

Family Cephalacanthidae

The Long-finned Gurnards

Body elongate, partly quadrangular, tapering behind. Head quadrangular, its surface almost entirely bony. Mouth small, lower jaw included. Jaws with granular teeth, none on vomer or palatines. Interorbital deeply concave. Gill openings narrow, vertical, separated by very broad scaly isthmus. Air bladder with 2 lateral parts, each with large muscle. Vertebrae 22, of which 13 caudal. Scales bony, strongly beveled. At base of caudal 2 serrated knifelike scales. First dorsal of 4 or 5 rather

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Genus Parapristipoma Bleeker

Parapristipoma Bleeker, Arch. Néerland.
Sci. Nat. Harlem, vol. 8, 1873, p. 21. Type
Perca trilineata Thunberg, monotypic.

Body rather elongate. Preorbital narrow, edge unarmed. Preopercle edge with fine serrae. Gill rakers 24 below on first arch, rather long and slender. Chin without central groove or barbels. Scales small, more than 100 in lateral series. Snout, jaws and preorbital scaly. Soft vertical fins scaly basally. Anal with scaly sheath. Dorsals continuous, without antorse spine in front, erect spines 13 or 14, Anal spine 3, rays 8. Caudal emarginate or forked.

high, flexible spines, first one ~~of~~ or two nearly free from others and immovable spine between dorsals. Anal and second dorsal short, of slender rays. Caudal lunate, small. Pectoral divided at base in 2 parts, anterior portion about as long as head, of 6 closely connected rays and posterior or larger portion more than twice length of head, nearly reaching caudal in adult, rays very slender, simple, wide apart at tip. Ventral bases close together, fin long, pointed, inner rays shortest, of spine and 4 rays.

Handsome and singular fishes of tropical seas.

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Genus Pterocaesio Bleeker

Pterocaesio Bleeker, Verslagen Med. Akad.
Wet. Amsterdam, series 2, ^{vol. 9,} 1876, p. 153. Type
Caesio multiradiatus Steindachner,
~~orth~~otypic.

Clupeolabrus Nichols, Amer. Mus. Novitates,
no. 94, October 19, 1923, p. 2. Type
Clupeolabrus subius Nichols, monotypic.

Body elongate, slender. Upper jaw
protractile. Teeth minute and uniserial
in jaws. Scales 70 in lateral series,
in horizontal rows on body. Head above,
preopercle and opercle scaled. Dorsals
scaly. Dorsal spines 11, slender, rays
21. Anal rays 13.

Analysis of Genera

a¹ main portion of spinous dorsal
preceded by 2 free rays.

Dactyloptena.

a² main portion of spinous dorsal
preceded by a single free ray.

Daicocus.

Genus Dactyloptena Jordan and
Richardson

Dactyloptena Jordan and
Richardson, Proc. U. S. Nat. Mus.,
vol. 33, pp. 664, 665, February 28,
1908. (Type Dactylopterus
orientalis Cuvier, monotypic.)

Mastigophorus (not Joey 1832 in
Lepidoptera) Kaup, Arch. Naturg.,
vol. 39, pt. 1, p. 82, 1873. (Type
Dactylopterus orientalis Cuvier,
designated by Whitley, Records
Austral. Mus., vol. 19, no. 1, p. 96,
August 2, 1933.)

Corystion (not Rafinesque 1810) Bleeker,
Nat. Tijds. Dierk., vol. 1, p. 236, 1863.
(Type Dactylopterus orientalis
Cuvier, monotypic.)

Cirrhites murrayi Regan

Cirrhites murrayi Regan, Proc.
Zool. Soc. London, pt. 1, p. 409, pl.
66, fig. 6, 1909 (type locality,
Christmas Island).

Ebisinus Jordan and Richardson,
op. cit., p. 664. (Type Dactylopterus
cheirophthalmus Bleeker, monotypic)

differs from Cephalacanthus
in the presence of a detached
finlet before the spinous dorsal.
Lateral line wanting. Jordan
and Richardson further
divided their genus Dactyloptera
separating Ebisinus as it lacks
the detached short spine
between the elongate spine at
the occiput and the spinous
dorsal proper.

Dactyloptena papilio Ogilby

Dactyloptena papilio Ogilby, New
Fish. from Queensland coast, p.

127, 1910 (type locality, Between
Cape Moreton and Edgemoor Bay, South
Queensland, in 7 to 73 fathoms).

— Whitley, Rec. Austral. Mus., vol.

17, no. 3, p. 134, June 27, 1929

(reference). — McCulloch, Austral.

Mus. Mem., no. 5, pt. 3, p. 397,

Nov. 28, 1929 (reference).

— McCulloch and Whitley, Mem.

Queensland Mus., vol. 8, pt. 2, p.

165, July 7, 1925 (reference).

edge with 28 to 33 small denticles, then deep gash receiving strong, short, knob-like spine of subopercle, below 14 to 17 larger denticles on broad lobe. Gill rakers 7+15, of which 5 below rudiments; others luniculate, equal gill filaments or $2\frac{1}{2}$ in eye.

Scales 47 or 48 in lateral line to caudal base and 4 or 5 more on latter; 9 scales above lateral line, 17 or 18 below, 28 to 34 predorsal forward nearly to hind nostril, 12 to 14 rows on cheeks. Suprascapula denticulated. Scales with 11 to 13 basal radiating striae; apical denticles 60 to 92, small, with 5 to 7 transverse series of basal elements; circuli fine.

D. X, 14, I, fourth spine $2\frac{2}{5}$ to $2\frac{1}{2}$ in head, first ray $3\frac{1}{10}$ to $3\frac{1}{8}$; A. III, 8, I, second spine $2\frac{2}{5}$ to $2\frac{2}{3}$, second ray

Analysis of Species

a. Dactyloptena. Pectoral without large median contrasted black blotch; lateral line slopes more or less axial along side of body.

b. Snout as viewed from above with front profile as broadly obtuse angle; preopercular spines not reaching far back as ends of scapular spines.

c. Scales 45 or 46 in lateral series, 24 transversely.

orientalis.

c.² Scales 49 in lateral series, 28 transversely. procne.

b.² Snout as viewed from above with front profile horizontal or nearly so; preopercular spine tips reach far back as ends of scapular spines. gilberti.

a. Ebisinus. Middle of pectoral with contrasted large black blotch; lateral line arched below spinous dorsal and falls median below soft dorsal.

d. Black pectoral blotch spotted with yellow. cheirophthalmus.

d. Black pectoral blotch edged with white. macracanthus.

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Dactyloptena orientalis (Cuvier)

Dactylopterus orientalis Cuvier,
Règne Animal, ed. 2, vol. 2, p. 162,
April 1829 (on Mooree-godoo
Russell, Fishes of Coromandel,
vol. 2, p. 45, pl. 161, 1803, type
locality, Vizagapatam);
Hist. Nat. Poiss., vol. 4, p. 134, pl.
76, November 1829 (Mauritius,
Waigiu). — Swainson, Nat. Hist.
Animals, vol. 2, p. 417, July 1839
(reference).

— Richardson, Ichth. China and
Japan, p. 218, 1846 (China).

— Bleeker, Nat. Tijds. Ned. Indie,
 vol. 2, p. 226, 1851 (Banda Neira);
 vol. 3, p. (235) 264, 1852 (Amboina;
 Wakai; Banda Neira; Macassar),
 p. 236 (Ternate), p. 237 (Wakai); vol.
 4, p. 132, 1853 (Ternate); vol. 5, p.
 234, 1853 (Ceram), pp. 319, 320
 (Amboina); Verh. Batavia.
Genoot. (hal. Ichth. Japan), vol.
 25, p. 11, 1853 (reference); Nat.
Tijds. Ned. Indie, vol. 6, p. 90, 1854
 (Banda Neira), p. 457 (Amboina);
 vol. 7, p. 360, 1854 (Batjan); vol. 8,
 p. 392, 1855 (Amboina); Lect. Soc.
Sci. Ind. Neerl., vol. 1, no. 3, p. 4,
 1856 (Manado); vol. 1, no. 5, p. 5,
 1856 (~~Manado~~ Amboina); vol. 2, no. 7,
 p. 3, 1857 (Amboina).

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g.² Median lateral golden band,
also another narrower along back
above. chrysozonus

e.³ Caudal with black longitudinal
band in each lobe. caeruleus

c.³ Scales very small, 70 to 80 in
lateral line; dark lateral band
from eye to upper median caudal
rays band another along back
and parallel; ends of caudal
lobes dusky. diagramma

b.² Odontonectes. Jaws with external
row of denticles; body without
spots or bands. runing

- Thiollière, Faune Woodlark,
 p. 154, 1857 (Woodlark Island).
 — Bleeker, Nat. Tijds. Ned. Indië,
 vol. 13, p. 383, 1857 (Batjan);
 Act. Soc. Sci. Ind. Néerl., vol. 6,
 no. 2, pp. 2, 3, 1859 (Doreh, New
 Guinea); Nat. Tijds. Ned. Indië,
 vol. 20, p. 331, 1859-60 (Semboina);
 vol. 22, p. 113, 1860 (Buru). —
Günther, Cat. Fish. Brit. Mus.,
 vol. 2, p. 222, 1860 (Japan; China;
 Amboyna; Cape Seat).
 — Jouan, Mém. Soc. Sci. Nat. Cherbourg,
 vol. 8, p. 296, 1861 (Port-de-France,
 New Caledonia). — Guichenot, Mém.
 Soc. Sci. Nat. Notes Ile Réunion,
 vol. 2, ~~1860~~ p. 24, 1862. — Bleeker,
 Ned. Tijds. Dierk., vol. 1, p. 152, 1863
 (Batjan).

Analysis of the species

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- a.¹ Paracaesio. Dorsal rays 10, anal rays 8; coloration ^{largely} uniform. xanthurus
- a.² Dorsal rays 12 to 15, anal rays 11 or 12.
- b.¹ Caesio. Jaws without an external row of denticles.
- c.¹ Scales large, 53 to 57 in lateral line. lunaris
- c.² Scales smaller, 60 to 65 in lateral line.
- d.¹ Body without bands or spots.
- e.¹ Caudal uniformly pale; black spot at pectoral origin.
- f.¹ Preorbital width more than half of eye; spinous dorsal unalbed. axillaris
- f.² Preorbital width $\frac{1}{4}$ or less of eye; spinous dorsal finely scaled basally. xanthonotus
- e.² Caudal with black tip to each lobe.
- g.¹ no median lateral golden band. pisang

— Kner, Reise Novara, Fische, p. 125, 1865 (Tahiti). — Guichenot, mém. Soc. Sci. Nat. Cherbourg, ser. 2; vol. 2, p. 145, 1866 (Madagascar).

— Playfair, Fishes of Zanzibar, p. 49, 1866 (Aden; Zanzibar). —

Guichenot, mém. Soc. Sci. Nat. Cherbourg, ser. 2, vol. 2, p. 145, 1866 (Madagascar).

— Günther, Cruise of Curacoa, Brenchley, p. 410, 1873 (Solomons). — Schmeltz, Cat. Mus. Godeffroy, vol. no. 5,

p. 26, 1874 (Tonga). — Day, Fishes of India, pt. 2, p. 279, pl. 60, fig. 6, 1876.

— Peters, Monatsber. Akad. Wiss. Berlin, p. 440, 1876 (Mauritius).

7 examples. Port Galera, Mindoro.
October 27, 1909. Length 53 to 68 mm.

9 examples. Port Maricaban, Luzon.
July 21, 1908. Length 50 to 68 mm.

(Type, no., U. S. N. M.)

9 examples. Sadaa Island, Celebes.
November 17, 1909. Length 47 to 56 mm.

8 examples. Una Una Road, Binang
Unang Island, Gulf of Tomini, Celebes.
November 18, 1909. Length 46 to 60 mm.

(For the late Edgar Ravenswood Waite,
the distinguished Australian zoologist,
in appreciation of his many contributions
to ichthyology.)

— Günther, Journ. Mus. Godeffroy, vol. 6, pt. 11, p. 169, 1877 (Hawaii; Society Islands; Paumotu). —

Schmeltz, Cat. Mus. Godeffroy, no. 6, p. 13, 1877 (Huahine).

— Pöhl, Cat. Mus. Godeffroy, no. 7, p. 44, 1879 (Tonga). — Castelnau, Proc. Linn. Soc. New South Wales, vol. 3, no. 4, p. 351, May 1879 (Sydney).

— Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 42, 1880 (Arafura Sea, S. 9° 59' E. 39° 42').

— Pöhl, Cat. Mus. Godeffroy, no. 9, p. 32, 1884 (Tonga).

— Ogilby, Cat. Fish. New South Wales, p. 34, 1886.

1075

Plectorhynchus goldmanni (Bleeker)

Diagramma goldmanni Bleeker, Natuurk.
Tijds. Nederl. Indië, vol. 4, 1853, p. 602.

Ternate. — Günther, Cat. Fishes Brit.

— Macleay, Proc. Linn. Soc. New South Wales, vol. 7, 1882, p. 237 (New Guinea).
Mus., vol. 1, 1859, p. 331 (copied). — Weber,

Siboga Exped., vol. 57, Fische, 1913, p. 280
(Makassar; Pepela Bay, Rotti).

Plectorhynchus goldmanni Bleeker, Atlas
Ichth. Ind. Néerl., vol. 7, 1873-76, pl. (17)
295, fig. 2; vol. 8, 1876-77, p. 21 (Celebes,
Ternate, Obi Major, Timor). — Evermann

and Seale, Bull. Bur. Fisher., vol. 26, 1906
(1907), p. 84 (Jolo; San Fabian). — Beaufort,
Bijdragen Dierk. Amsterdam, pt. 19, 1913,
p. 122 (Savanna, Sula Islands).

Plectorhynchus goldmanni Fowler and Bean
Proc. U. S. Nat. Mus., vol. 62, 1922, p. 33 (Ceb.

— Fowler, Mem. Bishop Mus., vol. 10, 1928,
p. 207 (compiled).

— Vaillant, Bull. Soc. Philomath.
 Paris, ser. 7, vol. 11, p. 57, 1886-87
 (Tahiti; Paumotu). — Steindachner
 and Döderlein, Denks. Akad. Wiss.
 Wien, math.-naturw. Kl., vol. 53,
 pt. 1, p. 265, 1887 (Tokio; Tagawa;
 Kochi; Kagoshima). — Day, Fishes
 of India, Suppl., p. 792, 1888.

— Boulenger, Proc. Zool. Soc. London,
 p. 240, 1889 (Miscat). — Day, Fauna of
 British India, Fishes, vol. 2, p. 243, fig. 87, 1889.

— Pfeffer, Jahrb. Hamburg. Wiss.
 Anst., vol. 10, p. 12, 1893 (Zanzibar).

— Elera, Cat. Fauna Filipinas, vol.
 1, p. 491, 1897 (Luzon; Mindoro).

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line; no scales on front of head;
maxillary little protractile. Pinjalo

b.² Snout ends in conic fleshy tip.

a.² Body ^{usually} oblong; ~~teeth in jaws small~~
~~conic or setiform, no canines~~; palate
toothless; preopercle serrated; dorsal
spines usually robust.

f. Chin without central groove.

g. Plectorhynchinae. ^{Infraorbital without} ~~maxillary little~~
^{spine} ~~protractile, scaleless~~; obtuse head
well scaled; also soft vertical fins,
at least basally; scales small, 50
to 125 in lateral line; dorsal rays
15 to 23.

h. Chin without barbels; dorsal
without antorse spine in front;
caudal emarginate or forked.

i. Gill rakers 16 or 17 + 24 or 25,
lanceolate. Parapristipoma

— Steindachner, Denks. Akad. Wiss.
Wien, math.-~~phys~~ naturw. Kl., vol. 70,
p. 498, 1901 (Honolulu).

— Weber, Siboga Exped., vol. 52, Fische,
p. 517, fig. 19 (young), May 19¹³ 1900.
(Menado; Manipa Strait; Java Sea).

i.² Gill rakers 7 or 8 + 11 to 15,
short. Plectorhinchus

h.² Chin with tuft of small barbels;
dorsal preceded by antrorse spine;
snout end with papillae; caudal
rounded. Hapalogenys

g.² Scoposinae. ~~Maxillary protracile,~~
Infraorbital usually with large
spine directed back; ~~vertical fins~~
dorsal and anal scaleless; scales
large, 35 to 50; dorsal rays 9 to 11.

Scopopsis

f.² Pomadasyinae. Chin with central
groove behind symphysis of lower jaw;
soft dorsal and anal with low
basal scaly sheath, otherwise scaleless;
anal spines strong, especially second;
dorsal rays 12 to 18. Pomadasya

Dactylophorus orientalis Swainson,
Nat. Hist. Animals, vol. 2, p. 262,
July 1839 (reference).

— Tenison-Woods, Fish and Fisher.
New South Wales, p. 69, 1882.

Dactyloptera orientalis Schlegel,
Fauna Japonica, Poiss., pt.
p. 37, pl. 15a, 1843 (Japan; China).

Corystion orientale Bleeker, Nat.
 Tijds. Dierk., vol. 1, p. 236, 1863
(Ternate).

869

Genus Gymnocassio Bleeker

Gymnocassio Bleeker, Verslagen Med.
Akad. Wet. Amsterdam, series 2, vol. 9,
1876, p. 152. Type Cassio gymnopterus
Bleeker, orthotypic.

Body elongate, slender. Head pointed.
Eye advanced, moderate. Jaws small,
horizontal, protractile. Teeth in jaws
minute, none on palate. Branchiostegals 6.
Scales small, 80 in lateral series, in
horizontal rows along body. Head,
except muzzle, scaly. Fins scaleless.
Dorsal spines 9, rays 15 or 16. Anal
spines 3, rays 12 or 13. Caudal forked.
Pectoral pointed. Ventral small.

Cephalacanthus orientalis Fowler,
 Proc. Acad. Nat. Sci. Philadelphia,
 p. 516, 1900 (Hawaiian Islands). —
Jenkins, Bull. U.S. Fish Comm.,
 vol. 22, p. 499, 1902 (1903) (Hono-
 lulu). — Snyder, Bull. U.S. Fish
 Comm., vol. 22, p. 536, 1902 (1904)
 (Honolulu; Puako; Hanalei Bay;
 Lahaina). — Jordan and Snyder,
 Proc. U.S. ~~Geol.~~ Nat. Mus.,
 vol. 27, p. 946, 1904 (Honolulu); ~~vol.~~
 vol. 28, p. 126, 1904 (Honolulu). —
Jordan and Evermann, Bull. U.S.
 Fish Comm., vol. 23, pt. 1, p. 473, fig.
 208, 1903 (1905) (Hilo; Honolulu;
 Molokai). — Seale, Occas. Pap. Bishop
 Mus., vol. 4, no. 1, p. 83, 1906 (Tahiti).
 — Fowler, Copeia, no. 112, p. 84, Nov-
 ember 20, 1922 (Hawaii).

Gymnocaesio argenteus (Bloch) 870

Bodianus argenteus Bloch, Naturges.
Eusländischen Fische, vol. 4, 1790, p. 57,
pl. 231, fig. 2. "Mitteländische Meer"
[doubtless erroneous, likely Indo-Pacific].
— Walbaum, Artedi Pisc., vol. 3, 1792, p.
673 (on Bloch). — Schneider, Syst. Ichth.
Bloch, 1801, p. 332 (on Bloch). — Lacépède,
Hist. nat. Poiss., vol. 4, 1802, pp. 279, 286
(on Bloch).

Caesio argenteus Cuvier, Hist. nat. Poiss.,
vol. 6, 1830, p. 437 (East Indies). — Günther,
Cat. Fishes Brit. Mus., vol. 1, 1859, p. 393
(compiled); Journ. Mus. Godeffroy, vols.
2-3, pts. 5-6, 1874, p. 33, pl. 24, fig. 13
(Kingsmills). — Bleeker, Nederl. Tijds.
Dierk., vol. 4, 1874, p. (117) 150 (China).
— Fowler, Mem. Bishop Mus., vol. 10, 1928,
p. 204 (compiled).

Dactyloptena orientalis Jordan
and Richardson, Proc. U. S. Nat.
Mus., vol. 33, p. 665, 1908 (1909)
(Southern Japan, Hawaii, East
Indies); — Snyder, Proc. U. S.

Nat. Mus., vol. 42, p. 435, fig. 2 (head^{above})
1912 (no locality). — Regan
Ann. Mag. Nat. Hist., Ser. 8,
vol. 11, pp. 175, 183, figs. 1a-5a, 1913
(osteology).

— Franz, Abhand. Kön. Bayer. Akad.
Wiss., vol. 4, Suppl. band 1, p. 80,
1910 (Yokohama; Fukuura; Iba-
ratsubo).

— Jordan and Thompson, Mem. Carnegie
Mus., vol. 6, no. 4, p. ~~284~~, 1914 (Sodok-
atsu, Yokohama; Misaki).

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9509. Dodepo and Pasejogo Islands,
Gulf of Tomini, Celebes. November 16,
1909. Length 189 mm.

22857. Gomomo Island, Pitt Passage.
December 3, 1909. Length 75 mm.

A1603. Nafa, Riu Kiu, February 7, 1910.
Length 273 mm.

18422. Nan Wan, Formosa. January
25, 1910. Length 102 mm.

19894 U.S.N.M. Magdalena, Marquesas.
Capt. Herndon. Length 188 to 250 mm.
Third gray line starts from behind
opercle on humeral region.

34797 U.S.N.M. Tahiti. Dr. W. H. Jones.
Length 181 mm.

34800 U.S.N.M. Tahiti. Dr. W. H. Jones.
Length 165 to 168 mm. 2 examples.

34814 U.S.N.M. Tempe, Marquesas.
Dr. W. H. Jones. Length 166 mm. 1 example.

2526

— Izuka and Matsuura, Cat. Zool.
Spec. Tokyo Mus., Vertebr., p. 131, 1920
(Tokyo Market).

— McCulloch, Austral. Zool., vol. 2,
no. 3, p. 118, fig. 345a, 1922 (New
South Wales). — Jordan and
Jordan, Mem. Carnegie Mus., vol. 10,
no. 1, p. 57, Dec. 1922 (Hawaii).

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 77, p. 25, 1925
(Delagoa Bay). — McCulloch and
Whitley, Mem. Queensland Mus.,
vol. 8, p. 165, 1925 (reference).

— Fowler, Bull. Bishop Mus., no. 22,
p. 27, 1925 (Honolulu); no. 38, p. 21,
1927 (Honolulu). — Whitley, Rec.
Austral. Mus., vol. 16, no. 1, p. 29,
Oct. 7, 1927 (Michaelmas Cay). —
Barnard, Ann. South African Mus., vol. 27,
pt. 1, p. 947, pl. 36, Oct. 1927 (East London; Natal;
Delagoa Bay).

49342 U.S.N.M. Red Sea. Bellotti.
Length 111 mm. As Genyoroge bengalensis.

52311 U.S.N.M. Apia, Samoa. Bureau
of Fisheries. Length 81 to 97 mm. 2 examples.
Third line variable, extends from
preopercle ridge on one side and from
eye on other side.

58026 U.S.N.M. Zamboanga. Dr. E. A.
Mearns. August 1906. Length 170 to 205
mm. 2 examples.

65936 U.S.N.M. Suva, Fiji. Albatross
Collection. Length 132 mm.

71933 U.S.N.M. Naha, Okinawa, Riu Kiu.
Albatross Collection 1906. Length 64 to 245 mm.
3 example. All have third line from
preopercle edge; 2 small examples with
black lateral blotch on lateral line.

84266 U.S.N.M. Philippines. Dr. F. Baber.
Length 173 mm.

— Fowler, Mem. Bishop Mus., vol. 10,
p. 302, pl. 2513, 1928 (Hawaiian Islands,
Honolulu, Tahiti, Waikiki, Hilo,
Society Islands, Savau). —

Whitley, Rec. Austral. Mus., vol.
17, no. 3, p. 131, June 27, 1929
(Palmer Island, Michaelmas Cay,
Queensland; Trial Bay, Hastings
River, Broken Bay, Port Jackson,
Maroubra, Manly, New South Wales;
Malay Archipelago; Japan; Honolulu;
New Hebrides).

— Fowler, op. cit., vol. 11, no. 5, p. 350,
1931 (Honolulu); vol. 11, no. 6, p. 431,
1934 (Honolulu; New Hebrides);

~~with~~ Proc. Acad. Nat. Sci.

Philadelphia, vol. 87, p. 400, 1935
(Hatal).

$7\frac{1}{2}$ along above lateral line, 61 along below lateral line; 9 scales above lateral line, 21 below (predorsal scales shown on figure as apparently forward opposite front eye edge and 13 rows over cheek including both suborbitals and preopercle flange). D. XI, 13, fourth spine $2\frac{2}{3}$ in total head length, first ray $2\frac{7}{10}$; A. III, 8, second spine $2\frac{7}{8}$, first ray $2\frac{7}{8}$; caudal $1\frac{1}{2}$, very slightly emarginate behind; least depth of caudal peduncle $3\frac{1}{3}$; pectoral $1\frac{1}{5}$; ventral $1\frac{4}{5}$. Uniform yellowish red, with dark spot in pectoral axil. Fins yellow. Upper third of dorsal black, with white margin. Caudal also with black edge and white margin. Dark or black mark across middle of first third of anal. Length 255 mm. (Day.)

Lindamans, Queensland, Polynesia.

Dactylophorus bispinosus Swainson,
Nat. Hist. Animals, vol. 2, p. 262,
1839 (on "Russ. pl. 160" an evident
error and pl. 161. intended).

Dactylopterus bispinosus Swainson,
 op. cit., p. 417 (on mooree godoo
Russell, Fishes of Coromandel,
 vol. 2, p. 45, pl. 161, 1803, type
 locality, Vizagapatam).

Dactylophorus chinensis Swainson,
 op. cit., p. 263 (on "Sw. App."
~~name only~~)
Dactylopterus chinensis Swainson, p. 418).

Dactylopterus chinensis Swainson,
 op. cit., p. 418 (type locality, "In
 a box of Chinese dried fishes and
 crabs").

Trigla dissimilis Günther, Cat.
Fish. Brit. Mus., vol. 2, p. 223, 1860
 (no type locality) (name only).

Neomesoprion unicolor Castelnau

may possibly have been intended for the present species, with its generic status admitted solely on the presence of but 9 dorsal spines, possibly an individual variation?

It is noted incompletely as follows:

Depth little over $2\frac{1}{2}$ without caudal; head $2\frac{2}{3}$. Body oval, high, upper profile strongly convex. Eye little over 4 in head, $1\frac{1}{2}$ in snout. Opercle pointed. Scales on front part of head very minute, on opercles large as on body. D. IX, 15, second spine longest and others decrease. A. III, 9, first spine short, others subequal, $\frac{1}{2}$ of rays. P. 14, large. Scales 64 in lateral line. Silvery, with yellow tinge. Length 280 mm.

Cephalacanthus spinarella (not
Linnaeus) Guichenot, notes Ile
 Réunion, vol. 2, p. 2, 1862. —
Jordan and Snyder, Annot.
 Zool. Japon., vol. 3, p. 108, 1901
 (reference). — Fowler, Proc.
 Acad. Nat. Sci. Philadelphia,
 p. 169, 1903 (Zanzibar). — Waite,
 Mem. New South Wales Nat.
 Club, vol. 2, p. 49, Nov. 7, 1904. —
Stead, Fishes of Australia, pp.
 202, 265, fig., 1906; Edible Fish.
 New South Wales, p. 115, 1908.

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Lutjanus lugonius Evermann and Seale

Lutjanus lugonius Evermann and Seale,
Bull. Bur. Fisher., vol. 26, 1906 (1907), p.
79, fig. 13. Bacon.

Depth $2\frac{1}{2}$ to $2\frac{2}{3}$; head $2\frac{1}{2}$ to $2\frac{3}{5}$,
width $1\frac{4}{5}$ to $2\frac{1}{8}$. Snout 5 to $3\frac{1}{4}$ in head;
eye $3\frac{1}{3}$ to 4, 1 to $1\frac{1}{3}$ in snout, greater
than interorbital in young to subequal
with age; maxillary reaches $\frac{1}{4}$ to $\frac{2}{5}$ in
eye, expansion $\frac{1}{2}$ to $2\frac{2}{5}$ in eye, length
 $2\frac{2}{5}$ to $2\frac{1}{2}$ in head; teeth in villiform
bands in jaws of 3 or 4 irregular rows
and outer enlarged row; 4 to 6 teeth in
front of each jaw still slightly larger
or canine like; band of villiform teeth
across vomer and on each palatine,
tongue edentulous; interorbital $4\frac{1}{4}$ to
 $4\frac{4}{5}$, broadly convex; hind preopercle

Depth $5\frac{1}{2}$ to $5\frac{3}{4}$; head 4 to 5.
 Snout $2\frac{1}{2}$ to $2\frac{3}{5}$ in head; eye
 $2\frac{3}{4}$ to 4, $1\frac{2}{3}$ in snout, $1\frac{4}{5}$ in
 interorbital; maxillary reaches
 $\frac{2}{5}$ in eye^{or} to its hind edge,
 length 2 to $2\frac{2}{5}$ in head;
 lips rather thick; teeth small,
 short, blunt in jaws, in
 4 or 5 irregular series;
 interorbital $1\frac{1}{2}$ to 2 in head,
 deeply concave. Gill rakers
 3 + 4, rudimentary rough
 tubercles.

Scales 45 or 46 in lateral
 series to caudal base; 24
 transversely from anal origin;
 19 between isthmus and ventral.

D. I - I - VII - 8, first spine
 elongate filament $2\frac{2}{3}$ to $2\frac{4}{5}$
 in fish without caudal, fourth

spine $1\frac{1}{4}$ to $1\frac{1}{6}$ in head, second ray
 $1\frac{1}{3}$ to $1\frac{1}{2}$; a. 6, second ray $1\frac{2}{3}$
 to $1\frac{3}{4}$; pectoral reaches caudal
 base or caudal tip, rays 33;
 caudal $4\frac{1}{4}$ in rest of fish;
 least depth of caudal peduncle
 3 to $3\frac{1}{5}$; ventral $1\frac{1}{8}$.

Pale brown, blotched with
 pale gray. Dorsal spines and
 rays barred brown and yellow.
 Caudal yellow and brown.
 Pectoral brown, rays barred
 yellow, membranes with
 dark spots of brown and
 black.

Arabia, Zanzibar, Delagoa Bay,
 Natal, South Africa, Mauritius,
 Madagascar, India, East Indies,
 Philippines, China, Japan, ^{South Wales,} New
 Queensland, Melanesia, Polynesia,
 Hawaii.

A. N. S. P., one example.
Zanzibar. Sir Charles Eliot.
Length 100 mm.

A. N. S. P., one example. Delagoa
Bay, Portuguese East Africa.
H. W. Bell Marley. Length 158 mm.

Dactyloptena procne (Ogilby)

Ebisinus procne Ogilby, Proc. Roy. Soc. Queensland, vol. 23, p. 34, November 1910 (type locality, Moreton Bay). — McCulloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 165, July 7, 1925 (reference).

Dactyloptena procne Whitley, Rec. Austral. Mus., vol. 17, no. 3, p. 133, June 27, 1929 (reference).

$\frac{2}{5}$ to $\frac{2}{3}$; caudal $1\frac{1}{4}$ to $1\frac{1}{3}$, slightly emarginate behind, nearly truncate or widely expanded; least depth of caudal peduncle 3 to $3\frac{1}{8}$; pectoral $1\frac{1}{8}$ to $1\frac{1}{5}$; ventral $1\frac{2}{3}$ to $1\frac{3}{4}$.

Back dull brown, sides and below whitish with silvery sheen. Dusky blotch at origin of pectoral rather triangular. A very indistinct or as faded deep brown diffuse rounded spot below soft dorsal origin in and close to lateral line, little less than eye in size. Fins pale brownish, paired ones and anal more whitish. Sides of head with drab or gray tints.

Philippines. My examples agree with the original description except they do not have teeth on the tongue. They say it is related to Lutjanus russelli (= Lutjanus fulviflamma) but it seems

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Depth $4\frac{7}{8}$; head $3\frac{4}{5}$, width $1\frac{4}{5}$, snout $2\frac{3}{4}$ in head; eye $3\frac{1}{5}$, $1\frac{1}{6}$ in snout; maxillary reaches below front border of pupil, length $2\frac{1}{2}$ in head; interorbital 2; preopercular spine $1\frac{1}{3}$ to 2. Scapular ~~notch~~ spine extends to ~~a little~~ behind spinous dorsal, interspace $1\frac{1}{3}$ in depth of notch, which narrowly rounded anteriorly.

Scales 49-28; lower edge of posterior part of body with $\frac{1}{3}$ of beaked scales enlarged and mobile, first below last dorsal rays, others on caudal peduncle. Lateral line conspicuous, extends directly backward to below middle of spinous dorsal, then sweeping downward in gentle curve to below origin of soft dorsal, finally continues to caudal base below eighth series of scales.

~~Head~~ $3\frac{4}{5}$;

Back blotched and lined with
 deeper purple and violet.
 Under surface pinkish white
 or fawn color. Upper sides of
 head pale yellowish brown,
 spotted with violet. Preopercle
 spine sandy yellow. First
 dorsal spine black, second
 spine and first dorsal dusky;
 second dorsal and caudal
 clear, rays with alternate light
 and dark bands. Anal and
 ventrals like lower surface,
 former with dark basal blotch
 between fourth and sixth rays.
 Pectoral violet, profusely
 spotted with purple, some of
 terminal spots united to form
 transverse bars. Length 390 mm.
 (Agilby)

Queensland.

D, I - I - V - 1 - 8, first spine extends to little behind spinous dorsal; second spine inserted midway between first spine and third spine and reaches base of last when depressed, length $3 \frac{9}{10}$ in first spine and $1 \frac{2}{5}$ in fourth; fourth spine subequal with second dorsal fin height. A. C. begins below third dorsal ray, much nearer caudal base than gill opening. Caudal subtruncate, outer rays produced. Pectoral rays 33 or 34, reaches middle of caudal, tips of all rays filamentous. Ventral rays 5.

Upper surface pale violet, with 2 broad darker cross bands descending on sides to ventral edge, more distinct in young and fading with age.

Dactyloptena gilberti Snyder

Dactyloptena gilberti Snyder, Proc.
U.S. Nat. Mus., vol. 36, p. 604, 1909
(type locality, Kagoshima, Japan);
vol. 42, p. 435, pl. 57, fig. 1, text
fig. 1, 1912 (type). — Whitley,
Records Austral. Mus., vol. 17,
no. 3, p. 133, June 27, 1929 (reference).

Dactyloptena jordani Franz, Abhandl.
Kön. Bayer. Akad. Wiss., Math.-phys.
Kl., Suppl. Band 1, abh. 1, p. 80, pl. 9,
fig. 72, 1911.

Depth $4\frac{4}{5}$; head 4. Snout 4
 in head; eye $2\frac{2}{3}$, greater than
 snout, 2 in interorbital;
 maxillary extends $\frac{2}{3}$ in eye, length
 $2\frac{3}{5}$ in head; interorbital $1\frac{2}{5}$,
 broad, deeply concave; occipital
 region convex; posttemporal
 extensions short, rather blunt,
 interspace concave anteriorly,
 each with strong dorsal beak,
 divided anteriorly and broken
 into 2 rows of sharp elevations
 similar to those on scales; opercu-
 lar spine $1\frac{7}{8}$ in rest of head.

Scales with strong beaks,
 hind edges serrated; sides
 posteriorly with 6 large, movable,
 knife-like scales, first well
 before vent. Caudal base with
 pair of large, high, movable
 scales. Lateral line not
 evident.

D. I - I - VI - 8, first spine
 3 in fish to caudal base, third
 spine $1\frac{1}{3}$ in head, first ray
 $1\frac{1}{10}$; A. 6, second ray $1\frac{1}{6}$;
 caudal $4\frac{3}{4}$ in rest of fish,
 truncate; least depth of
 caudal peduncle 4 in head;
 pectoral $1\frac{1}{3}$ in fish without
 caudal, rays when depressed
 reaches slightly beyond caudal
 base; ventral reaches vent.

Dark brown, with few
 inconspicuous blackish spots on
 side and above. First dorsal
 spine with 6 blackish spots and
 membrane dark. Other dorsal spines
 and rays spotted and larger spots on
 spinous fin. Caudal rays with dark.
 spots. Pectoral largely dark brown
 with blackish spots and base of
 fin blackish. Anal pale, without
 spots.

Japan.

U. S. N. M., no. 62952. Kagoshima,
Japan. Albatross Collection.
Length 208 mm. Type.

Dactylopterus^{na} cheirophthalmus
(Bleeker).

Dactylopterus cheirophthalmus
Bleeker, Nat. Tijds. Ned. Indie,
vol. 7, p. 494, 1854 (type locality,
Banda Neira); Act. Soc. Sci. Ind.
Ned. Ind., vol. 3, no. 4, p. 2, 1857-58
(Manado).

Elesinus cheirophthalmus Fowler and
Bean, Proc. U. S. Nat. Mus., vol. 62,
p. 64, 1923 (Takao, Formosa).
Jordan and Richardson, Proc. U. S.
Nat. Mus., vol. 33, p. 665, fig. 8, 1907
(copied).

Dactylopterus cheirophthalmus Günther,
Cat. Fish. Brit. Mus., vol. 2, p. 223, 1860
(copied).

1073

Plectorhynchus radja (Bleeker)

Diagramma radja Bleeker, Naturkund.
Tijds. Nederl. Indië, vol. 5, 1853, p. 336.
Amboina. — Günther, Cat. Fishes Brit. Mus.,
vol. 1, 1859, p. 331 (copied).

Plectorhynchus radja Bleeker, Atlas Ichth.
Ind. Néerl., vol. 7, 1873-76, pl. (14) 292,
fig. 1; vol. 8, 1876-77, p. 20 (Celebes,
Salmahera, Ternate, Bouru, Amboina,
Goram).

Plectorhynchus radja Fowler, Mem. Bishop
Mus., vol. 10, 1928, p. 206 (copied).

Depth 3; head $3\frac{1}{3}$, ^{width 2.} Snout 3 in head;
eye 4, $1\frac{1}{3}$ in snout, ^{greater than interorbital}; maxillary reaches
 $\frac{1}{3}$ in eye, expansion $1\frac{2}{3}$ in eye, length
 $3\frac{1}{10}$ in head; interorbital little convex;
hind preopercle edge denticulate. Scales
100 along above lateral line, 80 along
below lateral line; 13 or 14 scales

Dactyloptena cheiropthalmus Whitley,
Records Austral. Mus., vol. 17, no. 3,
p. 134, June 27, 1929 (reference).

Ebisinus macracanthus (not
Bleeker) Gilby, Proc. Roy. Soc.
Queensland, vol. 23, ^{pt. 1,} p. 35, 1911
(part).

depth $4\frac{3}{4}$ to $4\frac{5}{6}$; head $3\frac{1}{3}$ to $3\frac{3}{5}$. Snout $2\frac{2}{5}$ to 3 in head; eye $2\frac{4}{5}$ to 3, subequal with snout; maxillary 2 to $2\frac{1}{3}$; interorbital $1\frac{5}{6}$ to 2, deeply convex.

Scales 44 to 46 in lateral series to caudal base and 2 more on latter; 22 or 23 scales between soft dorsal and anal origins. Along each side of lower body edge posteriorly 3 projecting, lobate, beveled scales, first about midway in anal.

D. I - I - IV - 8; a. 6.

nearly hair brown with six
 transverse obscure nearly chaetura
 black blotches, fifth and
 sixth of which with paler
 centers; first band across
 interorbital, second on occiput
 and last on caudal peduncle.
 First dorsal spine and pectoral
 blackish, dorsals otherwise
 and caudal brownish. Anal
 and ventral paler. Caudal
 with 3 transverse dark bands,
 soft dorsal with about 6.
 Few pale spots on each anal ray.

East Indies, Formosa.

U.S.N.M., Tasao,
 Formosa. Dr. Fred Baker. Length
 107 to 125 mm.

2546

Dactyloptena macracanthus (Bleeker)

Dactylopterus macracanthus Bleeker,
Nat. Tijds. Ned. Indie, vol. 7, p. 449,
1854 (type locality, Macassar?,
Celebes).

— Günther, Cat. Fish. Brit. Mus., vol.
2, p. 223, 1860 (reference).

Dactyloptena macracanthus Whitley,
Records Austral. Mus., vol. 17, no. 3,
p. 134, June 27, 1929 (reference).

Ebisinus macracanthus Ogilby,
Proc. Roy. Soc. Queensland, vol. 23,
pt. 1, p. 35, 1911 (reference).

Ebisinus cheiophthalmus (not
Bleeker, Jordan and Richardson,
Proc. U. S. Nat. Mus., vol. 33, p. 665,
1908 (part)).

D. I - I - VI, 8; A. 6. A

long, isolated, ray-like filament behind occiput.
 Scapular spines with interspace $1\frac{1}{2}$ to $1\frac{3}{5}$ in depth of notch between, which equals length of preopercular spine; scapular spines reach vertical from second spine of continuous first dorsal fin. Pectoral with large, round, black blotch, spotted with yellow. (Günther.)
 Celebes.

Genus Daicocus Jordan and Richardson

Daicocus Jordan and Richardson,
Proc. U. S. Nat. Mus., vol. 33, p.
667, 1908. (Type Dactylopterus
peterseni Nyström, orthotypic.)

Differs from Dactyloptera
in the presence of only a single
predorsal spine. Also without
lateral line.

47993 U.S.N.M. Cochin China,
Lyons Museum. Length 58 mm.

57920 U.S.N.M. Zamboanga,
Dr. E. A. Mearns. Length 18 mm.

72667 U.S.N.M. Java. Bryant and
Palmer. Length 36 mm.

72668 U.S.N.M. Java. Bryant and
Palmer. Length 135 to 153 mm. 2 examples.

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Daicocus peterseni (Hystrom)

Dactylopterus peterseni Hystrom,
Bih. K n. Sv. Vet. Akad. Handl.,
Stockholm, vol. 13, pt. 4, no. 4,
p. 24, 1888 (type locality,
Nagasaki, Japan):

Cephalacanthus peterseni Jordan
and Snyder, Annot. Zool. Japon.,
vol. 3, p. 108, 1901 (reference).

dark brown bands, much narrower than interspaces, though lower two less distinct than others. Iris reddish brown. Dorsals with blackish edge, broad on spinous fin; bases of dorsal spines alternately darker; following on soft dorsal from uppermost dark band row of large blackish spots. Caudal with hind edge narrowly blackish and 4 rows of black spots on fin. Soft anal with blackish edge at apex and several dark spots in two rows. Paired fins pale, with dark transverse bar across pectoral base and ventral base darker.

Arabia,

Zanzibar, Madagascar, India, Ceylon,
 East Indies, Philippines, ^{Malaysia, Micronesia,} Polynesia.

Bennett's figure of Bodian curvier shows but few spots on the soft vertical fins.

Daicococcus peterseini Jordan and
Richardson, Proc. U.S. Nat. Mus.,
 vol. 33, p. 667, fig. 9, 1908 (Misaki).

— Frang, Abhand. Kon. Bayer. Acad.,
 Math.-physik. Kl., vol. 4, Suppl.
 band 1, p. 80, 1910 (Yokohama). —
Izuka and Matsumura, Cat. Zool.
 Spec. Tokyo Mus., Vertebr., p. 121,
 1920 (Tokyo market).

— Jordan and Hubbs, Mem. Carnegie
 Mus., vol. 10, no. 2, p. 290, June 27,
 1925 (Misaki).

base and 10 more on latter; 11 to 14 scales above lateral line, 18 to 20 below, 53 to 60 predorsal forward midway in snout length, 22 rows on cheek to preopercle corner.

Suprascapula entire. Scales with 6 nearly parallel basal radiating striae; apical denticles 66, short points, with 9 transverse series of basal elements; circuli fine.

D. XII or XIII, 17, I to 20, I, third spine $2\frac{1}{5}$ to $2\frac{3}{5}$ in head, first ray $3\frac{1}{3}$ to $4\frac{1}{2}$; A. III, 7, I, second spine $2\frac{1}{10}$ to $2\frac{3}{4}$, second ray $1\frac{7}{8}$ to $2\frac{1}{10}$; caudal $1\frac{1}{5}$ to $1\frac{2}{5}$, with slightly emarginated hind edge; least depth of caudal peduncle $2\frac{1}{2}$ to $3\frac{1}{5}$; pectoral $1\frac{1}{3}$ to $1\frac{2}{3}$; ventral $1\frac{1}{3}$ to $1\frac{3}{4}$.

Light brown generally six or 7. longitudinal or horizontal dusky or

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Depth $4\frac{1}{2}$; head $4\frac{1}{6}$. Snout $2\frac{3}{5}$
in head; eye $4\frac{1}{4}$, $1\frac{3}{5}$ in snout,
 2 in interorbital; maxillary
reaches $\frac{1}{3}$ in eye, length $2\frac{1}{2}$
in head; interorbit 2 , little concave.
Scapular shields reach third
dorsal spine, interspace $1\frac{1}{2}$ in
depth of notch, which acute;
preopercular spine $2\frac{1}{2}$ in rest
of head.

Scales 46 - 20, small over
pectoral basally and on caudal
peduncle posteriorly.

D. $\overline{I} - \overline{V} - \overline{I} - 8$, first spine
 $2\frac{7}{8}$ in fish without caudal,
third spine $1\frac{3}{5}$ in head, second
ray $1\frac{2}{5}$; A. 6, second ray $1\frac{2}{3}$;
caudal 1, emarginate behind;
least depth of caudal peduncle
 $4\frac{1}{5}$; pectoral $1\frac{1}{3}$ in fish without
caudal, reaches slightly beyond
caudal base, rays 33; ventral

rays I, 5.

Brown, above on top of head and back with numerous roundish black spots, small in size. Below whitish. Long first dorsal spine with blackish web. Dorsal spines and rays each with 3 to 5 dark spots. Caudal with several dark spots on each ray. Pectoral dark gray, especially terminally, streaked and spotted with whitish and also with numerous dark or blackish spots.

Japan.