Family Triglidae

The Gurnards

Body elongate, usually more or less fusiform. Head externally bony, entirely cuirassed with rough bony plates, some of which armed with spines. Eyes high. Mouth terminal or subinferior. Premaxillaries protractile. Maxillary without supplemental bone, slips under preorbital. Teeth very small, in bands on jaws, usually on vomer and palatines. Gill membranes free from isthmus. Gills 4, large slit behind fourth. Gill rakers various. Pseudobranchiae present. Air bladder present. Pyloric

Pseudobranchiae large. Air bladder simple. Vertebrae 26 or 27, of which 15 or 16 caudal. Scales small or moderate, 50 to 125 in lateral series, ctenoid. Soft vertical fins scaly basally. Ventral base with scaly flap. Lateral line continuous. One dorsal, depressible in groove, with 9 to 14 stout spines, rays 15 to 23. Anal spines 3, rays 6 to 9. Pectoral pointed. Ventral inserted little behind pectoral base.

A large genus of striking Indo Pacific forms, many especially so as they are marked with black horizontal bands. The West African Diagramella Pellegrin is here excluded from this genus as its contour of the head is not elevated.

appendages usually present, few. Body covered with scales or bony plates. Spinous dorsal present, short. Soft dorsal like anal, latter without spines. Caudal narrow, few rayed. Pectoral large, with broad base, 3 lower rays detached, forming feelers, used chiefly in search of food, as when turning over stones, exploring shells, etc. Ventrals thoracic, wide apart, separated by flat area, with spine and 5 rays.

Angular fishes in all warm seas, some living about rocks, others in deep water, when red in color.

220. Type Pristipoma lecuvum Valenciennes, monotypic.

Eucheatichthys Fowler, Journ. Acad. Nat. Sci. Phila., series 2, vol. 12, 1904, p. 527. Type Diagramma affine Günther, orthotypic.

Apsilochthys Fowler, op. cit., series 2, vol. 12, 1904, p. 528. Type Holocentrum radjaban Lacépède, orthotypic.

Body compressed, oblong. Head strongly obtuse, upper profile well convex. Eye moderate. Mouth small, horizontal, upper jaw protractile. Maxillary slips below preorbital. Lips fleshy. Jaws with bands of villiform teeth, pointed, in about 4 to 6 rows. Chin with pores, without central groove or barbels. Preopercle serrate. Suborbitals without spines or serrae. No opercular spine. Branchiostegals 6 or 7.

Genus Paratrigla Ogilby

Paratrigla Ogilby, Ann. Queensland Mus., No. 10, p. 56, Nov. 1, 1911. (Type Trigla pleuracanthica Richardson, orthotypic.)

Body elongate, rather slender, subcylindrical. Head rather small. Snout rather long, nearly straight profile oblique. Eye large, elevated, little premedian in head. Mouth moderate, nearly horizontal. Maxillary reaches f below eye. Preorbitals not protruded beyond snout. Armature of head moderate. Pyloric coeca 7. Scales regular, moderate, along lateral line form spiny keel. Row of spiny scales along bases of both dorsals. Dorsal spines rather strong, little higher, though base little shorter than soft dorsal. Anal like soft dorsal. Caudal truncate. Pectoral moderate, with 3 rather short detached rays below. Ventral moderate.

Known by its spiny lateral line.

Paratrigla papilio (Cuvier)

Trigla papilio Cuvier, Hist. Nat. Poiss., vol. 4, p. 80, pl. 73, bis. 1829 (type locality, "mers des Indes" "Péron"). — Swainson, Nat. Hist. Animals, vol. 2, p. 262, 1839 (reference).

Lepidotrigla papilio Günther, Cat. Fish. Brit. Mus., vol. 2, p. 197, 1860 (copied). — Macleay, Proc. Linn. Soc. New South Wales, vol. 5, pt. 4, p. 588, 1881 (Port Jackson).

2300

Trigla spuracanthica Richardson,
Zool. Voy. Erebus and Terror,
Fish., p. 23, pl. 16, figs. 1-4,
March 1, 1845 (type locality,
Sydney, New South Wales). —
Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 202, 1860 (types). —
Macleay, Proc. Linn. Soc. New South
Wales, vol. 5, pt. 4, p. 590, 1881 (copied).

Paratrigla umbrosa (Ogilby)

Lepidotrigla umbrosa Ogilby, Rec. Fish. Queensland Coast, p. 120, Dec. 20, 1910 (type locality, South Queensland, in 12 to 25 fathoms).

Paratrigla umbrosa Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 165, July 7, 1925 (reference).
— Mc Culloch, Austral. Mus. Mem., No. 5, pt. 3, p. 396, Nov. 28, 1929 (reference).

Genus Lepidotrigla Günther

Lepidotrigla Günther, Cat. Fish. Brit. Mus., vol. 2, p. 196, 1860. (Type Trigla aspera Swainson, monotypic.

Palaemichthys Kaup, Archiv Naturg., p. 90, 1873. (Type Trigla aspera Swainson. Designated by Jordan, Genera of Fishes, part 3, p. 370, 1919.)

Teeth in jaws and usually in
vomer. Palatines edentate. Body
covered with scales of moderate
size, ctenoid or cycloid above
lower third of side, cycloid
ventrally. Body naked, or
partly scaly. Lateral line
bifurcates at caudal base,
the branches extending on to
caudal lobes. Lateral line
tubes with one long oblique dorsal
and a similar ventral branch,
and 1 to 6 intermediate smaller
branches, each ending in a pore.
No spines on lateral line scales,
which are somewhat larger than
the body scales, being vertically
elongate. Row of spinose plates
along each side of base of dorsal
fin. Pectoral with 3 free rays.

Lepidotrigla güntheri Hilgendorf

Lepidotrigla güntheri Hilgendorf, Sitzs. Ber. Naturf. Freund. Berlin, p. 106, 1879 (type locality, Tokyo). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 32, p. 133, 1913 (reference). — Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 291, 1913 (reference). — Jouba and Matsuura, Cat. Zool. Spec. Tokyo Mus., Vertebr., p. 102, 1920 (Ajiro, Izu). — Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, p. 189, June 27, 1925 (Misaki; Tokyo; Toyama; Fukui). — Matsubara and Hiyama, Journ. Imp. Fisher. Inst. Tokyo, vol. 28, no. 1, p. 25, fig. 9, Dec. 1932 (Misaki; Yuruga Bay; Nagasaki; Hizan, Korea).

Lepidotrigla günntheri Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 107, 1901 (reference).

Lepidotrigla guntheri Franz, Abhandl. Bayer. Akad. Wiss., vol. 14, Suppl. Band 1, p. 79, 1910 (Misaki).

Lepidotrigla longifimnis Steindachner and Döderlein, Denks. Akad. Wiss. Wien, math.-naturw. Kl., vol. 51, pt. 1, p. 262, pl. 4, fig. 1-a, 1887 (type locality, Tokyo).

Lepidotrigla longispinis Jordan and Snyder, op. cit., p. 107, 1901 (on Steindachner and Döderlein).

depth 7 1/5 to 7 2/5; head 4 7/8 to 5, width 1 1/5 to 2. Snout 1 1/5 to 2 in head; eye 4 to 4 1/2, 1 1/2 to 2 in snout, little greater than interorbital; maxillary reaches 1/5 to 1/4 in eye, length 1/2 to 2/5 in head; mouth width 3 to 3 1/2; teeth in villiform bands on jaws; interorbital 5 1/4, broadly and deeply concave. Gill rakers 8+10, low, asperous tubercles, 7 of which 4 or 5 below requirements; gill rakers 1/2 of gill filaments, which 2/3 of eye.

Rostral spines short, very broad, edges well denticulated, especially inner ones; 2 very short, small, antero-supra-orbital spines and posterior

small knob denticulate behind, followed by small notch; 2 short serrate occipital ridges, each ending in denticle; supracapular spine small, with broad base; postocular ridge ends in small spine above and behind posterior preopercle edge; long slender humeral spine long as orbit, with keel, base broad.

Scales 54 + in lateral line; 5 above to soft dorsal origin, 18 below; 10 predorsal. Chest, breast, prepectoral region and area narrowly behind paired fins naked. Caudal largely covered with small scales, more numerous basally. Scales of lateral line but —

little larger than others; anterior with 4 or 5 branches, become trifid posteriorly... Scales with 2 short marginal striae; 9 to 25 short, broad, apical denticles; circuli fine, obsolete apically. Row of 26 bony plates along back, each with strong spine and 10 along base of first dorsal.

D. VIII — 17, I, edge of first spine serrate, second spine $1\frac{2}{3}$ in head, third ray $3\frac{1}{2}$; A. 17, I, seventh ray 14; caudal $1\frac{3}{5}$, little emarginate behind; least depth of caudal peduncle 2 in eye; pectoral reaches 2 to caudal base, $1\frac{1}{10}$ in head; rays I, 7, III — III, uppermost of detached rays $1\frac{1}{8}$ in upper

section of pectoral; ventral rays I, 5, reaches base of second anal ray, length 1/3 in head.

Brown, upper half of body contrasted with low white half. Iris white. Greater part of upper section of pectoral medially blackish, uniform, margined pale all around. Fins otherwise pale or whitish.

Korea, Japan.

4257. D. 5517. Port Jagolo Light, S. 83° W., 10.5 miles (N. lat. 8° 45' 30", E. long. 123° 33' 45"), northern Mindanao vicinity. 3m 169 fathoms. August 9, 1909. Length 182 mm.

U. S. N. M., No. 59662. Off Jolo, in 350 fathoms. May 11. Dr. H. M. Smith. Length 129 to 144 mm. Three examples. Two have the keel of the suborbital stay low but distinct, absent in the third specimen. This last specimen also differs a little in that it does not show the 2 occipital ridges ending in a spine so distinct.

Lepidotrigla spiloptera Günther

Lepidotrigla spiloptera Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 42, pl. 18, fig. C, 1880. (type locality, Ki Islands, in 129 fathoms); vol. 22, p. 64, 1887 (type). — Alcock, Cat. Deep Sea Fish. Indian Mus., p. 67, 1899 (Gulf of Martaban, 67 fathoms).

Lepidotrigla hiroptera Matsubara and Hiyama, Journ. Imp. Fisher. Inst., Tokyo, vol. 28, no. 1, p. 38, fig. 14, Dec. 1932 (Suruga Bay) (error).

Lepidotrigla argyrosoma n-s-

24332 to 24335, 24341, 24342,
24345 to 24347, 24354, 24355,
~~24363,~~ Albatross Collection
D. 5442. Same data as type.
Length 67 to 97 mm.

2336

Lepidotrigla alcocki Regan

Lepidotrigla alcocki Regan, Trans. Linn. Soc. London, vol. 12, pt. 3, Zool., p. 240, pl. 28, fig. A, May, 1908 (type locality, Maya de Malha Banks, over 123 fathoms).

2339

Lepidotrigla strauchi Steindachner

Trigla

(Lepidotrigla) strauchi Steindachner,

1 Sitzs. Ber. Akad. Wiss. Wien, math.-naturw. Kl., vol. 74, p. 214, 1876 (type locality, Hakodate).

Lepidotrigla strauchi

— Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 291, 1913 (reference). — Jzuka and Matsuura, Cat. Zool. Spec. Tokyo Mus., Vertebr., p. 122, 1920 (Hokeji). — Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, p. 289, June 27, 1925 (Tokyo; Osaka; Yoba; Toyama; Misaki; Miyazu).

— Matsubara and Hiyama, Journ. Imp. Fisher. Inst., Tokyo, vol. 28, no. 1, p. 50, fig. 18, Dec. 1932 (Genzan, Tajôren).

2339

U. S. N. M., No. 72133. Habitat, Japan. Albatross Collection 1906. Length 115 to 201 mm. Nine examples.

2340

Lepidotrigla microptera Günther

Lepidotrigla microptera Günther, Ann. Mag. Nat. Hist., London, ser. 4, vol. 12, p. 241, 1873 (type locality, Shanghai, China); Rep. Voy. Challenger, vol. 1, pt. 6, p. 66, 1880 (Inland Sea of Japan). — Steindachner and Döderlein, Denks. Akad. Wiss. Wien, vol. 53, pt. 1, p. 263, pl. 4, fig. 2-a, 1887 (Tokio, Hakodate, Shanghai), p. 264 (Tango on Japan Sea). — Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 595, 1902 (Ose Point, Suruga Bay; Natsushima Bay).

— Jordan and Richardson, Proc. U. S. Nat. Mus., vol. , p. 65, 1908 (Tokyo; Hakodate; Kobe; Wakanoura; Nagasaki; Aomori; Hiroshima; Tsuruga; Matsushima Bay; Suruga Bay). —
Franz, Abhandl. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 79, 1910 (Sagami Bay; Aburatsubo).

— Matsubara and Hiyama, Journ. Fisher. Inst. Tokyo, vol. 28, no. 1, p. 33, figs. 20–21, Dec. 1932 (Tokyo Bay, Misaki, Odawara, Shimonoseki, Nagasaki, China Sea, Korea).

2342

Lepidotrigla zerridens Hilgendorf, Sitzb. Gesell. naturf. Freund. Berlin, p. 107, 1879 (type locality, Japan). — Lyström, Bih. Kon. Sv. Vet. Akad. Handl. Stockholm, vol. 13, afd. 4, No. 4, p. 21, 1887 (Nagasaki. Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 107, 1901 (reference)

Lepidotrigla strauchii Steindachner Steindachner and Döderlein, Denks. Akad. Wiss. Wien, math.-naturw. Kl., vol. 53, pt. 1, p. 263, 1887 (name in synonymy).

Lepidotrigla maculosa (Hilt Döderlein) Steindachner and Döderlein, op. cit., p. 264 (name in synonymy).

U. S. N. M., No. 22575. Japan. Japanese Government. Length 211 mm. As Trigla büngeri.

U. S. N. M., No. 44910. Japan. Japanese Government. Length 220 to 244 mm. As Lepidotrigla büngeri. Three examples.

U. S. N. M., No. 64652. Kobe. D. S. Jordan and J. O. Snyder. Length 88 to 116 mm. Four examples.

2347

Lepidotrigla alata (Houttuyn)

Trigla alata Houttuyn, Verh. Holland. maatsch. wet. Haarlem, vol. 20, pt. 2, p. 320, 1782 (type locality? Japan). — Gmelin, Syst. Nat. Lin., pt. 1, p. 1346, 1788 (Japan). — Walbaum, Artedi Pisc., vol. 3, p. 374, 1792 (copied). — Forster, Fauna Indica, p. 16, 1795 (reference). — Schneider, Syst. Schth. Bloch, p. 12, 1801 (Japan).

2345

Lepidotrigla alata Jordan and Starks, Proc. U. S. Nat. Mus., vol. 32, p. 133, 1907 (reference). —
Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 290, fig. 240, 1913 (reference). —
Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., p. 120, 1931. —
Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, p. 283, pl. 1914 (initiata). —
Mc Culloch, Austral. Mus. Mem., no. 5, pt. 3, p. 325, Nov. 28, 1929 (reference). —
Fowler, Hong Kong Natural., vol. 2, p. 305, fig. 11, 1931 (Hong Kong). —
Matsubara and Hiyama, Journ. Imp. Fisher. Inst. Tokyo, vol. 28, no. 1, p. 17, fig. 7, Dec. 1934 (Sagami Bay; China Sea). —
Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 650, fig. 7, 1908 (Nagasaki, Wakanoura, Misaki, Kobe, Tsushima, Tsuruga, Onomichi).

— Izuka and Matsumura, Cat. Zool. Spec. Tokyo Imus., Vertebr., p. 121, 1920 (Nagasaki).

— Jordan and Hubbs, Mem. Carnegie Inst., vol. 10, no. 2, p. 288, June 27, 1925 (Tokyo; Shizuoka; Osaka).

Dactyloptera japonica Lacépède, Hist. Nat. Poiss., vol. 3, p. 325, 1802 (on Trigla alata Houttuyn).

Trigla bürgeri Schlegel, Fauna Japonica, Poiss., p. 35, pl. 14, figs. 1–2, 1843 (type locality, Bay of Nagasaki).

Trigla burgeri Richardson, Ichth. China and Japan, p. 218, 1846 (Hong Kong, China) — Bleeker, Verh. Batavia Genoot. (Nat. Ichth. Japan), vol. 25, p. 11, 1853 (reference); (Verh. Ichth. Japan), vol. 26, Sp. 4, 73, 1854 (Nagasaki); Nat. Tijds. Ned. Indië, vol. 20, p. 235, 1859-60 (Nagasaki).

Trigla bürgeri Günther, Cat. Fish. Brit. Mus., vol. 2, p. 198, 1860 (China). — Steindachner and Döderlein, Denks. Akad. Wiss. Wien, Math.-naturw. Kl., vol. 53, pt. 1, p. 261, 1887 (Tokyo; Nagasaki). — Byström, Bih. Kon. Sv. Vet. Akad. Handl., Stockholm, vol. 13, afd. 4, No. 4, p. 21, 1887 (Nagasaki).

— Steindachner, Ann. Naturh. Hofmus. Wien, vol. 11, p. 205, 1896 (Japan). — Ishikawa and Matsuura, Cat. Fish. Mus. Tokyo, p. 47, 1897.

Lepidotrigla büürgeri Jordan and Snyder, Annot. Zool. Jap., vol. 3, p. 107, 1901 (reference) (error).

Lepidotrigla vergeri Laville-Kent, Great Barrier Reef, pp. 292, 370, 1893 (Queensland) (error).

U. S. N. M., No. 72140. Nagasaki, Japan. Albatross Collection 1906. Length 125 to 158 mm. Two examples. Humeral spine 1 1/8 in snout.

U. S. N. M., No. 86457. China. A. de C. Sowerby. Length 282 mm. Humeral spine long as snout.

2350

Lepidotrigla japonica (Bleeker)

Prionotus japonicus Bleeker,
Verh. Batavia. Genoot. (Nat.
Geneesk. Japan), vol. 26, fyt. 5,
75, pl. 5, figs. 1a-b, 1857
(Nagasaki); Act. Soc. Ind.
Neerl., vol. 5, No. 9, p. 2, 1858-59
(Nagasaki).
(Nat. Tijds. Ned. Indie, vol. 6, p. 398;
1854 (type locality, Nagasaki).

Lepidotrigla japonica Steindachner and Döderlein, Denkss. Akad. Wiss. Wien, vol. 53, pt. 1, p. 264, 1887 (Osima; Kagoshima). — Jordan and Snyder, Annot. Zool. Japan., vol. 3, p. 107, 1901 (reference). — Jordan and Starks, Bull. U. S. Fish Comm., vol. 20, p. 596, fig. 1902
Proc. U. S. Nat. Mus., vol. 32, p. 133, 1907 (name). — Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 654, 1908

— Franz, Abhandl. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 79, pl. 2, fig. 1, 1910 (Aburatsubo).

— Jordan and Hubbs, Mem. Carnegie Inst., vol. 10, No. 2, p. 289, 1925

— Matsubara and Hijama),
Journ. Imp. Fisher. Inst.,
Tokyo, vol. 28, no. 1, p. 21, fig. 8,
Dec. 1932 (Nagasaki, Misaki,
Tokyo Bay).

Lepidotrigla japonica Jordan), Tanaka),
Snyder, Journ. College Sci.,
Tokyo, vol. 33, p. 291, fig. 241
(copied), 1913 (reference) (error).

Lepidotrigla avis (Döderlein)
Steindachner and Döderlein, Denkschr.
Akad. Wiss. Wien, math.-naturw.
Kl., vol. 53, pt. 1, p. 264, 1887
(name in synonym).

U. S. N. M., No. 51425, Misaki, Japan. D. S. Jordan and J. O. Snyder. Length 133 mm.

U. S. N. M., No. 72144. Kagoshima. Albatross Collection. Length 109 mm. Two examples.

U. S. N. M., No. 72145. Nagasaki. Albatross Collection. Length 114 to 120 mm. Two examples.

2355

Lepidotrigla kishinouyi Snyder

Lepidotrigla kishinouyi Snyder, Proc. U. S. Nat. Mus., vol. 40, p. 543, 1911 (type locality: Kagoshima); vol. , p. 56, fig. 3, 1914.

— Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 291, 1913 (reference).

2356

Lepidotrigla kishinouyei
Katsuura and Hiyama, Journ.
Imp. Fisher. Instt., Tokyo, vol.
28, no. 1, p. 41, fig. 15, Dec. 1933
(Nagasaki; China Sea; Misaki).

2357

U. S. N. M., No. 74584. Kagoshima.
Albatross Collection. Paratype.
Length 95 mm.

The following species are not studied critically and have been included provisionally, or until sufficient materials are forthcoming to establish their relationship.

~~Lepidotrigla kishinouyi Snyder~~

Lepidotrigla abyssalis Jordan and Starks

Lepidotrigla abyssalis Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 595, fig., 1902 (type locality, Suruga Bay, in 50 to 60 fathoms); Proc. U. S. Nat. Mus., vol. 32, p. 133, 1907 (reference) — Franz, Abhandl. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 79, 1910 (Enoshima, 80 meters) — Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 292, fig. 242, 1913 (reference).

— Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 654, 1908 (Suruga Bay).

— Jordan and Thompson, Mem. Carnegie Inst., vol. 6, no. 4, p. 284, fig. 54 (copied), Sept. 1914 (Osaka).

— Izuka and Matsuura, Cat. Zool. Spec. Tokyo Univ., Oct. 1920, p. 122, 1920 (Ishinomaki).

— Jordan and Hubbs, Mem. Carnegie Inst., vol. 10, no. 2, p. 289, June 27, 1925 (Iwaki).

— Matsubara and Hayama, Journ. Fish. Inst. Tokyo, vol. 28, no. 1, p. 32, fig. 12, Dec. 1932 (Nagasaki; Iwaki).

2373

Lepidotrigla japonica (not Lyström, Bih. K. Sv. Vet. Akad. Handl., vol. 13, afd. 4, no. 4, p. 23, 1887 (Nagasaki).

Depth 4; head 2 4/5, width 2.

Snout 1 6 in head; eye 1 4, 1 4 in snout, maxillary 1 at 4 in eye; interorbital 1 5, 1 7 in 1 + 10, of which 7 - 7 lower rudimentary; rhinaria, 5 1/2 in orbit.

Seen above end of snout nearly truncate; rostral extension broad, each with rather broad outer spine and several small accessory ones inside; interspace between apices of largest spines subequal with orbit. Supraorbital spines rudimentary; rudimentary postorbital spine; parietal ridges rudimentary, and sharp, serrated ridges run back from postorbital furrow; nuchal spines and ridges feeble; short, narrow, cross-furrow above hind edge of

eye, not extending across top of head. Humeral spine little less than eye.

Scales 59 in lateral line.

dorsal rays 23.

D. IX – 15, second spine 1 3/4 in head; third spine 2 1/2; A. 15; fourth ray 3 2/5; caudal 1/5, emarginate; least depth of caudal peduncle 6; pectoral 1 1/3; ventral 1 2/5.

In life bright red, somewhat paler below. First dorsal with large brick-red blotch posteriorly. Length 150 mm.

(Matsubara and Hiyama)

Japan.

Lepidotrigla altivelis Katsubara and Hijama

Lepidotrigla altivelis Katsubara and Hijama, Journ. Imp. Fisher. Inst. Tokyo, vol. 28, p. 47, fig. 17, 1932 (type locality, Zenra-kandô, Kyôsen, Japan).

2377

Lepidotrigla argus Ogilby

Lepidotrigla argus Ogilby, New Fish. Queensland Coast, p. 123, Dec. 20, 1910 (type locality, Between S. Hill and Cape Gloucester, Queensland; and Cape Byron, New South Wales, in 13 to 73 fathoms); Comm. Fish. Fisher. Queensland, p. 1915 (Moreton Island; Cape Moreton; North Reef; Low Bluff; Cartwright Point).

— Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 165, July 7, 1925 (reference). — Mc Culloch, Austral. Mus. Mem., no. 5, pt. 3, p. 395, Nov. 28, 1929 (reference).

2379

Lepidotrigla brachyoptera

Hutton

Lepidotrigla brachyoptera Hutton,
Fishes of New Zealand, p. 27, 1872
(type locality, Wellington Harbour).

— Waite, Rec. Canterbury Mus.,
vol. 1, No. 1, p. 29, April 25, 1907
(reference).

2379

Lepidotrigla brevispinis Matsubara and Hijama

Lepidotrigla brevispinis Matsubara and Hijama, Tokyo, Journ. Imp. Fisher. Inst., vol. 28, p. 52, fig. 19, 1932 (type locality, Misaki).

2380

Lepidotrigla calodactyla Ogilby

Lepidotrigla calodactyla Ogilby, New Fish. Queensland Coast, p. 125, Dec. 20, 1910 (type locality, North Reef, Capricorn Group, Queensland, in 70 fathoms). — Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 165, July 7, 1925 (reference). — Mc Culloch, Austral. Mus. Mem., no. 5, pt. 3, p. 395, Nov. 28, 1929 (reference).

2371

Lepidotrigla eydouxi Sauvage

Lepidotrigla eydouxi Sauvage, Nouv. Arch. Mus. Hist. Nat., Paris, ser. 2, vol. 1, p. 156, 1878 (type locality, Manila). pl. 2, fig. 13 (scale)

— Jordan and Richardson, Philippine Journ. Sci., vol. , p. 53, 1910 (reference).

snout little longate, upper profile concave. Eye large, 1/2 in snout. Interorbital concave, less than eye, strongly granular. Preorbital prolonged in 2 short points, slight and smooth, edge of bone finely denticulate. No spines on granular orbital rim. No salient line between preorbital and preopercular angles. Cheek strongly granular. Vertex ends in long point, keeled, granular. Strong horizontal line to preopercle, spineless. Operle with feeble, granular spine. Shoulder strongly granular, with feeblest point.

Scales large, front border rounded, hind border with 2 long points as / at each outer

end, and 5 or 6 intermediate short points. Line of back with strong spines, depressed posteriorly.

D. VII, 14, first 2 spines strongly granular, second spine higher than body depth; A. 13; pectoral reaches seventh anal ray. Length 140 mm.

(Sauvage.)

Philippines.

Lepidotrigla faurei Gilchrist and Thompson

Lepidotrigla faurei Gilchrist and Thompson, Ann. South African Mus., vol. 13, p. 75, 1914 (type locality, off Natal coast; Tugela River mouth N. by W. $\frac{3}{4}$ W. 15$\frac{1}{2}$ miles; Tugela River mouth N. 2$\frac{1}{2}$ miles; 40 to 63 fathoms). — Barnard, Ann. South African Mus., vol. 21, p. 938, 1925 (Natal; Zululand; type* of L. faurei) ~~and L. natalensis~~.

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 486, 1934 (Natal). — L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, pt. 4, p. 323, pl. 16a, pl. 18a, pl. 19, a, c, 1934 (Natal, off Tugela mouth, 20 to 63 fathoms).

Depth 4; head 3 1/10, width 1 1/5.
Snout 2 1/4 in head; eye 3 1/5, 1 1/2
in snout, greater than interorbital;
maxillary reaches 1/2 in eye,
length 2 2/5 in head; teeth in
villiform bands in jaws, none
on palate or tongue; interorbital
4/5, deeply concave; opercle
ends in strong spine, also
larger humeral spine. Gill
rakers 2+14, of which upper
and 7 lower rudiments, clavate,
rather slender, 1 1/4 in gill filaments,
which 2 5 in eye.

Scales 50+4 in lateral line;
tubes in lateral line mostly
trifid; 3 scales above, 11 below,
to predorsal. Along each side
of dorsal 27 basal alveoli.
Caudal largely covered with
small scales. Scales with 11 to 16

basal radiating striae; 10 to 22 short apical denticles; circuli fine, obsolete apically.

D. IX - 16, I, third spine 1 1/2 in head, third ray 2; A. 17, I, fourth ray 3 1/8; caudal 1 3/5, nearly truncate; least depth of caudal peduncle 5 1/2; pectoral 1, rays 9, I - III.

Vinaceous buff, scales on back above with very slight brownish tinge, also upper surface of head. Iris gray. Fins all pale, like body color, except dark neutral brown rayed pectoral, which area also with obscure blackish blotches or spots.

2387

A. h. S. P., one example. Durban, Natal. H. W. Bell Marley. 1931.
Length 158 mm.

Lepidotrigla grandis Ogilby

Lepidotrigla grandis Ogilby, New Fish. Queensland Coast, p. 122, Dec. 20, 1910 (type locality, Off Cape Moreton, South Queensland, 73 fathoms). — Mc Culloch and Whitley, Mem. Queensland Mus.; vol. 8, pt. 2, p. 165, July 7, 1925 (reference). — Mc Culloch, Austral. Mus. Mem., no. 5, pt. 3, p. 395, Nov. 28, 1929 (reference).

2389

Lepidotrigla kiönä Matsubara and Hiyama

Lepidotrigla kiönä Matsubara and Hiyama, Journ. Imper. Fisher. Inst., Tokyo, vol. 28, p. 36, fig. 13, 1932 (type locality, Misaki; Sunuga Bay).

2370

Lepidotrigla modesta Waite

Lepidotrigla modesta Waite, Austral. Mus. Mem., No. 4, pt. 1, p. 106, pl. 23, Dec. 23, 1899 (type locality, Off Broughton Island, New South Wales).

— Mc Culloch, Austral. Mus. Mem., No. 5, pt. 3, p. 395, Nov. 28, 1929 (reference); Fish. New South Wales, ed. 3, p. 93, pl. 39, fig. 346 b, 1934.

2391

Lepidotrigla multhalli Iredale

Lepidotrigla multhalli Iredale, Proc. Linn. Soc. New South Wales, vol. 8, pt. 4, p. 460, Feb. 21, 1884 (type locality, Off Port Jackson, in 40 fathoms). — Waite, Austral. Mus. Mem., No. 4, pt. I, p. 105, pl. 22, Dec. 23, 1899 (New South Wales).

— Iredale & Cullock, Austral. Mus. Mem., No. 5, pt. 3, p. 395, Nov. 28, 1929 (reference); Fish. New South Wales, ed. 3, p. 93, 1934.

Lepidotrigla multispinosus) . L. B. Smith

Lepidotrigla multispinosus) . L. B. Smith; Trans. Roy. Soc. South Africa, vol. 22, pt. 4, p. 326, pls. 19 and 20 ~~figs~~, 1934 (type locality, "probably from Natal).

depth 4; head 3. Nasal 2 in
head; eye 4, 1½ in transv.;
postfil orb. margin eye, length
2 in head; in auth. perhaps
superior, lower pm included;
bifurcate tect. in trunk in
both jaws, wider on upper;
palate edentulous, interpalatal
4 in head, deeply concave.
Gill rakers 4 + 5, upper el
rudiments; length 5 in eye.
Dorsal spines broadly obtuse,
interspace 3 in head; 2 small
antero-supraorbital spines, and
larger poster-supraorbital spine,
pair of weak parietal spines
and pair of larger occipital
spines; short, deep groove at
upper hind edge of orbit, con-
tinuous, angularly bent back-
wards across occiput; distinct

ridge on lower edge of preopercle, 1 1/3 times eye, slightly oblique downwards to angle, at which no spine; humeral spine 3 in head.

Scales 59 in lateral line. Breast naked. Scales ctenoid to below pectoral base, ventral scales with single large denticle. Pores of lateral line with 4 to 7 branches.

D. VIII-15, second and third spines subequal or 1 4/5 in head, fifth to eighth rays 3 1/2; D. 16, opposite soft dorsal, caudal 1 3/5, nearly truncate; least depth of caudal peduncle 7 1/8; pectoral 1 1/5 in head, rays 11-III, longest or upper detached ray 1 2/3; ventral rays I, 5.

Uniform red brown. Pectoral dark.

Length 160 mm.

(). L. B. Smith.

batal. Known by the strong lower preopercular heel, 10 or more spines on each preorbital and the pectoral less than head.

2376

Lepidotrigla natalensis Gilchrist and Thompson

Lepidotrigla natalensis Gilchrist and Thompson, Ann. South African Mus., vol. 13, p. 76, 1914 (type locality, Off the Natal coast, 40 fathoms, ~~Cape Natal to Umlaas by N. ½ E. 6½ miles~~). Tugela River ~~Barnard, Ann. South African Mus., vol. 21, p. 938, 1925~~ mouth N. by W. ½ W. 16 miles).

J. L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, pt. 4, p. 325, pl. 16 B, pl. 18 B, C., pl. 19, B, 20 - 7, 1934 (Natal, off Tugela mouth, to 63 fathoms).

Aellopos 26, 98
elongatus 98
wagneri 26
Aethoprora 400
Aetobates 136
Aetobatis 136
flagellum 137
lateriostris 137
marinari 137, 138
Aetobatus 133, 137
marinari 137

2497

Lepidotrigla faurei (not *Gilchrist and Thompson*) *Barnard*, Ann. South African Mus., vol. 21, pt. 2, p. 938, Oct. 1927 (part).

Lepidotrigla paradoxa Matsubara and Hiyama

Lepidotrigla paradoxa Matsubara and Hiyama, Journ. Imper. Fisher. Inst., Tokyo, vol. 28, No. 1, p. 19, (on Dec. 1932 Jordan and Richardson).

Lepidotrigla alata (not Houttuyn Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 650, fig. 7, 1908 (Nagasaki; Wakamoura; Misaki; Kobe; Tsushima; Tsuruga; Owmichi).

2399

Lepidotrigla phalaena (Cuvier)

Trigla phalaena Cuvier, Hist. Nat. Poiss., vol. 4, p. 83, Nov. 1929 (type locality, "Mer des Indes (Péron)".
— Swainson, Nat. Hist. Animals, vol. 2, p. 262, 1839 (reference).

Lepidotrigla phalaena Günther, Cat. Fish. Brit. Mus., vol. 2, p. 197, 1860 (copied).

— McCulloch, Austral. Mus. Mem., No. 5, pt. 3, p. 394, Nov. 28, 1929 (reference).

2400

Lepidotrigla smithii Regan

Lepidotrigla smithii Regan, Ann. Mag. Nat. Hist., London, ser. 7, vol. 15, p. 22, 1905 (type locality, Inland Sea of Japan). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 32, p. 133, 1907 (reference).

Lepidotrigla sphinx (Cuvier)

Trigla sphinx Cuvier, Hist. Nat. Poiss., vol. 4, p. 83, nov. 1829 (type locality, "mers des Indes" Péron).

Lepidotrigla sphynx Günther, Cat. Fish. Brit. Mus., vol. 2, p. 197, 1860 (copied).

Lepidotrigla sphinx Mc Culloch, Austral. Mus. Mem., 20. 5, pt. 3, p. 394, nov. 28, 1929 (reference).

2402

Lepidotrigla stigmapteron Fowler

Lepidotrigla stigmapteron Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 487, fig. 46, 1934 (type locality, Durban, Natal).

depth 1/2 in. at base; width 1 3/5 in. Snout 2 in. in length; orbit 3 1/2 in.; eye 1 4/5, 1 1/2 in. in diameter, equal to long interorbital; maxillary reaches opposite front of eye, length 2 1/2 in. length in villiform bands on jaws, 5 transversely; small patch of villiform teeth on vomer; interorbital 5 +, very deeply concave; strong preorbital spine each side of snout; supraocular spines anterior, small, 2 in number; preocular spine 1/2 of orbit; bones of head finely rugose striate. Gill-rakers 1 + 11, lanceolate, slightly less than gill filaments or 1/3 of eye.

Scales 59 in lateral line, large, narrowly imbricated;

2 above to soft dorsal origin, 10 below, 5 predorsal. Supra-scapular spine moderate and humeral spine longer than opercular. Caudal largely covered with small scales from base, other fins, chest and breast naked. Along spinous dorsal base 15 low spines each side and 16 along each side of soft dorsal base. Scales with 7 or 8 basal radiating striae, fin edge scalloped; 16 to 22 short apical denticles irregularly biserial, circuli fine.

D. $\frac{VIII}{III}$ - 17, $\frac{I}{I}$, third spine $1\frac{2}{5}$ in head, third ray $1\frac{7}{8}$; A. 17, $\frac{I}{I}$, third ray $2\frac{2}{5}$; caudal 1, concave behind; least depth of caudal peduncle $4\frac{2}{5}$; ventral with spine

and 5 rays; pectoral 3 in combined head and body without caudal, rays 10 — III.

Head and body brownish above, under surfaces whitish. Iris neutral gray. Fins all pale. Spinous dorsal with large dark brown round blotch, large as eye, on fin posteriorly. Soft dorsal with 3 or 4 brownish bars on each fin ray. Caudal with 4 very indistinct or slightly darker transverse bars. Pectoral with longest rays and membranes neutral black terminally. Anal whitish with median dark brown longitudinal band.

240C

A. N. S. P., No. 54803. Durban, Natal. H. W. Bell Marley. Length 119 mm. Type.

2407

Lepidotrigla teraoi Imatubara and Hijama

Lepidotrigla teraoi Imatubara and Hijama, Journ. Imp. Fisher. Inst., Tokyo, vol. 28, p. 29, fig. 11, 1932 (type locality, Tokyo Bay).

Lepidotrigla truncata Matsubara and Hiyama

Lepidotrigla truncata Matsubara and Hiyama, Journ. Imp. Fisher. Inst., Tokyo, vol. 28, No. 1, p. 46, fig. 16, 1/1 dec. 1932. (Type locality, Nagasaki).

2407

Lepidotrigla vanessa (Richardson)

Trigla vanessa Richardson, Proc. Zool. Soc. London, p. 97, Nov. 1839 (type locality, Port Arthur, Tasmania); Trans. Zool. Soc. London, vol. 3, p. 83, pl. 5, fig. 1,

Lepidotrigla vanessa Günther, Cat. Fish. Brit. Mus., vol. 2, p. 197, 1860 (type).

— Waite, Rec. Canterbury Mus., vol. 1, no. 1, p. 29, April 25, 1907 (reference).

— Mc Culloch, Austral. Inst. Mem., No. 5, pt. 3, p. 394, Nov. 28, 1927 (reference).

Pachytrigla paradoxa (Matsubara and Hiyama

Lepidotrigla paradoxa Matsubara and Hiyama, Journ. Imp. Fisher. Inst., Tokyo, vol. 28, no. 1, p. 19, fig. 7, Dec. 1932 (type locality, Kumamoto).

Lepidotrigla alata (not Houttuyn) Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 650, fig. 7, 1908.

differs from Pachytriglа
marisinensis in tubes of the
lateral line, each shown as a
simple fore by Jordan and
Richardson, as well as by Mat-
subara and Hiyama. Though
the former show the anterior
scales of the lateral deep and
narrowly imbricated, the latter
two authors show them similar
to the other body scales. All
these writers also show the
series along the first dorsal base
like those along the second
dorsal base. If this is
correct the species then perhaps
should remain in Lepidotrigla.

2420

Genus Trigla Linnaeus

Trigla Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 300, 1758. (Type Trigla lyra Linnaeus. Designated by Jordan and ~~Evermann, Fishes, pt. 1, p. 541, 1900~~ Gilbert, Bull. U. S. Nat. Mus., No. 16, p. 733, 1883.)

Microtrigla Kaup, Archiv Naturg., p. 86, 1873. (Type Trigla papilio Cuvier. Designated by Jordan, Genera of Fishes, pt. 3, p. 369, 1919.)

Chelidonichthys Kaup, Archiv Naturg., p. 87, 1873. (Type Trigla lineata Linnaeus, designated by Jordan, Genera of Fishes, pt. 3, p. 370, 1919.)

Lyrichthys Kaup, op. cit., p. 88. (Type Trigla lyra Linnaeus, designated by Jordan, op. cit., p. 369.)

2422

Aspitrigla Fowler, Amer. Mus. Novit., New York, No. 162, p. 5, March 31, 1925. (Type Trigla cuculus Linnaeus, orthotypic.

Triglaporus J. L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, pt. 4, p. 333, 1934. (Type Trigla (Triglaporus africana J. L. B. Smith, orthotypic.)

Head parallelopiped, with upper surface and sides entirely bony. Snout usually long, well inclined. Eye elevated, median or little postmedian in head. Mouth low, nearly horizontal. Maxillary reaches ~~half way to~~ below eye. Teeth villiform, in both jaws and usually on vomer, palatines toothless. Pseudobranchiae present. Branchiostegals 7. Air bladder well developed, usually with lateral muscles and sometimes partially divided internally by partitions. Armature of head variable, at least spiny points usually present. Scales very small, 100 more in lateral series, those of lateral line sometimes

enlarged. Dorsals 2, usually separated and spinous fin higher and shorter at base than soft dorsal. Anal like second dorsal. Caudal small. Pectoral various, with 3 detached rays below. Ventral moderate.

2425

Trigla africana) · L. B. Smith

Trigla (Triglaporus) africana
J. L. B. Smith, Trans. Roy. Soc.
South Africa, vol. 22, pt. 4, p.
334, pl. 23, 1934 (type locality,
Cape St. Blaize, 26 to 33 fathoms;
Algoa Bay, 40 fathoms; Port
Alfred).

Trigla lineata (not Bloch)
Barnard, Ann. South African
Mus., vol. 21, pt. 2, p. 943, Oct. 1927
(Agulhas Banks; Algoa Bay; 20
to 40 fathoms).

depth 4 ½ to 5; head 3 ½ to 3 ⅝.
Snout 2 ⅝ in head; eye 1 ½ to
1 ¾, 2 in snout; nostril very
near tip; lower hind edge of
eye; no vomerine teeth; inter-
orbital 4 to 4 ½ in head, deeply
concave. Gill rakers for 8.

Frontal spines not developed,
front of snout rounded or with
slight median concavity; 2 to 4
backwardly radiating antero-
superorbital ridges, each
ending above orbital margin in
small spine; 1 to 3 median supero-
~~ridges~~ orbital spinate
ridges; without cross from
behind; 1 to 3 occipital spines;
preoperculur and opercular
spines very feeble; humeral
spine very short.

Scales 67 to 70 in lateral line

each bearing 2 to 5 spines. Scales very small, strongly ctenoid above lateral line, cycloid on ventral surface. Breast partly or entirely scaly.

D. X - 15 or 16, second spine $1\frac{1}{3}$ to $1\frac{2}{5}$ in head, soft rays $2\frac{1}{2}$; A. 15 or 16, opposite soft dorsal; caudal $1\frac{1}{10}$, slightly emarginate; least depth of caudal peduncle $5\frac{2}{3}$; pectoral $1\frac{1}{4}$ to $1\frac{1}{3}$ times head or $2\frac{3}{4}$ in fish without caudal, reach fourth to fifth dorsal ray, upper or longest detached ray $1\frac{1}{10}$ to $1\frac{1}{5}$ in head or tip reaches posterior third of ventral; ventrals 1 to $1\frac{1}{5}$ times head, reach bases of second to fourth anal rays.

Red brown, mottled and spotted, with 4 to 7 faint cross bars. Spinous and soft dorsal and caudal with irregular blotches. Pectoral blush, with irregular cross mottlings, detached rays with several brownish blotches. Ventral reddish. Length 230 mm.

(J. L. B. Smith.)

South Africa. Said to differ from Trigla lineata in its scaly breast, lower edges of preorbitals smooth, smaller eye, longer pectoral, and fewer dorsal spines.

2429

Genus Curvupiscis Whitley

Curvupiscis Whitley, Australian Zoologist, vol. 6, pt. 4, p. 327, Feb. 13, 1931. (Type Curvupiscis volucer Whitley, orthotypic.

Bands of teeth on jaws and vomer; none on palatines. Interorbital concave. Head not very rugose. Orbit with 2 spines at front edge. Preorbital extended into 3 small spines on each side of snout. Gill rakers slender, less than half of eye. Scales very small, over 100 transverse rows. Lateral each side of both dorsals 23 spinigerous bucklers. First dorsal spine very slightly rugose. No fringent anal spine. Pectoral longer than head. Coloration reddish.

Apparently differs from Chelidonichthys kumu, with which the species were formerly associated, in the less spiny head, shorter scapular spine, dorsal bucklers and coloration.

Analysis of Species

a.' Rostral extension ends in several free spines; breast naked.

b.' Eye distinctly greater than interorbital.

c.' Scales 180 in lateral line; pectoral reaches $\frac{3}{5}$ to caudal. kumu.

c.² Scales 65 in lateral line; pectoral nearly reaches caudal. ischyrus.

b.² Eye equals interorbital width. capensis.

a.² ~~[illegible]~~ Rostral extension ends in a single exposed spine; breast pitted or scaly. guebetti.

Corrupisis

~~Chelidonichthys~~ kumu (Cuvier)

~~Chelidonichth~~

Trigla kumu Cuvier, Hist. Nat. Poiss., vol. 4, p. 53, 1829 (type locality, New Zealand). — Lesson, Voy. Coquille, Poiss., p. 214, pl. 19, 1830 (New Zealand, "la grand Baie des Iles"). — Jenyns, Zool. Voy. Beagle, pt. 4, Fish, p. 27, 1842. (Bay of Islands, New Zealand). — Bleeker, Nat. Tijds. Ned. Indië, vol. 21, p. 53, 1860 (reference). — Knerr, Reise Novara, Fische, p. 124, pl. 6, fig. 2, 1865 (Cape of Good Hope). — Schmeltz, Cat. Mus. Godeffroy, p. 70. — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 204, 1860. — Steindachner, Sitz. Akad. Wiss. Wien, Math.-naturw. Kl., vol. 53, pt. 1, p. 443, 1866 (Port Jackson).

— McCoy, Prodr. Zool. Victoria, dec. 1, pl. 5, 1880. — Castelnau, Proc. Linn. Soc. New South Wales, vol. 3, p. 380, 1880 (Port Jackson). — Macleay, Proc. Linn. Soc. New South Wales, Zool. 5, pt. 4, p. 590, 1881 (Port Jackson). — McCoy, Jenkins-Woods, Fisher. New South Wales, p. 68, pl. 27.

— Pöhl, Cat. Mus. Godeffroy, no. 10, p. 32, 1884 (South Seas). — Hyström, Bih. Kon. Sv. Vet. Akad. Handl., vol. 13, afd. 4, no. 4, p. 21, 1887 (Nagasaki). — Steindachner and Döderlein, Denkschr. Akad. Wiss. Wien, math.-naturk. Cl., vol. 53, pt. 1, p. 265, 1889 (no locality). — Sherrin, Handb. Fish. New Zealand, p. 36. — Ogilby, Edible Fish. New South Wales, p. 109, pl. 29, 1893.

— Ishikawa and Matsmura, Cat. Fish. Imp. Mus., Tokyo, p. 47, 1895. — Steindachner, Ann. Hofmus. Wien, vol. 11, p. 205, 1896 (Japan). — Elera, Cat. Fauna Filipinas, vol. 1, p. 499, 1897 (Luzon; Mindoro).

— Gilchrist, Marine Investig. South Africa, vol. 1, p. 120, 1902 (reference).

— Stead, Edible Fish. New South Wales, p. 14, pl. 79, 1908.

— Roughley, Fishes of Australia, p. 184, pl. 64, 1916.

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 75, p. 44, 1923 (Victoria).

— Pietschmann, Bull. Bishop Mus., No. 73, p. 18, 1930 (near Hapoopoo, west coast of Hawaii).

2135

Trigla kumu var. *kumu* (Günther), Cat. Fish. Brit. Mus., vol. 2, p. 204, 1860 (New Zealand; Australia).

Chelidonichthys kumu Jordan and Evermann, Rep. U. S. Fish Comm., p. 488, 1895 (1896) (note). —Waite, Austral. Mus. Mem., No. 4, pt. 1, p. 108, Dec. 23, 1899 ("Thetis" stations).

—Jordan and Starks, Proc. U. S. Nat. Mus., vol. 32, p. 133, 1907 (note).

—Waite, Rec. Canterbury Mus., vol. 1, No. 1, p. 29, April 25, 1907 (reference).

—Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 656, 1908 (Kobe, Tokyo, Nagasaki, Kagoshima, Kawatana, Iwasaki, Aomori, Tsuruga, Wakamoura, Hakodate, Matsushima, Port Arthur, Port Jackson).

—Jordan and Snyder, Annot. Zool. Japan., vol. 3, p. 107, 1901 (reference).

— Franz, Abhandl. math.-phys. Kl. Kais. Bayer. Akad. Wiss., vol. ✱10, Suppl. Band 1, p. 79, 1910 (Sagami Bay; Oshima; Aburatsubo); — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, art. 1, p. 284, 1913 (reference). — Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, p. 282, Sept. 1914 (Osaka, Misaki, Hakodate).

— Iguka and Matsuura, Cat. Zool. Spec. Tokyo Mus., Vertebr., p. 121, 1920 (Tokyo).

— Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, p. 288, June 27, 1925 (Tokyo, Osaka, Toba, Tateku Island, Mikawa Bay, Choshi, Toyama, Misaki, Miyazu).

— Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 941, Oct. 1927 (False Bay, Agulhas Bank, Natal, Zululand, & 100 fathoms). — Fowler, Mem. Bishop Mus., vol. 10, p. 302, 1928 (copied).

— McCulloch, Austral. Mus. Mem., no. 5, pt. 3, p. 394, Nov. 28, 1929 (reference).

— Fowler, op. cit., vol. 11, no. 5, p. 350, 1931 (reference).

— Matsubara and Hujama, Journ. Fisher. Dept., Tokyo, vol. 28, no. 1, p. 5, fig. 1, Dec. 1932 (Tateyama, Tokyo Bay, Honzon).

— hic Cullock, Fish. New South Wales, ed. 3, p. 93, pl. 39, fig. 348. 1934.
— Fowler, op. cit., vol. 11, no. 6, p. 431, 1934 (reference).

— J. L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, pt. 4, p. 328, 1934 (reference).

Trigla papilionacea (Parkinson Cuvier, Hist. Nat. Poiss., vol. 4, p. 50, Nov. 1929 (type locality, New Zealand).

Trigla papillionacea Swainson, Nat. Hist. Animals, vol. 2, p. 262, 1839 (reference).

2440

Trigla peronii Cuvier, Hist. Nat. Poiss., vol. 4, p. 53, 1829 (type locality, Cape of Good Hope).

— Pappe, Synop. Edible Fish. Cape of Good Hope, p. 13, 1853 (Table Bay). — Bleeker, Nat. Tijds. Ned. Indie, vol. 21, p. (50, 53) 64, 1860 (Cape of Good Hope).

— Gilchrist, Marine Investig. South Africa, vol. 1, p. 120, 1902 (reference).

— Swainson, Nat. Hist. Animals, vol. 2, p. 262, 1839 (reference).

2441

Trigla ferani Gilchrist and Thompson, Ann. South African Mus., vol. 3, pt. 3, p. 78, May 7, 1914 (natal); Ann. Durban Mus., vol. 1, pt. 4, p. 413, May 21, 1917 (reference).

Trigla spinosa Mc Clelland, Journ. Calcutta Nat. Hist. Soc., vol. 4, p. 396, pl. 22, fig. 2, 1844 (type locality, China).

Trigla kumu var. spinosa Günther, Cat. Fish. Brit. Mus., vol. 2, p. 204, 1860 (China; Hong Kong).

Cuvieus spinosus Whitley, Australian Zoologist, vol. 6, pt. 4, p. 328, Feb. 13, 1931 (reference).

2443

Trigla capensis (not Cuvier) Castelnau, Invert. Poiss. afrique australe, p. 5, 1861 (part).

Chelidonichthys pictipinnis Kaup, Archiv Naturg., p. 87, 1873 (type locality, "Barbadoes" = Japan or Australasia).

Trigla kumu var. dorsomaculata Steindachner, Sitzb. Akad. Wiss. Wien, Math.-naturw. Kl., vol. 74, p. 26, 1876 (type locality, "Yokohama").

2444

Currupiscis volucer Whitley, Australian Zoologist, vol. 6, pt. 4, p. 328, Feb. 13, 1931 (type locality, La Perouse, Botany Bay, New South Wales).

U. S. N. M., No. 59717. Port Jackson, New South Wales. D. G. Stead. Length 138 mm.

U. S. N. M., No. 71742. Kagoshima, Japan. Albatross Collection. Length 158 to 215 mm. Four examples.

Cucumispisces ischyrus (Jordan and Thompson)

Chelidonichthys ischyrus Jordan and Thompson, Mem. Carnegie Inst., vol. 6, no. 4, p. 282, pl. 35, fig. 1, Sept. 1914 (type locality, Sagami Bay). — Matsubara and Hiyama, Journ. Fisher. Inst., Tokyo, vol. 28, no. 1, p. 7, Dec. 1932 (copied).

Cuvieri

Chelidonichthys capensis (Cuvier)

Trigla capensis Cuvier, Hist. Nat. Poiss., vol. 4, p. 55, 1829 (type locality, Cape of Good Hope).

— Pappe, Synop. Edible Fish. Cape of Good Hope, p. 13, 1853 (Table Bay). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 203, 1860 (Cape of Good Hope). — Bleeker, Nat. Tijds. Ned. Indie, vol. 21, p. 53, 1860 (reference). — Castelnau, Mém. Poiss. Afrique austral, p. 5, 1861 (Cape of Good Hope). — Reise Kner, Reise Novara, Fische, p. 124, 1866 ("Capstadt").

— Boulenger, Proc. Zool. Soc. London, p. 240, 1889 (Muscat).

— Gilchrist, Marine Investig. South Africa, vol. 1, p. 120, 1902 (reference).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 77, p. 256, 1925 (Natal).

Chelidonichthys capensis Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, p. 413, may 1917 (reference).

— Barnard, Ann. South African Mus., vol. 22, pt. 2, p. 940, text fig. 28c (head), pl. 34, fig. 3, det. 1927 (Table Bay; Agulhas Banks; Natal; in 5 to 50 fathoms). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 486, fig. 41, 1934 (Natal). — J. L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, pt. 4, p. 328, 1934 (reference). — Norman, Discovery Rep., vol. 12, p. 54, 1935 (South Africa).

2450

Primotus pusillus Castelnau, Ichthyol. Poiss. Afrique australe, p. 6, 1861 (type locality, Table Bay). — Gilchrist, Marine Investig. South Africa, vol. 1, p. 120, 1902 (reference).

2451

U. S. N. M., No. 6402. Cape of Good Hope. William Stimpson. Length 200 mm. No ridge to preorbital stay on side of cheek.

Cuviericeps

Lepidotrigla guentheri Regan

Trigla guentheri Regan, Ann. Mag. Nat. Hist., London, ser. 7, vol. 14, p. 128, 1904 (type locality, Natal coast). — Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, p. 444, May 1917 (reference).

Chelidonichthys guentheri Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 942, fig. 28 (head), Dec. 1927 (False Bay; Agulhas Bank; Natal coast; Table Bay).

→ J. L. B. Smith, Trans. Roy. Soc. South Africa, vol. 22, pt. 4, p. 328, fig. 1 (rostral spines), 1934 (note).

Lepidotrigla guentheri

depth 5- to 5 1/5; head 3 1/3 to 3 1/2. Eye 3 1/2 to 3 2/3 in head, 1 1/2 to 1 2/3 in snout, 1 1/3 times interorbital width; snout profile straight, front concave between preorbitals; interorbital concave. Gill rakers 10 or 11 (excluding rudiments). Two or 3 antero-supraorbital spines; no postorbital spine or groove; low, well marked temporal ridge; nuchal spines reaching level of first dorsal spine; preorbital with single strong spine, sometimes smaller one internally; preorbital without keel, with 3 series of radiating lines of granules, 1 anteriorly, 1 above end of maxillary, and another between latter and eye.

Scales small, 80 scales in lateral line. Breast pitted. Dorsal base with 26 or 27 spines.

D. IX - 18, second spine longest, almost smooth; A. 17; caudal feebly emarginate; pectoral reaches third or fourth soft dorsal ray, longest detached ray reaches third or quarter of ventral, which reaches anal origin.

Red, with yellow vermiculations. Silvery below. Soft dorsal pinkish along base and margin. Pectoral pinkish on outer side, olive-green on inner, with membrane between the innermost 4 rays pinkish. Other fins reddish.

Length 300 mm. (Barnard.

South Africa, Natal.

2453

Genus Pteroptrigla Waite

Pteroptrigla Waite, Mem. Austral. Mus., no. 4, pt. 1, p. 108, 1899. (Type Trigla polyommata Richardson, virtually, as Pteroptrigla Waite proposed to replace Hoplonotus Guichenot.)

Hoplonotus (not Blanchard 1851) Guichenot, Ann. Sci. Linn. Maine et Loire, vol. 9, p. 3, 1866. (Type Trigla polyommata Richardson, monotypic.)

Body elongately ovoid. Head rather large. Snout rather long, oblique. Eye elevated, little postmedian length of head, rather large. Scapular spine short. Rostral spines short. No postero-supraorbital spine. Rather large bony buckler along base of spinous dorsal. Scales very small in lateral line, which not armed with bony shields. Humeral spine long and prominent. Spinous and soft dorsal separated, former little higher. Caudal emarginate. Pectoral large, reaches well back in middle of soft dorsal and anal.

2455

Pterygotrigla polyommata (Richardson)

Trigla polyommata Richardson, Proc. Zool. Soc. London, p. 96, Nov. 1839 (type locality, Port Arthur, Tasmania); Trans. Zool. Soc. London, vol. 3, p. 87, pl. 5, fig. 2. 1849.

— Günther, Cat. Fish. Brit. Mus., vol. 2, p. 204, 1860 (type; Port Arthur), p. 524 (North Australia).

— Macleay, Proc. Linn. Soc. New South Wales, vol. 5, p. 391, 1881 (Port Jackson; Port Phillip; Western Australia).

— Klunzinger, Sitzs. Ber. Akad. Wiss. Wien, math.-naturw. Kl., vol. 80, pt. 1, p. 368, 1879 (Hobson's Bay; Port Phillip; King George Sound).

2456

Hoplonotus polyommatus Guichenot,
Ann. Soc. Linn. Maine et Loire,
vol. 9, p. , 1866.

Pterygotrigla polyommata Waite,
Austral. Mus. Mem., No. 4, pt. 1,
p. 108, Dec. 23, 1899 (Port Stephens,
Port Jackson).

— Mc Culloch, Austral. Mus. Mem., No. 5, pt.
3, p. 393, Nov. 28, 1929 (reference); Fish.
New South Wales, ed. 3, p. 93, pl. 39,
fig. 349a, 1934.

2457

? Trigla amoena Castelnau, Proc. Zool. Acclimat. Soc. Victoria, vol. 2, p. 131, May 10, 1873 (type locality, Fremantle, Western Australia).

Trigla polysticta Boulenger, Proc. Zool. Soc. London, p. (245), pl. 27, fig. 2 (dorsal plates), 1889 (Muscat) (lapsus).

Pterygotrigla picta (Günther)

Trigla picta Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 24, pl. 13, fig. 1a, 1880 (type locality, Juan Fernandez).

Pterygotrigla picta MacCulloch, Aust. Mus. Mem., No. 5, pt. 3, p. 393, Nov. 28, 1929 (reference).

Trigla guttata Philippi; Anal. Univ. Chile, vol. 2, p. 375, 1896 (type locality, Juan Fernandez).

Pterygotrigla andertoni Waite; Proc. New Zealand Inst., vol. 1, p. 26, 1910 (type locality, Bay of Plenty, New Zealand).

2490.

Genus Atohime Jordan and Starks

Atohime Jordan and Starks, Proc.
U. S. Nat. Mus., vol. 32, p. 13, 1907.
(Type Trigla hemisticta Schlegel,
orthotypic.)

Genus Lepidotrigla Günther

Lepidotrigla Günther, Cat. Fish.
Brit. Mus., vol. 2, p. 196, 1860.
(Type Trigla aspera Swainson,
monotypic.)
Palaeichthys Kaup, Archiv Naturg.,
p. 90, 1873. (Type Trigla aspera
Swainson, designated by Jordan,
Genera of Fishes, pt. 3, p. 370,
1919.)

Body elongately ovoid. Head moderate. Snout moderate, profile nearly straight. Eye large, elevated, little pre-dorsal in head. Mouth little large, low, little inclined. Maxillary extends below eye. Teeth in bands in jaws, present or not on vomer and none on palatines. Scapular spine moderate. Opercle with very long, conspicuous spine. Humerall spine short, small. Crescentic rugose plate before first dorsal spine base, and 3 rounded ones behind along each side of spinous dorsal base, or last between bases of fourth and fifth spines. Scales very small, about 105. Spinous dorsal little higher than soft fin, with 8 spines and rays 10. Anal with spine and 11 rays.

Genus Otohime Jordan and Starks

Otohime Jordan and Starks,
Proc. U. S. Nat. Mus., vol. 32, p. 13,
1907. (Type Trigla hemisticta
Schlegel, ~~monotypic~~ orth.)

Pectoral lanceolate. Pectoral moderate, upper of detached rays nearly long as fin. Ventral moderate.

Differs greatly from Pteroscorpis, with which Matsubara and Hyama have identified it, in the greatly smaller scapular and humeral spines, and especially in its very greatly enlarged and elongated opercular spine.

2493

Atherina hemisticta (Schlegel)

Trigla hemisticta Schlegel, Fauna Japonica, Pois., pt. 1. 36, pl. 14, figs. 3-4 (head), pl. 14 B, 1843 (type locality, Japan). — Richardson, Ichth. China and Japan, p. 218, 1846 (China). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 201, 1860 (copied). — Nyström, Bih. Kn. Vet. Akad. Handl., Stockholm, vol. 13, afd. 4, no. 4, p. 21, 1887 (Nagasaki). — Day, Fishes of India, Suppl., p. 791, 1888; Fauna British India, Fishes, vol. 2, p. 241, 1889. — Alcock, Cat. Deep Sea Fish. Indian Mus., p. 67, 1899 (Bay of Bengal, off Ganjan coast, 98 & 102 fathoms).

Chelidonichthys hemisticus
Jordan and Snyder, Annot.
Zool. Japan, vol. 3, p. 107, 1901
(reference).

Otohime hemisticta Jordan and
Starks, Proc. U. S. Nat. Mus.,
vol. 32, p. 132, fig., 1907 (Yokoha-
ma). — Jordan and Richardson,
Proc. U. S. Nat. Mus., vol. , p. 658

— Franz, Abhandl. Bayer. Akad.
Wiss., Bd. 4, Suppl. Band 1, p. 80,
1910 (Yokohama).

Atomic

Pteygotrigla hemisticta Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 289, fig. 239, 1913 (reference).

— Matsubara and Hiyama, Journ. Imp. Fisher. Inst., vol. 28, no. 1, p. 10, figs. 2-3, dec. 1932 (Nagasaki; Enoshima).

Trigla arabica Boulenger,
Proc. Zool. Soc., London, p. 663,
pl. 1887 (type locality, Museat,
East Arabia); p. 245, pl. 27, fig. 1,
1889 (type).

U. S. N. M., No. 57564. Japan.
P. L. Jouy. Length 222 mm.