica Schmidt and Lindberg, Bull. Acad. Sci. U. R. S. S., 1930, p. 1149 (Tsuruga).

Achirus hartzfeldi (not Bleeker) Nyström, Bih. Svensk. Vet. Akad. Handl. Stockholm, vol. 13, aft. 4, No. 4, p. 42, 1887 (Nystrom).

Aseraggodes hartzfeldii Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 122, 1901 (reference).

Solea harzfeldii Smith and Pope, Proc. U. S. Nat. Mus., vol. 31, p. 498, 1906 (Kagoshima).