

1461

Carangoides dinema Bleeker

Carangoides dinema Bleeker, Nat.
 Tijds. Ned. Indië, vol. 1, p. ⁽³⁵⁵⁾ 365, 1850
(Type locality, Batavia); Verh.
 Batavia. Genoot. (Nakreeft.), vol.
 24, p. 63, 1852 (Batavia).

— Fowler, Proc. Acad. Nat. Sci.
 Philadelphia, vol. 86, (1934) p. 447,
 fig. 29 (young), (atal).

2 ⁴/₅; A. III, 13, I, second spine 4 ³/₄,
first ray 2 ⁷/₈; least depth of
caudal peduncle 2 ¹/₅; pectoral 1 ⁴/₅;
ventral 1 ¹/₂; caudal 3 ¹/₃ in combined
head and body to caudal base, hind
edge emarginate).

Blue gray above, below pearl
white. Iris rosy. Silvery streak
from above snout tip along lower eye
edge back toward pectoral axil.
Each row of scales longitudinally
on body with ~~numerous~~ diffuse golden
streaks. Fins violaceous gray or
pale pearly rose. Length 410 mm.
(Bleeker.)

East Indies.

Diagnosis.¹ The above name is proposed
for Bleeker's figure and description,
evidently not to be confused with
Pimelpterus waigiensis Quoy and Gaimard.

Caranx dinema Günther, Cat. Fish.
Brit. Mus., vol. 2, p. 452, 1860
(copied).

Caranx (Citula) dinema Wakuiya, Ann.
Carnegie Mus., vol. 15, p. 178, 1924 ^{pl. 32, fig. 2}
(Ryukyu).

Caranx (Carangoides) dinema Weber
and Beaufort, Fish. Indo-Austral.
Archip., vol. 4, p. 241, 1931 (Irian).

307

8767 and 10362. Port Jamelo, Manila Bay, Luzon. July 13, 1908. Length 59 to 106 mm.

22741. Port Maricaban, southern Luzon. July 21, 1908. Length 113 mm.

22249 and 23141. Port Matalvi, western Luzon. November 22, 1908. Length 112 to 117 mm.

14597, 14599, 14600, 15338, 23260, 23261, 23270, 23271. Port Palapay, eastern Luzon. June 3, 1909. Length 99 to 113 mm.

23157 to 23160. Puerta Princesa, eastern Palawan. April 5, 1909. Length 77 to 114 mm.

23570. Romblon reefs. March 26, 1908. Length 59 mm.

Caranx carangoides (Bleeker)

Leioglossus carangoides Bleeker,
 Nat. Tijds. Ned. Indië, vol. 1,
 p. (355) 367, 1850 (type locality,
 Batavia, Java; Siboga, Sumatra);
 Verh. Batavia. Genoot. (makreel),
 vol. 24, p. 70, 1852 (Batavia;
 Sibog); Nat. Tijds. Ned. Indië,
 vol. 20, p. 237, 1859-60 (Singapore),
 p. 449 (Singapore); vol. 21, p. 138,
 1860 (Muntok, Banka); Verslag.
 Kon. Akad. Wet. Amsterdam, ser. 2,
 vol. 2, p. 300, 1868 (Waigiu).

Case 29

Johnius goldmanni (Bleeker)

Corvina goldmanni Bleeker, Natuurk.

Tijdschr. Nederland. Indië, vol. 7, 1854,
p. 371. Soenge Puan, Batjan.

Johnius goldmani Bleeker, Act. Soc.

Sci. Ind. Néerland., no. 2, vol. 6, 1857, p.
4 (Doreh, New Guinea).

Johnius goldmanni Fowler, Proc. Acad.

Nat. Sci. Philadelphia, 1927, p. 286
(Philippines); Mem. Bishop Mus., vol. 10,
1928, p. 235 (on Günther).

Sciaena goldmanni Günther, Cat. Fishes

Brit. Mus., vol. 2, 1860, p. 293 (compiled).

Otolithus goldmani Bleeker, Nederland.

Tijdschr. Dierk., vol. 2, 1865, p. 281

(Amboina).

Pseudosciaena goldmani Bleeker, Verhandl.

Kon. Akad. Wetensch. Amsterdam, vol.

14, series 3, 1874, p. 33 (Bali, Batjan,

Amboina, New-Guinea).

→

Craspis carangoides Bleeker, Nat.
Tijds. Ned. Indië, vol. 8, p. (393)
418, 1855 (Amboina).

Caranx carangoides Fowler, Mem.
Bishop Mus., vol. 10, p. 146, 1928
(compiled).

first ray $2\frac{1}{8}$; caudal $1\frac{2}{3}$, obtusely
cuneate or rounded; least depth of
caudal peduncle $3\frac{2}{3}$; pectoral $1\frac{1}{2}$;
ventral $1\frac{4}{5}$.

Silver gray above, shading through
silver on sides to pearl white on
breast and belly. All upper lateral
scales densely powdered with dusky
dots as 4 broad longitudinal darker
gray bands, 2 above and 2 below lateral
line. Dorsal, caudal and pectoral gray,
spinous dorsal closely dotted to obscure
ground color, becomes darker from base
upward so outer third appears blackish.
Soft dorsal with dots much less crowded,
only narrow marginal and suprabasal
band appearing blackish. Caudal tips

Caranx lioglossus Günther, Cat.
Fish. Brit. Mus., vol. 2, p. 432,
1860 (on Bleeker). — Kner,

Reise Novara, Fische, p. 156, 1865
(Ceylon; Java). — Boulenger,

Proc. Zool. Soc. London, p. 135,
1892 (Muscat). — Elera, Cat.

Fauna Filipinas, vol. 1, p. 509, 1895
(Luzon; Manila Bay).

— Károli, Termesz. Füzetek, Budapest,
vol. 5, p. 160, 1881 (Singapore).

227

15901 Mansalay, Mindoro. June 4, 1908.
Length 99 mm.

23251 to 23253. Mantacao Island,
west coast of Bohol. April 8, 1908.
Length 74 to 111 mm.

23299. Maribojoc Bay, Maribojoc,
Bohol Island. March 26, 1909. Length 70 mm.

4572 and 4573, 16985, 19434, Mampog
Island, Dinabayan Islands.
March 3, 1909. Length 97 to 102 mm.

17683. Murcielagos Bay, Mindanao.
August 9, 1909. Length 117 mm.

26 examples. Apol, Mindanao.
August 4, 1909. Length 69 to 116 mm.

22084. Pagapas Bay, Luzon. February
20, 1909. Length 98 mm.

Depth $2\frac{1}{8}$ to $2\frac{1}{5}$; head $2\frac{3}{4}$ to $3\frac{1}{8}$, width 2 to $2\frac{1}{8}$. Snout 3 to $3\frac{1}{2}$ in head from snout tip; eye $3\frac{2}{3}$ to $4\frac{2}{5}$, $1\frac{1}{8}$ to $1\frac{1}{2}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{2}$ in interorbital, adipose eyelids narrowly marginal in young; maxillary reaches $\frac{2}{5}$ to $\frac{1}{2}$ in eye, expansion $1\frac{1}{4}$ to $1\frac{1}{2}$, length $2\frac{1}{10}$ to $2\frac{2}{5}$ in head from snout tip; interorbital 3 to $3\frac{3}{4}$, convexly elevated.

Gill rakers 8 + 18 or 19, lanceolate, little longer than gill filaments or $1\frac{2}{5}$ in eye.

Breast and chest naked, extends up sides over half way to pectoral base, which also naked. Straight section of lateral line $1\frac{1}{4}$ to $1\frac{1}{3}$ in arch, scutes 23 to 25.

D. I, VIII — I, I, 17, I to 20, I, third spine $2\frac{1}{2}$ to $2\frac{3}{5}$ in total head length, first simple ray $2\frac{3}{4}$ to 3 in fish without caudal; A. II — I, I, 16, I to I, I, 18, I, first simple ray $1\frac{1}{8}$ to $1\frac{1}{5}$ in total head length; upper caudal lobe 1 to $1\frac{1}{5}$; least depth of caudal peduncle 5 to 7; ventral $1\frac{1}{8}$ to $1\frac{7}{8}$; pectoral $2\frac{2}{3}$ to $4\frac{1}{4}$ in fish without caudal, rays I, 16.

Back brown, sides and below whitish. Opercle with large neutral black, vertical, submarginal blotch, nearly twice eye diameter. Iris gray. Spinous dorsal and ventrals blackish terminally. Other vertical fins dark gray marginally, caudal lobes

1868

of small, ^{examples} ~~extant~~ tipped with
white, subterminally dark
gray. Most specimens with
dark neutral gray blotch on
edge of back, behind and
below each fin ray base.

Natal, East Indies, Philippines,
Riu Kiu.

Two examples. Iato, Luzon.
 June 19, 1908. Length 78 to 94 mm.
 Depth $2\frac{1}{8}$. Lower gill rakers 17.
 Breast naked to pectoral.
 A. II - I, 16.

5951. Panabutan Bay,
 Mindanao. February 6, 1908.
 Length 123 mm. Depth 2. Lower
 gill rakers 17. Breast half
 naked to ~~vent~~ pectoral. A.
 II - I, 17. Ventral blackish
 terminally.

Kawatana, Nagasaki).

Sciaena (Pseudosciaena) schlegelii

Steindachner, Ann. Zygnus. Wien, vol.
11, 1876, p. 208 (Japan).

Corvula schlegelii Jordan and Snyder,

Ann. Zool. Japon., vol. 3, 1901, p. 81

(Yokohama; Nagasaki); Proc. U.S. Nat.

Mus., vol. 23, 1901, p. 356 (Tokyo). $\frac{1}{2}$ Franz,

31

Abhandl. Kon. Bayer. Akad. Wiss.,

math.-physik. Klasse, vol. 4, Suppl. Band

1, 1910, p. 45, pl. 6, fig. 50 (Yokohama;

Dzushi).

Sciaena schlegelii Snyder, Proc. U.S. Nat.

Mus., vol. 42, 1912, p. 416 (Kagoshima). $\frac{1}{2}$

Jordan and Metz, Mem. Carnegie Mus.,

vol. 6, no. 1, 1913, p. 37 (Fusan, Korea). $\frac{1}{2}$

Jordan and Thompson, Mem. Carnegie Mus.,

A.N.S.P., six examples. Natal,
South Africa. 1932. H.W. Bell Marley.
Length 80 to 209 mm.

154789

109

8019, 15923 [1165]. Port Canalacan, Marinduque. February 23, 1909. Length, 212 to 218 mm. [1165.] Sides anteriorly diffused with dusky in life, after death fading silvery gray. Four or 5 broad copper red bands in life, fade to pale red after death. Head dusky olive; blood red at preopercle margin, tip of opercle and streak crossing eye above and below; inside mouth red. Vertical fins vermilion; both dorsal and anal clear anteriorly, latter with more or less orange terminally. Pectoral rays orange, membranes clear. Ventral rays white, with very yellowish tinge, membranes clear.

8639, 10734, 10735, 10737 to 10739. Port Ciego, Balabac. January 3, 1909.

Length, 140 to 223 mm.

6344, 6349, 6397, 16612. Port ^{Hamilos} ~~Jemelo~~. July 13, 1908. Length, 145 to 230 mm.

5 examples.

6143. Puerta Princesa, Palawan. April 5, 1909. Length, 198 mm.

11177. Rasa Island, Montaguin Bay, Palawan. April 11, 1909. Length, 203 mm.

9367. Romblon Harbor. March 25, 1908. Length, 160 mm.

18624 [1283]. Saboon Island, Bagay Gulf, Luzon. March 10, 1909. Length, 128 mm.

Olive and silvery gray, white below. Side with 5 obscure saddle-like transverse bars, somewhat more distinct after fish faded. No lateral dark blotch or red longitudinal bands. Vertical fins more or less vermilion towards ends. Caudal yellowish basally. Pectoral very pale clear pink, dusky in axil. Ventral pale, with slight purplish shade.

9135, 9136. San Roque, Leyte. July 29, 1909. Length, 235 or 236 mm.

A554. Sulado Island. September 17, 1909. Length, 220 mm.

7338. Tara Island. December 14, 1908. Length, 280 mm. Upper surfaces dark

olive, below white. Scales above with dusky centers, those along middle of side with blackish centers. Side of head with orange bronze shades, but without stripes or bars; opercular and preopercular margins bronzy; upper lip pinkish; inside mouth scarlet, but not to gill opening. Dorsal membranes clear vermilion, ends bright. Anal like dorsal, bright vermilion at base. Caudal with brassy overshades extending to middle of side, edges vermilion. Pectoral rays orange, membranes clear. Ventrals pinkish.

Carangoides oblongus (Cuvier)

Caranx oblongus Cuvier, Hist. Nat. Poiss., vol. 9, p. 128, 1833 (type locality, Vanicolo; Oualan). —

Bleeker, Nat. Geneesk. Arch. Ned. Indie, ser. 3, vol. 2, p. 517, 1845 (Batavia). —

Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1114, 1849 (1850) (Pinang Sea). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 452, 1860 (Malay Peninsula).

— Day, Proc. Zool. Soc. London, p. 689, 1870 (Andamans); Fishes of India, pt. 2, p. 292, pl. 51, fig. 1, 1876.

Peters, Monatsb. Akad. Wiss. Mantens, Prage Exped. Ost. Ind., vol. 1, p. 391, 1876 (Singapore). Berlin, p. 836, 1876 (1877) (New Britain; Bougainville Island).

— Day, Fauna British India, vol. 2, p. 163, 1889. Solomons. — Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 232, 1905 (1906) (Padang specimens of Fowler).

— Bean and Weed, Proc. U. S. Nat. Mus., vol. 42, p. 600, 1912 (Batavia). — McCulloch, Rec. Austral. Mus., vol. 15, no. 1, p. 31, April 15, 1926 (types of Caranx auriga Stula gracilis; near Christy).

— Fowler, Journ. Bombay Nat. Hist. Soc., vol. 30, no. 2, p. 318, January 25, 1925 (Tuticorin). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 79, 1927, p. 272 (Philippines).

56049 U.S.N.M. Jolo, Philippines.
Bureau of Fisheries (3417). Length
160 mm.

56061 U.S.N.M. Buluan, Philippines.
Bureau of Fisheries (3890). Length
45 to 53 mm. Two examples.

57975 U.S.N.M. Zamboanga.
Dr. E.A. Mearns. Length 56 to 58 mm.
Three examples.

84248 U.S.N.M. Zamboanga, Dr.
Fred Baker. Length 133 to 138 mm.
Three examples.

~~U.S.N.M. Fiji. Wilkes Exploring
Expedition. Length 113 mm.~~

9212 A.N.S.P. Samoa, Dr. H.C. Caldwell.
Length 130 mm. Depth $2\frac{1}{2}$. Scales 35 in lateral
line to caudal base and 4 more on latter; 5
above, 9 below. D. IV, 10, I, A. III, 7, I. Pectoral dusky
terminally.

33308 A.N.S.P. Jolo. Bureau of Fisheries.
Length 170 mm.

— McCulloch, Austral. Mus. Mem.,
no. 5, pt. 1, p. 189, Sep. 10, 1929 (reference).

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H 684. Galoney Island, Ragay Gulf,
Luzon. March 9, 1909. Length 97 mm.

12696. Yondra Island, between Jolo
and Tawi Tawi. September 20, 1909.

Length 103 mm.
^{11908 and 12244.} Ampinigan Island, south of Zamboanga.
September 11, 1909. Length 99 to 100 mm.

23914, 23925 to 23929. Limbner Cove,

Manila Bay, Luzon. February 8, 1909.

Length 82 to 99 mm. [1117.] Generally
reddish brown or pearly. Dusky band
from snout tip to caudal. Spinous
dorsal with an oblique bar through
middle of first membrane and
tip of second; tip of first pearly and
pearly bar underneath black,
remainder of fin dusky olive, spines
pale. Second dorsal rays pale pink,

Caranx (Citula) oblongus Waksuya,
Ann. Carnegie Mus., vol. 15, p. 175, pl.
22, fig. 2, 1924 (Ryukyu; Formosa).

Caranx (Carangoides) oblongus Weber
and Beaufort, Fishes Indo-Austral.
Archip., vol. 6, p. 235, fig. 46, 1931
(Ann).

15563. Bugsuk Island, Balabac.
January 5, 1909. Length 95 mm.

14253 and 14254. Cundaraman
Island, Balabac. January 4, 1909.
Length 74 to 88 mm.

15507 and 23642. Caracaran, Batan
Island. January 8, 1909. Length 90 to 94 mm.

16854. Cataingan Bay, Masbate
Island. April 18, 1908. Length 95 to 98
mm. [555]. Pearl gray, with reddish
tints more pronounced on lower
surface. Lower head, breast and belly
thickly punctulated with small
brownish specks, smallest on head.
Dark brown stripe from premaxillary
through eye to caudal base and
small brown blotch above its
posterior end. Iris with yellow.
Dorsal body color. Brown bar across
front of first dorsal, including

Carangoides oblongus Bleeker, Verh.
Batavia. Genoot. (Maatsch.), vol.
24, p. 62, 1852 (Batavia; Padang);
Verslag. Kon. Akad. Wet. Amsterdam,
vol. 12, p. 31, 1861 (Singapore).

— Fowler, Journ. Acad. Nat. Sci.
Philadelphia, ser. 2, vol. 12, p. 513,
June 10, 1904 (Padang); Proc. Acad.
Nat. Sci. Philadelphia, p. 83, Jan.
1905 (Padang material).

— Fowler, Copeia, no. 58, p. 63, June 8,
1918 (Philippines); Journ. Bombay
Soc. Nat. Hist., vol. , no. , p.
258, October 20, 1927 (Bombay);
Mem. Bishop Mus., vol. 10, p. 151,
1928 (compiled); vol. 11, no. 5, p. 326,
1931 (reference); Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, p. 446, fig. 27
(young), 1934 (Durban, Natal).

Citula oblonga Ogilby, Mem.
Queensland Mus., vol. 3, p. 134, Jan.
28, 1915 (type of Caranyx auriga).
— Whitley, Rec. Austral. Mus.,
vol. 18, no. 3, p. 108, March 25, 1931
(reference).

and as it narrows posteriorly only
dark line at caudal base. Close
above tubes of lateral line on caudal
base, small round dark spot, less
than pupil in size. Fins grayish
to pale brownish. Spinous dorsal
little more brownish or dusky
terminally. Soft dorsal and anal
each with subbasal deep brown
longitudinal line, also upper and
lower caudal edges each with dark
brown line. Sometimes the dark
axil longitudinal band is absent
from the trunk and tail in
preserved examples.

Philippines, Polynesia.

1877
Caranx auriga de Vis, Proc. Linn.
Soc. New South Wales, vol. 9, pt. 3,
p. 539, Nov. 29, 1884 (type locality,
Cairns, Queensland).

Caranx aurifer ~~Snyder~~ Kent, Great
Barrier Reef, p. 369, 1893 (Queensland)
(error).

Caranx filigera Kent, Prelim. Rept.
Food - Fish. Queensland, p. 10, 1889
(type locality, ^{Queensland} Brisbane); Great
Barrier Reef, p. 369, 1893.

exposed though short and each with short basal scale. Scales with 10 to 14 basal radiating striae; 56 to 119 apical denticles, with 1 to 4 transverse series of basal elements; ~~canal~~ circuli fine.

D. VII - I, 9, I, third spine 2 to 2 1/8 in head, second ray 1 1/2 to 1 3/4; A. II, 8, I, second spine 3 to 3 1/4, third ray 1 7/8 to 2 1/8; caudal 1 1/3 to 1 2/5, emarginate; least depth of caudal peduncle 2 2/5 to 2 1/2; pectoral 1 2/5 to 1 2/3; ventral 1 3/4 to 1 4/5.

Brown, paler to quite light below. Silvery and brassy tints on sides of abdomen. Blackish brown line from snout tip to eye, then broadly through latter and over postocular along median axis of body to caudal base

Caranx deani Jordan and Seale,
 Proc. U. S. Nat. Mus., vol. 28, 1905,
 p. 776, fig. 2 (type locality, Negros,
 Philippines). — Jordan and
Richardson, Bull. Bur. Fisher.,
 vol. 27, p. 250, 1907 (1908) (Cavite
 record). — Jordan, Tanaka, Snyder,
 Journ. College ~~Sci.~~ Sci., Tokyo,
 vol. 33, p. 130, ~~1913~~ 1913 (Japan).
Caranx (Citula) deani Wakiya, Ann.
 Carnegie Mus., vol. 15, p. 176, pl. 22,
 fig. 30, 1924 (Nagasaki; Ryubuyu).
Caranx nigripinnis (not Day)
Jordan and Seale, Bull. Bur.
 Fisher., vol. 26, p. 14, 1906 (1907)
 (part; Cavite).

59683 U.S.N.M. Hamashima, Japan.
Dr. H. M. Smith. Length 60 to 80 mm.
2 examples. Quite dark and intervening
pale areas with small, scattered, ill
defined whitish spots or dots.

59684 U.S.N.M. Hamashima. Dr. H.
M. Smith. Length 55 mm?

59685 U.S.N.M. Matsushima. Dr. H.
M. Smith. Length 162 mm.

29609 and 29610 A.N.S.P. Wakanoura.
Jordan and Snyder.

Citula gracilis Ogilby, Mem.
Queensland Mus., vol. 3, p. 75, pl.
23, Jan. 28, 1915 (type locality,
Darnley Island, Queensland).

Caranx humerosus McCulloch,
~~Austral~~ Biol. Res. Endeavour, vol. 3,
pt. 3, p. 137, pl. 25 (type locality, Eleven
to fourteen miles N. 59° W. of Pine Point, Queensland,
24 to 26 fathoms; Bustard Bay, 11 to 21 fathoms; near Bowen).

Caranx (Citula) tanakai Wakuiya,
Ann. Carnegie Mus., vol. 15, p. 177,
pl. 73, fig. 1, 1924 (type locality,
Kii; Ryubyeu).

Austral. Mus. Mem., no. 5, pt. 2, p. 189,
Sep. 10, 1929 (reference).

tips of posterior ones black, with dashes of black on last 5 or 6 membranes and more or less pronounced dusky bar near base of fin. Caudal and anal pink, black bar at base of latter, tips narrowly dusky in both. Pectorals clear pink. Ventrals pink, first membranes pearly, second dusky.

5134. Little Santa Cruz Island, Zamboanga. May 28, 1908. Length 63 mm.

8888 and 8890. Mabal Island, east of Zamboanga. September 9, 1909. Length 64 to 97 mm.

16000 and 16001. Mactan Cove, Mactan Island, off northern Cebu. April 6, 1908.

Depth 2 to $2\frac{2}{5}$; head $2\frac{3}{5}$ to $3\frac{1}{3}$, width 2 to $2\frac{3}{4}$. Snout $2\frac{7}{8}$ to 3 in head from snout tip; eye $3\frac{1}{8}$ to $3\frac{7}{8}$, $1\frac{1}{3}$ to $1\frac{2}{5}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{4}$ in interorbital, adipose lids narrow in young; maxillary reaches to or $\frac{1}{3}$ in eye, expansion $1\frac{2}{5}$ to 2, length $2\frac{1}{6}$ to 3 in head from snout tip; interorbital $3\frac{1}{5}$ to 4, convexly elevated. Gill rakers 7 to 9 + 10 to 19, lanceolate, equal gill filaments or $\frac{1}{2}$ of eye.

Scales $57 + 37$ ^{to 40} last 7 on caudal base, in lateral line, arch 1 to $1\frac{1}{8}$ in straight section. Breast and chest naked, extends on sides $\frac{3}{5}$ to pectoral base.

D. VIII - I, I, 20, I to I, I, 22, I, third erect spine $2\frac{2}{3}$ to $2\frac{4}{5}$ in total head

head length, first branched ray 1 to $1\frac{5}{6}$; A. II - I, I, 17, I to I, I, 19, I, first branched ray 1 to 2; upper caudal lobe $1\frac{1}{10}$ to $1\frac{1}{5}$; least depth of caudal peduncle 5 to $5\frac{1}{2}$; pectoral $1\frac{1}{8}$ to $1\frac{1}{5}$, rays I, 20, not reaching beginning of straight section of lateral line; ventral $1\frac{3}{4}$ to $1\frac{7}{8}$.

Back brown, sides and below pale to whitish with silvery reflections. Snout opercle dark brown above no distinct dark marginal blotch. Iris gray. Fins pale brownish, spinous dorsal, ends of ventrals and caudal lobes dark or dusky. Both soft dorsal and anal marginally dark brown. Smallest examples with 8 broad dark

vertical bands, greatly wider than interspaces.

India, Andamans, Malaya, East Indies, Philippines, Riu Kiu, Formosa, Queensland, Melanesia, Micronesia.

Caranx humerosus McCulloch was based on an example 148 mm long, and described with the maxillary reaching $\frac{1}{2}$ in eye or beyond and scales 27 to 31.

1883

Two examples. Atulayan Bay,
Luzon. June 17, 1909. Length 113 to
170 mm. Lower gill rakers 18.
A. II - I, 17. Both with ventrals dusky
terminally.

One example. Bulan Island.
September 13, 1909. Length 25 mm.
A. II - I, 17.

7737. Jolo market. February 12,
1908. Length 95 mm. Depth $2\frac{1}{5}$.
Lower gill rakers 17. A. II - I, 16.

21172. Malcochin Harbor,
Linacapan Island. December 1908.
Length 150 mm. Depth $2\frac{1}{5}$. Lower
gill rakers 20.

Two examples. Mansalay, Mindoro.
January 4, 1908. Length 147 & 173 mm.
Lower gill rakers 17. A. II - I, 16.

One example. Murcielagos Bay,
Mindanao. August 21, 1909.
Length 29 mm. Depth $2\frac{1}{5}$. A. II - I, 16.
Dorsal and anal without lobes.

13785. Mati, Pujada Bay, Mindanao.
May 15, 1908. Length 144 mm. Depth $2\frac{1}{5}$.

maxillary reaches $\frac{1}{2}$ in eye, expansion $1\frac{1}{8}$ to $1\frac{1}{5}$ in eye, length $2\frac{1}{3}$ to $2\frac{1}{2}$ in head; mouth terminally inferior, with 6 pores at chin; narrow bands of villiform teeth in jaws, outer upper row slightly enlarged though hardly caninelike, lower with slightly enlarged single row of teeth posteriorly; interorbital $2\frac{2}{3}$ to $3\frac{3}{4}$, broadly convex; 4 or 5 distinct denticles along preopercle edge around angle; preorbital depth from eye to maxillary $1\frac{1}{2}$ to $1\frac{3}{4}$ in eye. Gill rakers 8 or 9 + 16 or 17, lanceolate, $1\frac{1}{3}$ in gill filaments, which equals eye.

Scales 47 to 50 in lateral line to caudal base and 15 to 17 over caudal; 8 above, 11 below, 23 or 24 predorsal to

7038. Port San Pio Quinto,
Carriguin Island. November 10, 1908.
Length 203 mm. Depth $2\frac{1}{8}$. Lower
gill rakers 18. Like Wakiya's figure
of Caranx (Citula) hemigymnotellus
except no black spot on opercle and
dorsal and anal filaments longer.

7192, 7194. Port San Vicente.
November 18, 1908. Length 260 mm.

9313. Ste. Maria Bay, Siquijor
Bay, Siquijor Island. August 11, 1909.
Length 416 mm.

17198. Verde del Sur Island, Palawan.
April 6, 1909. Length 154 mm. Depth $2\frac{1}{8}$.

A719, A731. Danawan Island, Borneo.
September 27, 1909. Length 375 to 380 mm.

given by Sauvage is surely identical with my materials.

17432 and ~~17433~~ [1934]. Basilan Island, Sulu Group. September 13, 1909. Length 138 to 174 mm. Sulphur

(1934.)

yellow, with slight cadmium shade on back and top of head, lower portions paler. Through eye 3 or 4 narrow purplish stripes extend on cheeks, one immediately below eye reaches preorbital edge and others shorter. Fins colored like body.

8141. Dasol Bay. May 9, 1909. Length 153 mm.

A417, A418, 5183, 5191, 5192. Jolo market. March 7, 1908. Length 253 to 316 mm. (A417.) Rosy, sides washed with yellow, showing most distinctly

A. N. S. P., two examples.
Padang, Sumatra. A. C. Harrison
and H. L. Hiller. 1904.

A. N. S. P., one example. Tuticorin,
India. 19. Madras Fisher.
Dep. Length 93 mm.

A. N. S. P., two examples.
Philippines. 1923. Rev. Joseph
Clemens. Purchased. Length 94
to 150 mm.

A. N. S. P., four examples.
Bombay, India. 1925. Dr. F.
Hallberg. Length 38 to 55 mm.

A. N. S. P., three examples. Durban,
Natal. 1932. H. W. Bell-Marley.
Length 135 to 168 mm.

Small printed text, possibly a library or archival stamp, partially obscured by ink.

Red ink smudges and faint handwritten markings at the bottom of the page.

~~134780 108~~

22814 [429], 22815. Jolo. March 6-7, 1908. Length, 110 to 133 mm. [429.]

In formalin general color olive-green, crossed by pale bar posteriorly in life. Dorsals and anals washed with vermilion. Caudal orange-vermilion.

8767. Lahuy Island. June 11, 1909. Length, 203 mm. Back pale dusky, breast and lower portions of sides nearly white. Broad lateral reddish brown band from pectoral base to caudal base. When fresh sides with numerous irregular vertical bars, later in fading each scale shows pearl-gray center most marked above lateral line. Fins clear, with very pale vermilion wash.

11358 to 11361, 19207, 22044. Maagnas, Lagonoy Gulf, Luzon. June 17, 1909.

Length, 130 to 195 mm.

8819. Maculabo Island. June 13, 1909. Length, 318 mm.

8829, 8830. Maculabo Island. June 14, 1909. Length, 257 to 287 mm.

9201. Mahinog, Camiguin Island. August 3, 1909. Length, 226 mm.

8829, 12528. Malcochin Harbor, Linapacan Island. December 19, 1908. Length,

183 to 203 mm.

7610. Mansalay, Mindoro. June 4, 1908. Length, 195 mm.

15965. Masbate Reef. April 20, 1908. Length, 190 mm.

11209. Matnog Bay. May 31, 1909. Length, 218 mm.

6231. Medio Island, Galera Bay, Mindoro. June 9, 1908. Length, 287 mm.

8229. Murcielagos Bay, Mindanao. August 20, 1909. Length, 195 mm.

4680, 13993. Nasugbu, Luzon. January 16, 1908. Length, 158 to 180 mm.

6531. Off Daet. June 18, 1909. Length, 175 mm.

15166. Pagapas Bay. February 20, 1909. Length, 198 mm.

1 example. Philippines. Length, 233 mm.

5893. Polloc, Mindanao. May 22, 1908. Length, 227 mm.

Carangoides aurochs (Ogilby)

Catula aurochs Ogilby, Mem.

Queensland Mus., vol. 3, p. 79, pl. 25, 1915 (type locality, Edgecombe Bay; off Pine Peak).

Caranx aurochs McCulloch, Biol.

Res. Endeavour, vol. 3, pt. 3, p. 136, pl. April 21, 1915 (11 to 14 miles N.W. of Pine Creek, Queensland, 24 to 26 fathoms; 12 miles N.E. of Bowen, Queensland, 19 to 25 fathoms); Austral. Mus. Mem., no. 5, pt. 2, p. 186, Sep. 10, 1929 (reference).

24098 to 24100. Batan Island.

June 5, 1909. Length 25 to 68 mm.

4 examples.

24104 and 24105. Batan Island.

July 22, 1909. Length 42 to 45 mm.

24104. Cebu market. August 28, 1909.

Length 72 mm.

5 examples. Subat Bay, Luzon.

June 23, 1909. Length 36 to 78 mm.

1 example. Pilas Island, south of Zamboanga. September 12, 1909. Length 34 mm.

1 example. Sablayan, Mindoro Island.

December 13, 1908. Length 47 mm.

23774. San Pascual, Burias Island.

March 8, 1909. Length 24 to 68 mm.

2 examples.

7 examples. Simaluc Sibi Sibi Island,

north of Tawi Tawi. September 23, 1909.

Length 22 to 39 mm.

Depth $1\frac{5}{6}$; head $3\frac{1}{3}$. Snout $3\frac{2}{3}$
 in head from snout tip; eye $3\frac{1}{2}$,
 subequal with snout, $1\frac{1}{5}$ in
 interorbital; maxillary reaches
 $\frac{1}{3}$ in eye, expansion 2 in eye,
 length $2\frac{1}{3}$ in head from snout
 tip; interorbital slopes up
 steeply and high posteriorly. Gill
 rakers 15 or 16 + 38 to 41, rather
 longer than gill fringes or 5 to $5\frac{1}{5}$
 in head.

Breast naked to pectorals
 and behind ventral bases. Arch
 of lateral line $1\frac{1}{2}$ in straight
 section, which latter with 38 to 40
 rather weak spinose scutes.

D. I, VII, I, 21 or 22, first ray
 reaches beyond end of caudal
 or $1\frac{1}{4}$ in fish without caudal,
 third erect spine $2\frac{3}{4}$ in total
 head; A. II - I, 17 or 18, first

branched ray $1\frac{1}{8}$; caudal $1\frac{1}{10}$,
deeply forked; least depth of
caudal peduncle $5\frac{1}{4}$; ventral
 $1\frac{9}{10}$, rays I, 5; pectoral 20, fin
 $2\frac{2}{3}$ in fish without caudal.

Back and upper sides dark
blue, with 6 broad faint cross
bands, which disappear with age,
shading down lower sides to
silvery of under surfaces. Cranio-
nuchal ridge black. Diffuse brown
spot behind eye. Snout, edge of
mandible and chin violet. Dorsal
filament and inner rays of
ventrals black, outer ray and
tip white. Length 167 mm.
(Ogilby.)

Queensland.

Citula aurochis Ogilby was
based on specimens 15.7 to 16.7 mm
long, with the depth $1\frac{4}{5}$ to $1\frac{9}{10}$,
and gill rakers 38 to 41 below.

Carangoides radiatus (Macleay) ¹⁸⁸⁷

Caranx radiatus Macleay, Proc.
Linn. Soc. New South Wales, vol. 5,
pt. 4, p. 537, May 20, 1881 (type
locality, Rockingham Bay,
Queensland), ~~Proc. Linn. Soc. Austral.~~

Mus. Mem., no. 5, pt. 2, p. 189,

Sept. 10, 1929 (reference).

— Saville Kent, Great Barrier Reef,
p. 289, pl. 16, fig. 1, 1893; Naturalist
in Australia, p. 169, 1897. — McCulloch,
Biol. Res. Endeavour, vol. 3, pt. 3, p.
132, pl. 23, April 21, 1915 (type; Port
Hedland, north-western Australia);

Caranx compressus (not Day)
Macleay, Proc. Linn. Soc. New South
Wales, vol. 8, pt. 2, p. 204, July 17,
1883 (Lower Burdekin River); vol.
9, pt. 1, p. 24, 1884 (reference).

23679 to 23681, 23472 to 23474.

Sapientana Island, south of
Zamboanga. September 13, 1909. Length 68
to 80 mm.

23239. Tataan Island, Simaluc Island,
Tawi Tawi Group. February 20, 1908.
Length 98 mm.

23906. Tataan Island. February 21,
1908. Length 80 mm.

18781 and 18782. Tictanan Island,
east of Zamboanga. September 8, 1909.
Length 72 to 95 mm.

10378. Tilig, Lubang Island, vicinity
southern Luzon. July 15, 1908. Length
89 mm.

1890

Depth $2\frac{3}{4}$; head $3\frac{2}{3}$, snout $3\frac{2}{3}$
in head from snout tip; eye $3\frac{7}{8}$,
1 in snout, hind adipose lids
broadly over eye; maxillary reaches
 $\frac{1}{3}$ in eye, expansion $1\frac{4}{5}$ in eye,
length $2\frac{2}{3}$ in head from snout
tip; single series of short
cardiform teeth in each jaw; band
of villiform behind on each
premaxillary, those near symphysis
somewhat enlarged; microscopic
granular teeth on vomer, palatines
and tongue; interorbital moderately
high.

Scales moderately large, adherent,
cycloid, cover breast (except minute
bare patch on lower surface).
Arch of lateral line $1\frac{3}{4}$ in straight
section, which with 38 to 45 scutes,
deepest little before end of
dorsal or width little over half
of eye.

D. VII, I, 22, third spine 2 in total head length, fifth ray $2 \frac{3}{4}$ in fish without caudal; A. II - I, 19 or 20, fifth ray $3 \frac{1}{5}$; pectoral $2 \frac{4}{5}$, rays 20; caudal deeply lunate, lobes pointed, fin $2 \frac{1}{8}$ in total head; ventral $1 \frac{2}{5}$, rays I, 5.

Olive green above, silvery below, with or without 6 or more dark vertical bands extending from back to middle of sides. Large black opercular blotch. Tips of front dorsal rays blackish. End of upper caudal lobe black. Length 203 mm to end of median caudal rays. (Mc Culloch)

Western Australia, Queensland, Northern Territory. A strongly marked species with high basal scaly sheaths to soft dorsal and anal and ends of these rays for greater part free, at least anteriorly.

1892

Genus Blepharis Cuvier

Blepharis Cuvier, Règne Animal,
vol. 2, p. 322, 1817. (Type Zeus
ciliaris Linnaeus, monotypic.)

Blepharichthys Gill, Proc. Acad.
Nat. Sci. Philadelphia, 1862, pp.
431, 436. (Type Zeus crinitus
Mitchell, monotypic.)

59684 U.S.N.M. Hamashima.
Dr. H. M. Smith. Length 66 mm.

71428 U.S.N.M. Habodate market,
Albatross Collection 1906. Length 59 to 82 mm.
3 examples. Smallest with last dark
transverse band at caudal base incomplete
medially.

71680 U.S.N.M. Kafa, Okinawa, Riu Kiu.
Albatross Collection. Length 112 mm.

76257 U.S.N.M. Japan. 1878.
Prof. E. S. Morse. Length 51 to 76 mm. 3 examples.

Body orbicular, deeply rhomboid, strongly compressed. Head moderate. Snout short, wider in young. Eye advanced in head, large, larger in young. Mouth inclined, lower jaw slightly projecting. Teeth in villiform bands in jaws, on vomer, palatines and tongue. Gill rakers lanceolate. Scales minute, imbedded, sometimes apparently naked. Bony spinous scutes in straight section of lateral line, on side of tail little enlarged. First dorsal little developed, with small, short spines, rudimentary or vanishing with age. Soft dorsal and anal similar, in young first 3 to 5 rays

1894

greatly elongated filaments,
shorter with age. No finlets.
Caudal well forked. Pectoral
falcate. Ventral elongate in
young, shorter with age.

Small brilliant silvery
fishes, widely distributed in
tropical seas. The orbicular
young have very long filaments
from the front of the soft
dorsal and anal fins. Species
two.

1895

Blepharis ciliaris (Bloch)

Zeus ciliaris Bloch, Naturges.

Ousland. Fische, pt. 6, p. 29, pl.

191, 1788 (type locality, East Indies⁴);

Surate). — Bonnaterre, Tabl. Ichth.,

p. 71, pl. 89, fig. 372, 1788 (copied). —

Gmelin, Syst. Nat. Linnaeus, pt. 1, p.

1223, 1789 (India). — Walbaum,

Artedi Pisc., vol. 3, p. 399, 1792

(copied). — Forster, Fauna Indica,

p. , 1795. — Lacépède, Hist. Nat.

Poiss., vol. 4, pp. 570, 573, 1802 (copied).

— Schneider, Syst. Ichth. Bloch,

p. 94, 1801 (East Indies).

6305, 11632, 12446. Bugula Island,
Balabac. January 5, 1909. Length 157 to
202 mm.

830. Malcochin Harbor, Linapacan
Island. December 17, 1908. Length 240 mm.

12568, 12569, 15675. Near Palag Bay,
Luzon. June 16, 1909. Length 204 to 220 mm.

14962. Port Ciego, Balabac. January 3,
1909. Length 164 mm.

52467 U.S.N.M., Apia, Samoa.

Bureau of Fisheries. Length 321 to 326 mm.

As Kyphosus waigiensis.

1 example. A.N.S.P. Shetland Island.

Bishop Museum. Length 163 mm.

1896

Caranx ciliaris Günther, Cat. Fish.
Brit. Mus., vol. 2, p. 454, 1860
(Amboyna; India). — Day, Fishes
of Malabar, p. 90, 1865. — Playfair,
Fishes of Zanzibar, p. 62, 1866
(Cape Gardafui; Zanzibar).

— Klunzinger, Verh. zool. bot. Gesell.
Wien, vol. 21, p. 454, 1871 (Red Sea). —
Martens, Preuss. Exped. Ost Asien, vol. 1,
p. 391, 1876 (Amboina).

— Day, Fishes of India, pt. 2, p. 224,
1876. — Macleay, Proc. Linn. Soc. New South
Wales, vol. 5, p. 537, 1881 (Port
Jackson; North Coast Australia).
— Day, Fauna British India, Fishes,
vol. 2, p. 166, 1889.

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caudal peduncle 2 to $2\frac{1}{4}$; pectoral $1\frac{2}{5}$ to $1\frac{1}{2}$; ventral $1\frac{1}{3}$ to $1\frac{3}{5}$; caudal $2\frac{4}{5}$ to $3\frac{2}{5}$ in combined head and body to caudal base, deeply emarginate.

Back and head above olive to dusky brown, sides below lighter and under surface whitish. Gray white streak from preorbital close along and below eye. Iris pale brownish. Fins more or less dusky, paired ones little paler.

Red Sea, Arabia, Gambia, Madagascar, Réunion, India, East Indies, Philippines, Japan, Queensland, Melanesia, Polynesia, Easter Island. Easily distinguished by the soft dorsal higher than the spinous dorsal.

— Gilchrist and Thompson, Ann.
South African Mus., vol. 6, pt. 3, p.
240, 1909 (Natal); Ann. Durban
Mus., vol. 1, pt. 4, p. 384, May 21, 1917
(reference).

12786, 14864, 23095. Dodepo and
Pasejogo Islands, Gulf of Tomini,
Celebes. November 16, 1909. Length 85 to
95 mm.

23116 to 23118. Tabuandata Bay, Gulf
of Boni, Celebes. December 18, 1909.
Length 60 to 88 mm.

12786, 20040, 23457, 23458, 23971, 23973.
Limbe Strait, Celebes. November 10, 1909.
Length 57 to 96 mm.

23550 and
23940. Talisse Island, north of Celebes.
November 9, 1909. Length 84^{to 89} mm.

23499 to 23501. Una Una Road, Binang
Unang Island, Celebes. November 17, 1909.
Length 47 to 100 mm.

1898

Gallichthys ciliaris Lütken, Kon. Danske
Vidensk. Selsk. Skrift. Kjöbenhavn,
vol. 12, no. 6, p. 539, 1880 (development).

Scyris ciliaris Klunzinger, Fische
Roth. Meer., vol. 1, p. 101, 1884. — Beaufort,
Bijdr. Dierkunde Amsterdam, p. 133,
1913 (Amboin).

237

and 23414.
23306₁ Yone Road, Gillolo Island.

December 1, 1909. Length ^{to 105} 95 mm.

23350.
23151 and 23152₁ Makyan Island.

November 29, 1909. Length 75 to 104 mm.

23631 to 23633. Powati anchorage,
Makyan Island. March 28, 1909. Length
97 to 104 mm. (23632 with isopod crustacean.)

12478. Powati anchorage. November 25,
1909. Length 117 mm.

24006 and 24007, 13836, 23113, 23114, 23287
to 23289. Powati anchorage. November 28,
1909. Length 92 to 109 mm.

23312. Gomomo Island, Pitt Passage.

December 3, 1909. Length 88 mm.

and 23486.
23485₁ Kayoa Island. November 29, 1909.

^{87 to}
Length 96 mm.

Sauvage, Hist. Madagascar, Poiss., p. 518, 1891 (reference) 1871

Blepharus ciliaris, Fowler, Proc.
Acad. Nat. Sci. Philadelphia,
vol. 77, 1925, p. 218 (Natal); Bull.
Bishop Mus., no. 22, p. 8, 1925
(Guam); ~~Mem.~~ Mem. Bishop
Mus., vol. 10, p. 151, 1928 (Honolulu;
Tutuila, Samoa; Hawaiian Islands;
Oahu; Maui; Society Islands;
Ebon Island); Proc. Acad. Nat. Sci.
Philadelphia, vol. 81, 1929,
p. 606 (Hong Kong); Mem. Bishop
Mus., vol. 11, no. 5, p. 326, 1931
(Honolulu); Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, p. 450, fig.
31 (adult), 1934 (Durban, Natal).

9
Cuv⁷⁹ Oplegnathus insignis (Kner)

Scarostoma insigne Kner, Sitz. Ber.

Abad. Wiss. Wien, Math.-naturwiss.

Klasse, vol. 56, 1867, p. 715. West coast of

South America. ¹ Schmeltz, Cat. Mus.

² Godeffroy, no. 4, 1869, p. 15 (Chili).

Oplegnathus insignis J. F. Abbott, Proc.

Acad. Nat. Sci. Philadelphia, 1899, p. 359

(compiled).

Oplegnathus insigne Sudgrass and

Heller, Proc. Washington Acad. Sci., vol. 6,

1905, p. 397 (Tagus Cove, Albemarle, Duncan

and Iguana Coves, Galapagos).

Oplegnathus insignis Evermann and Radcliffe,

Bull. U.S. Nat. Mus., no. 95, 1917, p. 109

(Paita and Lobos de Tifulra, Peru).

Oplegnathus fasciatus (not Schlegel) Kröyer,

Naturhist. Tidsskr. Kjöbenhavn, series 2,

vol. 1, 1844-45, p. 113 (Callao, Peru). ³

Alectis ciliaris Jordan and Snyder,
 Annot. Zool. Japon., vol. 3, p. 68,
 1901 (reference). — Jenkins, Bull.
 U. S. Fish Comm., vol. 22, p. 447, 1902
 (1903) (Honolulu). — Snyder, Bull.
 U. S. Fish Comm., vol. 22, p. 525,
 1902 (1904) (Honolulu; Hanalei
 Bay, Kauai). — Waite, Synop.
 Fishes of New South Wales, p. 41,
 1904. — Jordan and Snyder, Proc.
 U. S. Nat. Mus., vol. 27, p. 942, 1904
 (Honolulu). — Jordan and Evermann,
 Bull. U. S. Fish Comm., vol. 23, pt.
 1, p. 200, fig. 78, 1903 (1905) (Honolulu).
 — Jordan and Seale, Bull. Bur.
 Fisher., vol. 25, p. 235, 1905 (1906)
 (Apia). — Stead, Fishes of Australia,
 p. , fig. 57, 1906.

minutely and feebly serrated, flange
finely crenulated. Gill rakers 9 or 10
+ 18 to 20, lanceolate, $1\frac{1}{3}$ to $1\frac{1}{2}$ in gill
filaments, which $1\frac{2}{3}$ to $2\frac{1}{3}$ in eye.

Scales 61 to 64 along above lateral
line to caudal base; tubular scales 48
to 56 in lateral line to caudal base
and 7 to 10 more on latter; 11 scales
above, 18 below, 55 to 63 predorsal
forward above nostrils; 11 transverse
rows on cheek. Suprascapula
crenulated, edge entire. Scales with
5 or 6 basal radiating striae, edge
scalloped; 87 to 90 apical denticles,
with 4 to 6 transverse series of basal
elements; circuli very fine.

D. IV, 12, I, fourth spine $2\frac{1}{2}$ to $3\frac{3}{5}$
in head, fifth ray $1\frac{3}{4}$ to $1\frac{9}{10}$; A.
III, 11, I, third spine $3\frac{1}{4}$ to $3\frac{4}{5}$,
I third ray $1\frac{3}{5}$ to $1\frac{3}{4}$; least depth of

— Snyder, Proc. U. S. Nat. Mus.,
 vol. 42, 1912, p. 411 (Misaki), p.
 496 (Okinawa). — Ogilby, Mem.
 Queensland Mus., vol. 2, p. 88, pl.
 27, 1915 (Moreton and Edgcombe
 Bays). — Jordan and Jordan,
 Mem. Carnegie Mus., vol. 10, no. 1,
 p. 41, December 1922 (Honolulu).

— Wakiya, Ann. Carnegie Mus., vol.
 15, p. 213, pl. 32, fig. 4, 1924 (Misaki;
 Bonin Islands). — Jordan and Hubbs,
 Mem. Carnegie Mus., vol. 10, no. 2, p. 224,
 June 27, 1925 (Tokyo; Misaki Bay;
 Misaki).

— Barnard, Ann. South
 African Mus., vol. 21, pt. 2, p. 549, Oct.
 1927 (False Bay; Agulhas Banks; Natal).

— McCulloch, Austral. Mus. Mem.,
 no. 5, pt. 2, p. 191, Sep. 10, 1929 (reference).

— Weber and Beaufort, Fish. Indo-
 Austral. Archip., vol. 6, p. 269, 1931 (Sabang
 Bay; Minabassa; Banda; Ambon).

Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, p. 240, Feb. 1914 (Misaki; Okinawa)

Oshima, Philippine Journ. Sci., vol. 26, no. 3, p. 401, March 1925 (Tethobai; Peticadore; Misaki)

71

Scorpius vinosa Alleyne and Macleay,
Proc. Linn. Soc. New South Wales, vol. 1,
Feb. 1877, p. 277, pl. 9, fig. 2. Darnley Island.
Macleay, Proc. Linn. Soc. New South Wales,
vol. 5, 1881, p. 398 (reference). Vaillant,
Bull. Mus. Hist. Nat. Paris, vol. 3, 1897,
p.

Kyphosus waigiensis (not Quoy and Gaimard)
Jordan and Seale, Bull. Bur. Fisher.,
vol. 25, 1905 (1906), p. 271 (Opia).

Depth $1\frac{7}{8}$ to $2\frac{1}{5}$; head $3\frac{1}{4}$ to $3\frac{1}{2}$,
width $1\frac{4}{5}$ to $1\frac{7}{8}$. Snout $2\frac{7}{8}$ to $3\frac{1}{10}$ in
head; eye $3\frac{1}{3}$ to $3\frac{4}{5}$, $1\frac{1}{5}$ to $1\frac{1}{3}$ in snout,
 $1\frac{1}{3}$ to $1\frac{1}{2}$ in interorbital; maxillary
reaches eye, $1\frac{1}{8}$ in eye in young,
expansion 2 to $2\frac{1}{2}$ in eye, length 3
to $3\frac{1}{4}$ in head; teeth about 34 in
jaws, uniserial, compressed, end
pointed, entire; interorbital $2\frac{2}{3}$ to 3,
broadly convex; preopercle edge

Scomber filamentosus Munro Park,
Trans. Linn. Soc. London, vol. 3,
p. 36, 1797 (type locality, Sumatra).
— Schneider, Syst. Ichth. Bloch,
(1801) p. 34 (copied).

Gallus virescens (not Linnaeus)
Lacépède, Hist. nat. Poiss., vol. 4,
pp. 583, 584, 1803.

Blepharis fasciatus Rüppell,
Atlas Reise. Nordl. Afrika; Fische,
p. 129, pl. 33, fig. 2, 1828 (type
locality, Djedda, Red Sea). —
Richardson, Ichth. China and Japan,
p. 271, 1846 (China).

vol. 14, 1885, p. 19 (Siao, Sangi). $\frac{1}{m}$
Day, Fauna British India, Fishes,
vol. 2, 1889, p. 49, fig. 18. $\frac{1}{m}$ Thurston,
Pearl Fisher. Gulf of Manaar, 1890,
p. 92 (Tuticorin and Pamban). $\frac{1}{m}$
Steindachner, Abhandl. Senckenberg.
Naturf. Gesellsch., vol. 25, 1900, p. 421
(Ternate).

Kyphosus cinerascens Jordan and Richardson,
Bull. Bur. Fisher., vol. 27, 1907 (1908), p.
260 (Calayan). $\frac{1}{m}$ Kendall and Radcliffe,
Mem. Mus. Comp. Zool., vol. 35, 1912, p. 120
(Cook Bay, Easter Island). $\frac{1}{m}$ Jordan
and Thompson, Proc. U. S. Nat. Mus.,
vol. 41, 1912, p. 596 (Tokyo?). $\frac{1}{m}$ Weber,
Siboga Exped., vol. 57, Fische, 1913, p.
194 (Lirung, Salibabu; Pepera Bay, Rotti).
 $\frac{1}{m}$ Agilby, Mem. Queensland Mus., vol.
2, Dec. 10, 1913, p. 90 (note on Macleay's
reference). $\frac{1}{m}$ McCulloch, Records

Blepharus indicus (not Rüppell)
Cuvier, Hist. Nat. Poiss., vol. 9,
 p. 154, 1833 (Moluccas), —
Valenciennes, Règne Animal,
Cuvier, ed. ill., pl. 58, fig. 3, 1839.
 — Schlegel, Fauna Japonica, Poiss.,
 pts. 7-9, p. 113, pl. 60, fig. 2, 1845
 (coasts of Japan).
 — Richardson, Ichth. China and
 Japan, p. 271, 1845 (Japan).

Alectis indicus Wakiya, Ann. Carnegie
 Mus., vol. 15, p. 214, 1924 (Bonin Islands).

¹/_m Playfair, Fishes of Zanzibar, 1866, p. 46 (Zanzibar)
Philippines, Amboyna) ¹/_m Meyer,
An. Soc. Españ. Hist. Nat. Madrid, vol.
14, 1885, p. 18 (North Celebes). ¹/_m Elera,
Cat. Fauna Filipinas, vol. 2, 1895, p. 484
(Luzon, Manila Bay).

Pimelopterus tahmel Klunzinger,
Verhandel. zool. bot. Gesell. Wien, vol. 20,
1870, p. 795 (Red Sea).

Pimelopterus tahmel Macleay, Proc. Linn. Soc. New South Wales,
vol. 9, 1885, p. 16 (note).
Pimelopterus altipinnoides Guichenot,
Notes Ile Réunion, vol. 2, 1862, p. 7 (26).

Réunion. ¹/_m Vauvage, Hist. Nat.
Madagascar, Poiss., 1871, p. 271, pl. 49a.
(not 59 as ~~stated~~ ^{given} in text), fig. 4 (Réunion).

Pachymetopon squamosum Alleyne and
Macleay, Proc. Linn. Soc. New South Wales,
vol. 1, 1877, p. 275, pl. 9, fig. 1. Still Sound,
New Guinea. ¹/_m Macleay, Proc. Linn. Soc.
New South Wales, vol. 4, 1879, p. 62 (Solomons);
vol. 7, 1882, p. 246 (New Guinea).

↑
vol. 5, 1881, p. 407 (reference);

Carangoides blepharis Bleeker,
 Verh. Batavia. Genoot. (Maatsch.),
 vol. 24, p. 67, 1852 (type locality,
 Batavia); Nat. Tijds. Ned. Indië,
 vol. 3, p. 235, 1852 (Amboina), p.
 237 (Wahai), p. 546 (Amboina), p.
 741 (Kema, Celebes); vol. 4, p. 596,
 1853 (Halmaheira); vol. 5, p. 234,
 1853 (Ceram); Verh. Batavia. Genoot.
 (hal. Ichth. Japan), vol. 25, p. 15,
 1853 (reference); Nat. Tijds. Ned.
 Indië, vol. 6, p. 457, 1854 (Amboina);
 vol. 7, p. 227, 1854 (Macassar), p. 228
 (Manado, Celebes); vol. 11, p. 253,
 1856 (Laboeha, Batjan); Act. Soc.
 Sci. Ind. Neerl., no. 3, vol. 1, p. 4,
 1856 (Manado); no. 5, p. 6, 1856
 (Amboina); vol. 2, no. 7, p. , 1857
 (Amboina); vol. 3, no. 3, p. 3, 1857-
 58 (Kioesio); p. 6 (Japan); Nat.

Cyphosus cinerascens Gilchrist and
Thompson, Ann. Durban Mus., vol. 1,
pt. 4, 1917, p. 323 (part; compiled).

Pimelepterus altipinnis Cuvier, Hist. Nat.
Poiss., vol. 7, 1831, p. 270. New Guinea;
Bourbon. ^m Leuérin-Ménéville, Iconogr.
Règne Animal Cuvier, vol. 4, Poiss.,
1830-44, pl. 25, fig. 1. ^m Guichenot,
Notes Ile Réunion, vol. 2, 1862, p. 26.

Pimelepterus dussumieri Cuvier, Hist.
Nat. Poiss., vol. 7, 1831, p. 273. Gulf of
Bengal. ^m Valenciennes, Règne Animal,
Cuvier, Poiss. Ill., 1839, pl. 43, fig. 1.

Pimelepterus raynaldi Cuvier, Hist.
Nat. Poiss., vol. 7, 1831, p. 274. Straits
of Sunda.

Pimelepterus tahnel Rüppell, Neue
Wirbelth. Fische, 1835, p. 35, pl. 10, fig. 4.
Njeddah. ^m Günther, Cat. Fishes Brit.
Mus., vol. 1, 1859, p. 499 (Red Sea,

Tijds. Ned. Indië, vol. 16, p. 26, 1858
 (Nikoel); vol. 17, p. 142, 1858-59
 (Boleling, Bali); Act. Soc. Sci.
 Ind. Néerl. (Sumatra), vol. 8, p.
 12, 1859 (Benculen); Nat. Tijds.
 Ned. Indië, vol. 20, p. 206, 1859-60
 (Boleling, Bali).

Australian Mus., vol. 13, no. 2, July
20, 1920, p. 59 (St. Crispin Reef; type
of Pachymetopon squamosum). $\frac{1}{m}$ Izuka
and Matsura, Cat. Zool. Spec. Tokyo
Mus., 1920, p. 148 (Ogasawarajima).
 $\frac{1}{m}$ Herre and Montalban, Philippine
Journ. Sci., vol. 33, no. 4, Aug. 1927, p.
436, pl. 7, fig. 3 (Iha, Subic Bay,
Tanao, Tayload Island, Dumaguete,
Tubigan, Bungan). $\frac{1}{m}$ Fowler, Mem.
Bishop Mus., vol. 10, 1928, p. 221
(Society Islands, Ponapé, Shortland
and Easter Islands); Proc. Acad. Nat.
Sci. Philadelphia, 1929 (1930), p. 645
(Shortland Island).

Alectes temminckii Wakuiya, Ann.
 Carnegie Mus., vol. 15, p. 215, 1924
 (type locality, Bonin Islands;
 Iosa; Nagasaki).

Alectes breviventralis Wakuiya, Ann.
 Carnegie Mus., vol. 15, p. 216, pl. 33,
 1924 (type locality, Kii; Tokyo Bay;
 Iwajima; Ryukyu; Formosa;
 Bonin Islands).

14136, 23576, 23579 to 23583, 23614,
23615. Tifu Bay, Bouro Island.
December 10, 1909. Length 54 to 110 mm.

18258, 23107, 23317 and 23318, Tomahu,
Bouro Island. December 11, 1909.

14486 to 14488, 24077. Tomahu.
December 12, 1909. Length 34 to 97 mm.
35 examples.

23360. Uki Island, Bouro Island.
December 9, 1909. Length 62 mm.

15866 and 23958. Danawan and Si
vicinity Duvul Bay, Borneo.
Amil Islands, September 26, 1909.
Length 79 to 90 mm.

23384 and 23744. Danawan and Si
Amil Islands. September 27, 1909.
Length 80 to 86 mm.

Depth $1\frac{1}{4}$ to $1\frac{1}{3}$, greater than length in young; head $2\frac{3}{4}$ to $2\frac{4}{5}$, width $2\frac{1}{4}$ to $2\frac{2}{3}$. Snout 3 to 4 in head from snout tip; eye $2\frac{1}{2}$, greater than snout in young to subequal with age, greater than interorbital; maxillary reaches $\frac{1}{4}$ in eye, to eye with age, expansion $2\frac{2}{5}$ to 3 in eye, length $2\frac{1}{2}$ to $2\frac{2}{3}$ in head from snout tip; interorbital 3 to 4, convexly elevated, median ridge to spinous dorsal. Gill rakers 4 + 15, lanceolate.

Lateral line without scales, straight section $1\frac{1}{10}$ to $1\frac{1}{6}$ in arch, keel and scutes very slight.

D. VI - II, 19, spines obsolete, first six rays elongated filaments longer than body; A. II - I, 16, I,

soft fin like soft dorsal, only first 4 rays filaments; caudal $1\frac{1}{10}$ to $1\frac{1}{5}$ in head, forked; ventral $1\frac{1}{4}$ in fish without caudal in young, equals head with age; pectoral reaches little beyond angle of lateral line, 1 to $1\frac{1}{8}$ in total head length.

Back gray to drab, sides and below silvery to silvery white. Iris silvery white. Young with 5 or 6 broad transverse gray bands, broader than pale interspaces. Fins pale brown, with black blotch on front of soft dorsal and also ventral largely blackish.

1909

Red Sea, Arabia, Zanzibar,
 Natal, South Africa, Madagascar,
 Andamans, East Indies,
 Philippines, Formosa, China,
 Riu Kiu, Japan, Micronesia,
 Melanesia, Polynesia, Hawaii,
 New South Wales, Queensland.

D. 5457. Legaspi Light, S. 60° W.,
5 miles (lat. 13° 12' N., long. 123°
49' 40" E.), east coast of Luzon,
In 146 fathoms. June 8, 1909.
Length 33 mm.

^{Two} ~~Two~~ examples. Parang,
Mindanao. May 23, 1908. Length
⁴⁸
~~95~~ to 98 mm.

Can 129

Johnius jubatus (Bleeker)

~~1529~~

Corvina jubata Bleeker, Natuurk. Tijdschr.
Nederl. Indië, vol. 8, 1855, p. 160.

Bandjermasin, in rivers, Borneo. $\frac{1}{m}$

Günther, Cat. Fishes Brit. Mus., vol. 2,
1860, p. 305 (compiled). + Duncker,

Mitteil. Naturh. Mus. Hamburg, vol. 21,
1903 (1904), p. 154 (Banjar Mahurani).

Johnius jubatus Bleeker, Verhandel.

Kon. Akad. Wetensch. Amsterdam, series
3, vol. 14, 1874, p. 52 (Sumatra; Borneo);

Atlas Ichth. Ind. Néerland., vol. 9, 1877,
pl. (4) 387, fig. 5.

Depth $3\frac{1}{5}$ to $3\frac{2}{3}$; head 3 to $3\frac{1}{4}$, width
 $1\frac{3}{4}$ to 2. Snout $3\frac{4}{5}$ in head; eye $3\frac{2}{3}$ to
 $4\frac{1}{2}$, $1\frac{1}{3}$ in snout, $1\frac{1}{3}$ to $1\frac{1}{2}$ in interorbital;
maxillary reaches opposite eye center, length
3 in head; teeth villiform, above outer
row but slightly longer, lower subequal;
interorbital convex; preopercle edge

U.S.N.M., no. 47815, Port Jackson,
Australian Museum. Length 185 mm.

U.S.N.M., no. 47816. Port Jackson.
Australian Museum. Length 203 mm.

U.S.N.M., no. 51055, Hawaii.
Bureau of Fisheries (03432).
Length 110? mm.

U.S.N.M., no. 55213. Hawaii.
Bureau of Fisheries. Length
39? mm.

U.S.N.M., no. 55369, Honolulu.
Albatross Collection (1337).
Length 68? mm.

U.S.N.M., no. 55535, Hawaiian
Islands. Length 138? mm.

U.S.N.M., no. 75928, Japan?
P.L. Joury. Length 133 to 185 mm.
Two examples.

Leaded
Follow—Incl Caps

105

134799

Depth $3\frac{1}{3}$; head 3, upper profile very slightly convex. Snout $2\frac{1}{5}$ in head from snout tip; eye $3\frac{1}{2}$, $1\frac{1}{2}$ in snout, equals suborbital depth; mandible slightly protrudes; maxillary reaches $\frac{4}{5}$ to eye, length $2\frac{4}{5}$ in head from snout tip; canines weak (shown as moderate on figure), hind teeth ^{small and} pointed; interorbital low, less than eye.

Scales 48 in lateral line (44 on figure); 3 above, 12 below, pre-dorsal shown forward only opposite hind preopercle ridge; no postocular scale.

D. X, 9, third spine 3 in head, third ray $2\frac{4}{5}$; A. III, 8, third spine $4\frac{3}{4}$, second ray $3\frac{1}{3}$; caudal $1\frac{1}{3}$, emarginate; least depth of caudal peduncle $3\frac{1}{10}$; pectoral $1\frac{3}{4}$; ventral $1\frac{7}{8}$. □ (Sauvage.)

Uniform greenish. Muzzle clouded. Traces of bluish streaks before eye. Length 55 mm. (Valenciennes.)

Barro Island. Apparently differs in the small pectoral fin, shown by Sauvage as $1\frac{3}{4}$ in the head.

Lethrinus borbonicus Valenciennes

Lethrinus borbonicus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 303.

Saint Denis, Bourbon. + GUICHEROT, Notes Île Réunion, vol. 2, 1862, p.

25, SAUVAGE, Hist. Nat. Madagascar, Poiss., 1891, pl. 21, fig. 2 (type)

+ BARNARD, Ann. South African Mus., vol. 21, pt. 2, 1927, p. 634

(Delagoa Bay).

Depth $3\frac{3}{5}$; head $3\frac{1}{10}$, upper profile slightly depressed over eye. Snout 2 in head; eye $3\frac{1}{8}$, $1\frac{2}{5}$ in snout, equals preorbital depth; maxillary reaches $\frac{7}{8}$ to eye, length $2\frac{2}{3}$ in head; strong canines (apparently 4) in front of each jaw, hind teeth obtuse molars, each with deep longitudinal groove; interorbital low, broader than eye.

1912

C. S. N. M., No. 71152. Japan.
Albatross Collection. Length
255? mm.

C. N. S. P., one example. Natal.
1922. H. W. Bell Marley. Length
115 mm.

Loaded
Follow - Incl Fans

101

131789 113

Provisionally I have placed Lethrinus sordidus Valenciennes and Lethrinus cocosensis Bleeker as synonyms. These are based on small or young specimens, and I find little to distinguish them. Possibly Lethrinus glyphodon Günther is another synonym. It shows: depth $2\frac{4}{5}$ to 3 times in the total length, compared with $3\frac{3}{4}$ in total length for his Lethrinus leutjanus. It was based on a dried skin 346 mm. long. Professor Schmidt has recently identified Günther's form from Riu Kiu, based on two small examples 134 and 160 mm. long.

8141, 8168, 9258. Alibijaban Island, Ragay Gulf, Luzon. March 6, 1909.

Length 204 to 250 mm. [8168.] Pale reddish longitudinal bands on sides 3, possibly another above lateral line in life, first below lateral line anteriorly crosses same below dorsal axil, second from middle of opercle back to middle of caudal peduncle, third behind pectoral base to lower caudal peduncle. Head olive, without cherry bars on opercular edges or across eye. Fins vermilion.

7836, 7837, 9359, 13207, 15970. Bugsuk Island, Balabac. January 5, 1909.

Length 230 to 286 mm.

A521. Eulan Island. September 13, 1909. Length 298 mm.

A578. Busbus Point, Siasi Island. September 20, 1909. Length 318 mm.

17693. Busin Harbor, Burias Island. March 8, 1909. Length 223 mm.

8805. Butauanan Island, Luzon. June 13, 1909. Length 300 mm.

8376. Calangaman Island. March 16, 1909. Length 260 mm.

7790, 7791. Candaraman Island, Balabac. January 4, 1909. Length 258 to 275 mm.

8851. Dasol Bay. May 9, 1909. Length 275 mm.

6623. East side, Verde Island. July 22, 1908. Length 282 mm.

18833. Endeavor Strait, Palawan. December 22, 1908. Length 198 mm.

8993. Gubat Bay. June 23, 1909. Length 274 mm.

Genus Scyris Cuvier

Scyris Cuvier, Règne Animal, ed.
2, vol. 2, p. 209, 1829. (Type

Gallus alexandrina ~~Roulet~~

Geoffroy Saint Hilaire, monotypic.)

f.¹ Caudal cuneate, with median point behind. Ato lithoides ^{marginis} ~~caudal~~

f.² Caudal emarginate. Atractoscion

b.² Johninae. Pores on chin.

g.¹ Soft dorsal and anal densely scaly; silvery dermal spots or photophore like body on under surface of body. Pseudosciaena

g.² Soft dorsal and anal less scaly, nearly naked or scales confined basally on fins; no silvery dermal spots. Johnia

a.² Sciaeninae. A single barbel at chin.

Sciaena

Canis 3
manus only

Body greatly compressed, very
 deeply ovoid, edges trenchant.
 Head moderate, strongly
 compressed. Snout deep, well
 compressed. Eye moderate, high.
 Mouth inclined, mandible
 protruding. Maxillary nearly
 reaches eye, expanded behind.
 Teeth in villiform bands in
 jaws, on vomer, palatines and
 tongue. Nostrils together.
 Preorbital depth much greater
 than eye-diameter. Gill rakers
 lanceolate, 25 below. Scales
 extremely minute or absent.
 Lateral line strongly curved
 anteriorly, straight and
 horizontal below middle of
 dorsal and scutes very small.
 First dorsal not developed in

adult, distinctly visible in young. Front six dorsal and anal rays filiform, short with age. Ventrals elongate, filiform. Silvery, young with dark vertical bands.

Species several in tropical seas.

Scyris indica Rüppell

Scyris indicus (Cuvier) Rüppell,
 Atlas Reise nördl. Afrika,
 Fische, p. 128, pl. 33, fig. 1, 1828
 (type locality, Djedda, Red Sea);
 Neue Wirbelth., Fische, p. 51,
 1835 (reference). — Cantor, Journ.
 Asiatic Soc. Bengal, vol. 18, pt. 2,
 p. 1116, 1849 (1850) (Pirang Sea).

Analysis of the genera 6 ft. ~~some~~ ^{of} ~~the~~

a. no barbels at chin.

b. no pores at chin.

c. Otolithinae. Canines in front of both jaws, conspicuous. Otolithes.

c.² Collichthyinae. Dentition weaker, without conspicuous front canines or only outer row of teeth in jaws sometimes little enlarged.

d. Soft dorsal very long, rays 40 to 43, fin base 3 times that of spinous dorsal; pectoral long as head. Pama

d.² Soft dorsal shorter, rays less than 40; pectoral less than head.

e. Bones of head loose, more or less cavernous; mouth well inclined; luminous or photophore like bodies on under surface of body. Collichthys.

e.² Bones of head firm; mouth less inclined; no photophore like bodies. ³ Cave ^{named} ^{only}

Scyris indica Cuvier, Hist. Nat.

Poliss., vol. 9, p. 145, pl. 252, 1833

(Pondicherry; Java; Massana).

— Swainson, Nat. Hist. Animals,

vol. 2, p. 251, 1839 (on Cuvier pl. 252).

— Richardson, Ichth. China and Japan, p. 276, 1846 (China: seas).

caudal base, symmetrical with
second; bands all broader below,
where about $\frac{2}{3}$ pupil diameter.

Breast and belly with orange
wash. Iris silvery except as crossed
by dark band. Soft vertical fins
very pale hyaline vermilion.

Pectorals hyaline pink. Ventrals
slightly orange.

1 example. Tonguil Island, east of
Gumila Reef, south of Zamboanga.
September 14, 1909. Length 36 mm.

1 example. Usada Island, vicinity
of Jolo. March 3, 1908. Length 48 mm.

8039. Tamindao Island. February 26,
1908. Length 57 mm. [male with buccal ova.]
Also 5 others, same data: Length 50 to 58 mm.

Seyris indica

1918

— Fowler, Journ. Acad. Nat. Sci.
Philadelphia, ser. 2, vol. 12, p. 513,
June 10, 1904 (Padang); Proc. Acad.
Nat. Sci. Philadelphia, vol. 57, p.
86, Jan. 1905 (Padang material).

— Fowler, Copeia, no. 58, p. 63,
June 18, 1918 (Philippines). —

Fowler and Bean, Proc. U. S. Nat.
Mus., vol. 62, art. 2, 1922, p. 21
(Tabao). — Fowler, Occas. Pap.

Bishop Mus., vol. 8, no. 7, p. 378,
1923 (Honolulu); Proc. Acad.

Nat. Sci. Philadelphia, vol. 77,
1925, p. 217 (Delagoa Bay); &

Mem. Bishop Mus., vol. 10, p. 151,
1928 (Honolulu; New Guinea);

1105

9 flange. D. X, I, 25, third and fourth
spines subequal or $1\frac{2}{3}$ in total head,
fourth ray 2; A. II, 8, I, second spine
enlarged and robust, longer than rays,
 $1\frac{3}{5}$; caudal $1\frac{1}{3}$, truncate; least depth
of caudal peduncle $2\frac{7}{8}$; pectoral $1\frac{2}{5}$;
ventral $1\frac{1}{4}$.

Above gray or bluish green, sides and
below silvery. Iris yellow, orbital edge
brownish. Fins yellowish, verticals dusted
with brown. Length 225 mm. (Bleeker.)

This nominal form is likely American,
~~likely~~ ^{evidently} Bairdiella armata Gill from
Panama. The single specimen in the
Hamburg Museum alleged by Bleeker to
have come from Japan.

vol. 11, no. 5, p. 327, 1931 (reference);
 vol. 11, no. 6, p. 405, 1934 (reference);
 Proc. Acad. Nat. Sci. Philadelphia,
 vol. 86, (1934) p. 450, (natal); vol.
 87, p. 142, 1935 (Bangkok; Suracha;
 Paknam).

(on Bleeker).

Depth $3\frac{1}{2}$; head $3\frac{3}{4}$, width 2.

Snout 4 in head from snout tip; eye $4\frac{3}{4}$, $1\frac{1}{8}$ in snout, 1 in interorbital; maxillary reaches $\frac{1}{2}$ in eye, expansion $1\frac{2}{3}$ in eye, length $2\frac{2}{3}$ in head from snout tip; lower jaw little protruding; teeth anteriorly pluriserial, become biserial on sides of jaws; outer upper teeth conic, well spaced, without canines, inner very small; lower teeth with outer row very small, inner conic, well spaced and not large as outer upper teeth though 2 to 4 somewhat enlarged before symphysis; interorbital 4 in head, low; preopercle serrae strong, especially 2 or 3 at angle and where pointing down.

9 Scales 63 along above lateral line, 53 along below, 57 tubes in lateral line (on figure), 10 above, 9 below; 5 rows on cheek to preopercle ridge, with 3 more on preopercle

Alectes indicus Bean and Weed,
Proc. U. S. Nat. Mus., vol. 42, p. 600,
1912 (Batavia). — Jordan and
Jordan, Mem. Carnegie Mus., vol. 10,
no. 1, p. 41, Dec. 1922 (Honolulu). —

Barnard, Ann. South African Mus.,
vol. 21, pt. 2, p. 550, Oct. 1927 (Delagoa
Bay).

— Wakiya, Ann. Carnegie Mus., vol. 15,
p. 214, 1924 (Bonin Islands).

rest of head, median pale line
from interorbital to spinous dorsal.
Pale line from each parietal region
up and along bases of dorsals and
unite behind soft dorsal to form
single median line along upper
surface of caudal peduncle. Third
pale line from snout above, over
eye back along lateral line at first
to middle of upper caudal lobe
basally. Fourth pale line from iris
above back over upper postocular
region. Fifth pale line over postocular
and along median axis of body to
caudal base medianly. Sixth pale
line from infraorbital to pectoral
axil and back along lower face of
caudal peduncle to middle of base
of lower caudal lobe.

1921

Alectes indica Ogilby, Mem.
Queensland Mus., vol. 3, p. 83,
pl. 26, 1915 (Burnett River).

— McCulloch, Austral. Mus. Mem., no.
5, pt. 2, p. 191, Sep. 10, 1929 (reference).

1003

pointed. Length 138 mm. (Günther.)

A doubtful species with uncertain locality. Günther says "This species may be readily distinguished by the small number of the dorsal rays. At present, I know of no better place for it, its physiognomy is not that of a Sciaena."

It surely does not seem to agree with any Indo-Pacific sciaenoid known to me. As its locality is in question possibly it may be American, as it suggests Bairdiella chrysurus.

Bairdiella
~~Pseudosciaena~~ acanthodes (Bleeker). Cassidy

Pseudosciaena acanthodes Bleeker,
Verhandel.^{Kon.} Akad. Wetensch. Amsterdam,
vol. 18, no. 6, 1879, p. 27, pl. 1. Japan.

Bairdiella acanthodes Jordan and Snyder,
Annotat. Zool. Japon., vol. 3, pts. 2-3, 1901, p.
81 (name only). ^m Jordan and Thompson,
Proc. U. S. Nat. Mus., vol. 39, 1911, p. 242.

Zeus gallus (not Linnaeus) Bloch,
 Naturges. Ausland. Fische,
 vol. 6, p. 38, pl. 192, fig. 1, 1787
 ("America" [= East Indies in part]).
 — Bonnaterre, Tabl. Ichth., p. 76, pl.
 38, fig. 153, 1788 (India). — Gmelin,
 Syst. Nat. Linn., pt. 1, p. 1220, 1789
 (India). — Bloch, Naturges.
 Ausland. Fische, vol. 9, p. 99, 1795
 (Tranquebar). — Walbaum, Artedi
 Pisc., vol. 3, p. 396, 1795 (copied). —
Forster, Fauna Indica, p. 14, 1795.
 — Schneider, Syst. Ichth. Bloch,
 p. 94, 1801 (India).

African Mus., vol. 21, pt. 2, October 1927, p. 569; this is not a sciaenoid as it has 3 anal spines. Its formula is given as: D. XI, 14; A. III, 9.

Sciaena brevadorsalis Günther Cat 129
Sciaena brevadorsalis Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 295. East Indies?

Depth 4; head 4. Snout short, obtuse, shorter than eye; eye 3 1/2, less than interorbital; maxillary reaches little beyond center of eye; upper jaw overlaps lower; mouth cleft very oblique; outer row of premaxillary teeth scarcely enlarged; preopercle rounded, denticulate throughout. Scales 47 in lateral line. Suprascapula very large, would cover eye, edge with flexible setiform teeth. D. X, III, 11; A. II, 11, second spine 2 2/3 in head; caudal elongated,

Caranx gallus Günther, Cat.

Fish. Brit. Mus., vol. 2, p. 455,
1860 (Malay Peninsula; China). —

— Day, Proc. Zool. Soc. London, p. 25, 1865
(Cochin, Malabar); Fishes of Malabar,
p. 91, 1865. — Playfair, Fishes of

Zanzibar, p. 62, 1866 (Aden; East Africa).

— Schmeltz, Cat. Mus. Godeffroy, no. 4,
p. 17, 1869 (Kandavu).

— Klunzinger, Verh. zool. bot. Gesell.
Wien, vol. 21, p. 454, 1871 (Red Sea).

— Schmeltz, Cat. Mus. Godeffroy, no. 5,
p. 27, 1874 (Viti Islands). — Günther,

Journ. Mus. Godeffroy, vol. 5, pt. 11, p.
135, 1876 (Hawaii; Society Islands).

— Day, Fishes of India, pt. 2, p. 224,
pl. 57, fig. 3, 1876. — Peters, Monatsb.

Akad. Wiss. Berlin, p. 836, 1876 (1877)
(New Ireland).

1401

inferior quality. Some species are hunted by anglers as they furnish sport.

These fishes are often known as croakers, grunters or drums, due to their producing sounds, usually heard under the water during the breeding season. It is produced apparently by muscular movement of the air bladder.

Three nominal forms, not recognized since originally described and of uncertain status are here appended.

Corvina punctata Castelnau. p. 129

Corvina punctata Castelnau, Mém.

Poiss. Afrique Australe, 1861, p. 9.

Port Natal. $\frac{1}{2m}$ Gilchrist and Thompson,

Ann. Durban Mus., vol. 1, no. 4, 1917, p.

350 (compiled).

According to Barnard 10 10 6 x note (Ann. South

— Macleay, Proc. Linn. Soc. New South
Wales, vol. 5, pt. 4, p. 538, 1881 (Endeavour
River, Queensland). — Karoli, Termesz.
Füzetek, Budapest, vol. 5, p. 161, 1881
(Singapore).

— Boulenger, Proc. Zool. Soc. London,
p. 661, 1887.

— Kent, Great Barrier Reef, p. 289, 1893;
Natural. in Australia, p. 169, text figs
153, 1897; p. 153, pl. 27, fig. A. pl. 16, fig. 2

— Stead, Edible Fish. New South Wales,
p. 88, pl. 58, 1908.

246

with small crimped basal scale;
scales with
7 to 12 basal radiating striae; 76 to 84
apical denticles with 1 or 2 transverse
series of basal elements; ~~small~~ circuli
fine.

D. VII - I, 9, I, third spine 2 to $2\frac{1}{4}$ in
total head length, first ray $1\frac{2}{3}$ to
 $1\frac{4}{5}$; A. II, 8, I, second spine $2\frac{7}{8}$ to
 $3\frac{1}{4}$, first ray $1\frac{3}{4}$ to $2\frac{1}{5}$; caudal $1\frac{2}{5}$
to $1\frac{1}{2}$, hind edge emarginate;
least depth of caudal peduncle
 $2\frac{4}{5}$ to 3; pectoral $1\frac{3}{5}$ to $1\frac{2}{3}$;
ventral $1\frac{3}{5}$ to $1\frac{2}{3}$.

Pale brown generally, lighter
below, with silvery white sheen
largely with pale lilac tints.
Iris silvery gray, little more
grayish above. Snout and front
more or less deeper brownish than

1925

Carangoides gallus Bleeker, Versl.
Kon. Akad. Wet. Amsterdam,
vol. 12, pp. 53, ^(Singapore) 74, 1861 (Pinang);
vol. 14, p. 109, 1862 (Batjan).

Citula gallus Bleeker, Ned. Tijds.
Dierk., vol. 1, p. 242, 1863 (Obi);
vol. 2, p. 174, 1865 (Siam);
Verslag. Kon. Akad. Wet. Amsterdam,
ser. 2, vol. 2, pp. 293, 300, 1868 (Rio,
Bintang); ^{Ned. Tijds. Dierk.} vol. 4, p. 132, 1873 (1874)
(reference); ^{Rech.} Faune Madagascar,
Pollon et Van Dam, pt. 4, p. 99, 1874
(reference).

Scyris gallus Klunzinger, Fische
Roth. Meer., vol. 1, p. 101, 1884.

Caranx (Alectis) gallus Stead, Additional
Faun. New South Wales, p. 16, pl. 4,
1907.

tubes frequently branched. Dorsal deeply notched or divided as spinous and soft rayed sections, latter usually longer. Anal usually much shorter than soft dorsal, spines 1 or 2, rarely 3. Caudal variably truncate, cuneate or pointed, never forked. Ventrals thoracic, with spine and 5 rays.

A large group of perch like fishes, living in most warm seas except Oceania. All are shore forms and none live in the deep seas though a few live in fresh water. Many are highly valued food fishes, some with choice well flavored flesh. Several species of large size are important fishery products, though the average is from 12 to 18 inches. In some countries the large air bladder is valued as a singlass of

1926

Alectes gallus Oshima, Philippine
Journ. Sci., vol. 26, no. 3, p. 399,
March 1925 (Taihoku, Formosa).

Hora, Mem. Asiatic Soc. Bengal,
vol. 6, pt. 9, p. 484, 1924 (Singgora).—

1052
Cuv 129 Upeneichthys vlamingii (Cuvier)

Upeneus vlamingii Cuvier, Hist. Nat. Poiss.,
vol. 3, 1829, p. 452, pl. 71. ~~Motuaro Island,~~
Queen Charlotte Sound. $\frac{1}{m}$ Richardson,
Ann. Mag. Nat. Hist. London, vol. 9, 1842,
p. 211 (Motuaro Island, Queen Charlotte
Sound); Travels in New Zealand, Dieffen-
bach, vol. 2, 1843, p. 207. $\frac{1}{m}$ Castelnau, Proc.
Zool. Acclimat. Soc. Victoria, vol. 2, 1873,
p. 39 (Melbourne market); Proc. Linn.
Soc. New South Wales, vol. 3, 1878, p.
(350) 372 (Port Jackson).

Upeneoides vlamingii Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 400 (compiled).
 $\frac{1}{m}$ Macleay, Proc. Linn. Soc. New South Wales,
vol. 5, 1881, p. 403 (Port Jackson, Port
Phillip). $\frac{1}{m}$ Fowler, Proc. Acad. Nat. Sci.
Philadelphia, 1923, p. 44 (Melbourne);
1929 (1930), p. 648 (Melbourne examples).

1927

Gallichthys major Cuvier, Hist.
Nat. Poiss., vol. 9, p. 168, pl. 254
(young), 1833 (type locality,
Pondicherry).

— Richardson, Ichth. China Japan,
p. 271, 1846 (China seas).

— Bleeker, Verh. Batavia. Genoot.
(Bali), vol. 22, p. 3, 1849 (west
coast of Bali); (Java), vol. 23,
p. 8, 1850 (Java).

Cantor, Journ. Asiatic Soc. Bengal,
vol. 18, pt. 1, p. 136, 1849 (1850).
(Pinang Sea; Singapore).

narrow, only $\frac{2}{3}$ width of maxillary expansion.

Scales 75 in lateral line; 5 or 6 above, 11 below (13 on figure above anal origin), predorsal forward at least opposite front of eye, 5 rows across cheek to premaxillary ridge and 4 more rows across preopercle flange; muzzle, inclusive of maxillary, naked.

D. X, 26 or 27, fifth spine 2 in total head length, first branched ray $2\frac{1}{5}$; A. III, 23 or 24, third spine $3\frac{3}{4}$, first ray $2\frac{4}{5}$; least depth of caudal peduncle $3\frac{2}{3}$; pectoral $1\frac{1}{5}$; ventral $1\frac{4}{5}$; caudal $3\frac{3}{5}$ in combined head and body to caudal base, fin widely forked.

Upper half of body blue gray, below silvery white. Dorsal and anal dark brownish gray. Caudal and paired fins paler, with tinge of yellowish or

Alectes major Jordan and
Richardson, Bull. Bur. Fisher.,
vol. 27, p. 251, 1907 (1908) (Formosa;
Manila); Mem. Carnegie Mus.,
vol. 4, no. 4, p. 180, 1909 (Takao).
— Snyder, Proc. U. S. Nat. Mus.,
vol. 42, 1912, p. 411 (Formosa). —
Oshima, Philippine Journ. Sci.,
vol. 26, p. 400, March 1925 (copied).

1291

no 129

Cypselichthys japonicus Steindachner and
Döderlein

Cypselichthys japonicus Steindachner and
Döderlein, Denkschr. Akad. Wiss. Wien,
math.-naturwiss. Classe, vol. 48, 1884, p.
15, pl. 7, fig. 1. Tokio and Yokohama.
Ishikawa and Matsuura, Prelim. Cat.
Fishes Mus. Tokyo, 1897, p. 57. + Franz,
Abhandl. Kon. Bayer. Akad. Wiss., vol. 4,
supplement band 1, 1910, p. 47 (Yokohama).

Depth $3\frac{4}{5}$; head 4. Snout $4\frac{3}{4}$ in head
from snout tip; eye $3\frac{1}{5}$, little greater
than snout; maxillary reaches $\frac{1}{5}$ in
eye, expansion $2\frac{1}{5}$ in eye, length 3 in
head from snout tip; teeth minute,
in narrow band in jaws, also patch
on vomer and palatines; interorbital
 $3\frac{1}{2}$, convex; preopercle edge denticulate
(entire in figure); suborbital very

1929

Gallichthys chevola Cuvier,

Hist. Nat. Poiss., vol. 9, p. 175, 1833

(~~type locality~~, on Chevola parah

Russell, Fishes of Coromandel, vol. 1,

p. 46, pl. 58, 1803, type locality,

Vizagapatam).

Seyres rüppellii Swainson, Nat.

Hist. Animals, vol. 2, p. 251, 1839

(on Rüppell pl. 33).

1295
Cret 30

Genus Cypselichthys Steindachner and Döderlein
Cypselichthys Steindachner and Döderlein,
Denkschr. Akad. Wiss. Wien, math.-
naturwiss. Classe, vol. 48, 1884, p. 14. Type
Cypselichthys japonicus Steindachner
and Döderlein, monotypic.

Body compressed, rather slender.
Head rather small, obtuse. Eye large,
well advanced. Mouth terminal, small.
Very small teeth in both jaws, on vomer,
tongue, palatines and pterygoids.
Preopercle very finely denticulate. ~~Subopercle~~
~~Branchiostegals~~ Branchiostegals 7. Scales
stenoid. Dorsal continuous, spines slender.
Soft dorsal and anal with long bases
and well scaled. Caudal well forked,
lobes long and slender. Ventral inserted
behind pectoral bases.

1930

Blepharis gallichthys Swanson,
Nat. Hist. Animals, vol. 2, p. 250,
1839 (on Cuvier pl. 254) *

Carangoides gallichthys Bleeker,
Nat. Tijds. Ned. Indie, vol. 2, p.
471, 1851 (Rio); vol. 3, p. 690, 1852
(Wahai), p. 717 (Karang hadji,
Banka); Verh. Batavia. Genoot.
(makreel.), vol. 24, p. 68, 1852
(Batavia, Pasuruan, Banjuran,
Samarang); (Bengal), vol. 25,
p. 44, 1853 (reference); Nat. Tijds.
Ned. Indie, vol. 7, p. 227, 1854
(Macassar), p. 312 (Bantem), p. 361
(Batjan); vol. 8, p. 393, 1855
(Amboina); vol. 9, p. 282, 1855
(Macassar), p. 394 (North Pasuruan);
vol. 10, p. 347, 1856 (Rio, Bintang);

Family Sciaenidae

Can 121

Body somewhat elongated, oblong.
Mouth variously moderate to large,
more or less protractile. Maxillary
entirely or partly slips below preorbital,
without supplementary maxillary.
Teeth mostly villiform, an enlarged
row of canines sometimes present.
Palate and tongue toothless. Nostrils
double. Suboculars, when present,
narrow. Gill membranes free from
isthmus. Gills 7, slit behind fourth.
Pseudobranchial usually present.
Air bladder usually present, mostly
large and with lateral appendages.
Otoliths large. Vertebral 24 to 30.
Stomach coecal, intestine with 2
convolutions. Pyloric appendages few,
feeble. Scales cycloid or more or less
finely ctenoid. Lateral line single,

vol. 11, p. 253, 1856 (Laboeha, Batjan),
 p. 419 (Muntok, Banka); ^{vol. 12, p. 245, 1856 (Pias)} Act.
 Soc. Sci. Ind. Neerl., vol. 1, no. 3,
 p. 9, 1856 (Macassar); vol. 3, no. 9,
 p. 2, 1857-58 (Padang), p. 5
 (Priaman), p. 6 (Siboga); Nat.
 Tijds. Ned. Indië, vol. 21, p. 138,
 1860 (Muntok, Banka); vol. 22,
 p. 108, 1860 (Muntok).

greenish. Large dark blotch at pectoral origin. Length 185 mm.

(Steindachner and Döderlein.)

Japan.

1932

Alectes ciliaris (not Bloch) Jordan
and Evermann, Proc. U. S. Nat. Mus.,
vol. 25, p. 338, 1902 (Formosa).

Depth $2\frac{2}{3}$ to $2\frac{3}{5}$; head $2\frac{1}{4}$ to $2\frac{2}{5}$,
 width $1\frac{7}{8}$ to 2. Snout $4\frac{2}{5}$ to 5 in
 head from snout tip; eye $2\frac{1}{2}$ to $2\frac{3}{4}$,
 much greater than snout or
 interorbital; maxillary reaches
 $\frac{3}{5}$ in eye, expansion 3, length 2 to
 $2\frac{1}{4}$ in head; teeth villiform, in
 bands in jaws and on vomer
 and palatines; interorbital 5 to
 $5\frac{1}{2}$, nearly level; preopercle ridge
 entire, hind edge finely serrated.
 Gill rakers 8 + 16, greater than
 gill filaments or 2 to $2\frac{3}{4}$ in eye.
 Scales 21 to 23 in lateral line
 to caudal base and 3 or 4 more
 on latter, 2 above, 6 below, 3
 predorsal, 2 rows on cheek; head
 naked, except cheeks and opercles.
 Tubes large, simple, well exposed,

Depth $1\frac{1}{8}$ to 2; head $2\frac{1}{2}$ to $3\frac{1}{5}$, width $2\frac{7}{8}$ to 3. Snout $1\frac{7}{8}$ to $2\frac{1}{8}$ in head from snout tip; eye 4 to $4\frac{2}{5}$, $1\frac{2}{3}$ to $2\frac{1}{5}$ in snout, greater than interorbital in young to $1\frac{1}{5}$ in interorbital with age; lips narrowly marginal; maxillary reaches $\frac{1}{2}$ to $\frac{3}{5}$ to eye, expansion $1\frac{3}{4}$ to $2\frac{1}{3}$ in eye, length $2\frac{7}{8}$ to 3 in head from snout tip; interorbital $4\frac{1}{4}$ to $5\frac{1}{8}$, convexly elevated, with high, trenchant, median ridge. Gill rakers 10 + 24, lanceolate, equal gill filaments or $1\frac{3}{5}$ in eye.

Pores 67 + 50 in lateral line, arch $1\frac{1}{5}$ to $1\frac{1}{4}$ in straight section. Scales very minute, few.

D. VI - I, 18, I, spines very low, obsolete, first 7 rays filamentous and longest to end of caudal; A. I, 16, I, first 3 rays filamentous of which first longest or but little shorter than dorsal; caudal $1\frac{1}{10}$ to $1\frac{1}{5}$ in total head, forked; least depth of caudal peduncle 7 to $8\frac{2}{3}$; pectoral $1\frac{2}{3}$ to $1\frac{3}{4}$ to caudal base, $2\frac{3}{5}$ to $2\frac{2}{3}$ in fish without caudal, falcate; ventral ends in long filament nearly reaching caudal base, $1\frac{7}{8}$ to 2 in total head with age.

Back above eye brown, below silvery white. Five broad, gray, vertical bands,

nearly twice as wide as pale interspaces. Opercle deep olive above. Fins pale, whitish on dorsal and anal basally, dark gray to blackish terminally. Caudal gray. Pectoral pale. Ventral blackish.

Red Sea, East Africa, Delagoa Bay, Madagascar, India, Malaya, East Indies, Philippines, Siam, China, Formosa, North Australia, Western Australia, New South Wales, Melanesia, Polynesia, Hawaii.

1936

8478. D. 5424. Cagayan Island
(S.), S. 11° W., 3.4 miles (lat. 9° 37' 05"
N., 121° 12' 37" E.), Jolo Sea.
In 340 fathoms. March 31, 1909
Length 480 mm.

6712. Cavite market. December
1, 1908. Length 185 mm.

6104. Iloilo market. June 1, 1908.
Length 525 mm.

20604, 20605. Lingayen Gulf
(east of Port Guceet), west coast
of Luzon. May 11, 1909. Length 45 to 48 mm.

One example. Iato River, Luzon,
tidewater. June 16, 1909. Length 36 mm.

Eight examples. Parang, Mindanao.
May 23, 1908. Length 47 to 58 mm.
Some show 7 broad transversely
darker bands on body. The
blackish dorsal, anal and ventral
filaments are longer than in
Walsby's figure.

Malpas, Ceylon Administrat. Rep., 1921, pp. E5, E6, E8. ~~1155~~

Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, June 27, 1925, p. 247

(Kagoshima Bay). Fowler, Bull.

Bishop Mus., no. 22, 1925, p. 33 (Samoa).

Fowler and Ball, Bull. Bishop Mus., no. 26, 1925, p. 16 (Wake Island).

Herre and Montalban, Philippine Journ. Sci., vol. 36, no. 1, May 1928, p. 115, pl. 2, fig. 1

(La Union, Mindoro, Bacm, Tacloban, Bantayan, Cebu, Puerto Princesa, San Juan, Cagayan de Misamis, Zamboanga, Jolo).

Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 230 (Wake Island, New Guinea,

Apia, Society Islands, Samoa).

Tirant, Service Océanogr. Pêch. Indo Chine, 1929, note 6, p. 168 (Phu Yen).

Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 648 (Samoa and Padang).

Schmidt, Trans. Pac. Comm. Acad. Sci. USSR, vol. 1, 1930, p. 60 (Stoman, Riu Kiu).

1937

6816. Kowloon market.
September 19, 1909. Length 170 mm.

p. 480 (Luzon, Camarines Sur, Pasacao).

1_m Ishikawa and Matsura, Prelim.

Cat. Fishes Mus. Tokyo, 1897, p. 54. 1_m

Fowler, Proc. Acad. Nat. Sci. Philadelphia,

1900, p. 526 (Samoa). 1_m Jordan and Snyder,

Annotat. Zool. Japon., vol. 3, 1901, p. 84

(Chagasaki). 1_m Jordan and Evermann,

Proc. U. S. Nat. Mus., vol. 25, 1902, p. 334

(Keerom and Giran, Formosa). 1_m Regan,

Journ. Bombay Nat. Hist. Soc., vol. 16,

no. 2, 1905, p. 331 (Pussat). 1_m Gilchrist

and Thompson, Ann. South African Mus.,

vol. 6, 1908-11, p. 164 (Durban, Natal). 1_m

Jordan and Richardson, Mem. Carnegie

Mus., vol. 4, no. 4, August 28, 1909, p. 192

(Takao). 1_m Snyder, Proc. U. S. Nat. Mus.,

vol. 42, 1912, p. 502 (Okinawa). 1

1_m Pearson, Ceylon Administr. Rep., 1915-18, pp. F8, ~~F11~~ V

Gilchrist and Thompson, Ann. Durban

Mus., vol. 1, pt. 4, 1917, p. 364 (references, except Gilchrist and Thompson 1908). 1_m

U. S. N. M., no. 30531, New Guinea, ¹⁹³⁸
Australian Museum. Length 390 mm.

U. S. N. M., no. 56331. Cavite.
Dr. G. ~~S.~~ S. Lung. Length 170 to 175
mm. Three examples.

U. S. N. M., no. 57553. Japan.
P. L. Jouy. Length 110 mm.?

U. S. N. M., no. 58005. Zamboanga.
Dr. E. A. Mearns. Length 328 mm.
As Aleetes ciliaris.

U. S. N. M., no. 72605. Java.
D. Bryant and W. Palmer. Length 282
mm.

U. S. N. M., no. 76615. Formosa.
Dr. Fred Baker. Length 162 mm.

U. S. N. M., no. 87071. Foochow.
A. Sowerby. Length 69 mm.

U. S. N. M., no. 88018. Benkoelan,
Sumatra. November 1925.
Length 64 mm.

Family Enoplosidae

Body deep, strongly compressed.
Head small. Eye anterior, rather large. Mouth small, oblique, lower jaw well protruded. Preorbital with lower edge denticulate. Pseudobranchial present. Branchiostegals 7. Pyloric appendages 15. Air bladder large. Vertebral 27, of which 17 caudal. Lateral line complete, strongly arched. Scales cycloid. Bases of vertical fins scaly. Dorsals, anals and ventrals elevated or prolonged. Caudal small. Pectoral short. Ventral with spine and 5 rays, longer than pectoral.

1939

A. N. S. P., one example, Delagoa Bay,
Portuguese East Africa. 1922.
H. W. Bell Marley. Length 190 mm.

feebly denticulate. Gill rakers 14 +
21, lanceolate, little greater than
gill filaments or equal eye.

Scales 52 or 53 in lateral line
to caudal base and 6 or 7 more on
latter; 7 or 8 above, 10 to 12 below,
24 or 25 predorsal forward nearly
opposite eye; 4 rows on cheeks to
preopercle ridge. Scales with 1 to 5
short basal radiating striae; 20 to
30 obsolete, irregular apical points,
often vestigial; circuli moderately fine.

D. IX, 16, I, fourth spine $\frac{1}{2}$ in
total head length, first ray $2\frac{2}{3}$ to 3;
A. III, 10, I, third spine $4\frac{1}{4}$ to $4\frac{2}{3}$, first

Genus Hymnis Cuvier

Hymnis Cuvier, Hist. Nat. Poiss.,
vol. 9, p. , 1833. (Type Hymnis
goreensis Cuvier, monotypic.)

Body deep, greatly compressed, angular, edges all trenchant. Head deep, compressed, upper profile rounded. Teeth persistent, in bands in jaws, minute on vomer and palatines. Shoulder girdle with deep cross furrow. Lateral line with long arch, straight shorter section with few weak scutes on side of caudal peduncle. Dorsal and anal lobes without filaments, low. No finlets. Caudal widely forked. Pectoral moderate. Species few, large in size, in tropical seas.

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first spine upward to tip of third membrane. Other vertical fins like body but with pinkish shades.

Paired fins dusky pink.

23930. Limbones Cove, Luzon. February 8, 1908. Length 92 mm. [1129]. Pearly, with dusky shades. Pronounced dark band from snout to near caudal base, at latter superiorly small round black blotch. Oblique narrow brown stripe across front of first dorsal, including all of first spine and terminal half of third membrane. Other fins very pale pink. Dusky bar across base of second dorsal and anal, includes last rays and these and margins of vertical fins more or less dusky.

24045. Malanipa Island, east of Zamboanga. September 8, 1909. Length 60 mm.

^{Hynnus}
Carangoides ajax (Snyder)

1941

Carangoides ajax Snyder, Bull.
U. S. Fish Comm., vol. 22, p. 524,
pl. 8, fig. 15, 1902 (1904) (type
locality, Honolulu). — Jordan
and Evermann, Bull. U. S. Fish
Comm., vol. 23, pt. 1, p. 200, 1903
(1905) (type). — Fowler and Ball,
Bull. Bishop Mus., no. 26, p. 13,
1925 (Laysan). — Fowler, Mem.
Bishop Mus., vol. 10, p. 151 (type;
Honolulu).

Hynnus ajax E. K. Jordan, Proc. U. S.
Nat. Mus., vol. 66, art. 33, p. 17, 1925
(Honolulu).

~~665~~

The species is known by its elongate or more slender body than in most species of the genus, its small scales, scaly preorbital and the soft dorsal and anal subequal with or higher than the spinous fins.

Depth $2\frac{3}{5}$; head $3\frac{3}{5}$. Snout $2\frac{1}{4}$ in head; eye 5, $2\frac{1}{4}$ in snout; maxillary reaches $\frac{2}{5}$ in eye, length $2\frac{1}{2}$ in head; villiform teeth in bands, in jaws, on vomer, palatines and tongue; interorbital $3\frac{1}{2}$ in head, greatly elevated and convex in profile, eye $1\frac{1}{3}$ in supraorbital depth. Lower gill rakers 14, equal maxillary expansion.

Head with small, deeply imbedded scales behind and below eye, otherwise naked. Body mostly naked, except irregular area along lateral line with small, imbedded scales. Lateral line with long arch, straight section $\frac{4}{5}$ of arch; scutes about 32 of which 3 or 4 posterior enlarged until half depth of caudal peduncle, others all small or

obsolete anteriorly.

D. 19, without spinous fin, height of front lobe $1\frac{7}{8}$ in head; A. 16, height of front lobe 2; caudal $1\frac{1}{6}$, lunate, lobes sharply pointed; least depth of caudal peduncle 7; ventral $2\frac{3}{5}$; pectoral $3\frac{1}{8}$ in fish without caudal.

Silvery, darker above, indistinctly marbled with dusky along back. Dorsal with dusky margin. Pectoral base colored on posterior side, upper half brownish black, lower dead white. (Snyder.)

Hawaii. Only known from the type, which I have been unable to locate in the U. S. National Museum. This species is very close to if not synonymous

1944

with Hymnis hopkinsi Jordan,
based on a smaller example
but 660 mm long in the eastern
Pacific near Mazatlan, Mexico.
No structural characters are
apparent for distinction.

U. S. N. M., No. 50874. Honolulu,
Bureau of Fisheries.
Length 965 mm. Type of
Carangoides ajax.

23816, 23817, 23831, 23832. Pandanow
Island, between Cebu and Bohol.

March 25, 1909. Length 73 to 80 mm.

23274. Port Palapay. June 2, 1909.
Length 93 mm.

14598. Port Palapay. June 3, 1909.
Length 105 mm.

1 example. Rasa Island, Mantaguin
Bay, Palawan. April 1, 1909. Length 50 mm.

23188. Romblon. March 26, 1908.
Length 88 mm.

23342 and 23343. Romblon Harbor.
March 25, 1908. Length 72 to 90 mm.

15778 and 15779. Sacol Island, east
of Zamboanga. September 9, 1909. Length
58 to 72 mm.

23207 to 23210. South Lagoon, Tominiao
Island. February 26, 1908. Length 77 to 95 mm.

18783. Tictawan Island, east of
Zamboanga. September 8, 1909. Length 65 mm.

1945

Genus Ulua Jordan and Snyder

Ulua Jordan and Snyder, Mem.
Carnegie Mus., vol. 4, no. 4, p. 39,
April 1, 1908. (Type Caranx richardsoni
~~undulatus~~ Jordan and Snyder,
orthotypic.)

Body greatly compressed, profiles
angular. Head moderate. Eye
small. Lower jaw protrudes.
About 50 to 55 long lower gill
rakers, feather like in shape
and projecting into the mouth on
each side of the tongue. Breast
naked to pectorals and ventrals.
Soft dorsal and anal with long
pointed anterior lobes. Caudal
long. Pectoral long, falcate.
One species.

1217

66070 U.S.N.M. Suva, Fiji.
Albatross Collection 1899-1900. Length
210 mm.

71679 U.S.N.M. Vava'u, Vainua, Riu
Ki. Albatross Collection 1906. Length
125 to 191 mm. 4 examples.

72243 U.S.N.M. Iloilo. R.C. Mac
Gregor. Length 100 mm.

72693 U.S.N.M. Java. Bryant and
Palmer. Length 94 mm.

85983 U.S.N.M. China. A. de C
Towerby. Length 87 mm.

89845 U.S.N.M. Tahiti. J.M. Clements.
Length 127 to 131 mm. 2 examples.

47508 to 47511 A.N.S.P. Philippine
Islands. Commercial Museum of Philadelphia.
Length 120 to 180 mm. Types of Upeneoides
philippinus.

Ulua mandibularis (Macleay)

Caranx mandibularis Macleay,
Proc. Linn. Soc. New South Wales,
vol. 7, p. 356, 1882 (type locality,
New Guinea).

Carangoides mandibularis Fowler
and Bean, Proc. U. S. Nat. Mus.,
vol. ~~75~~ 62, art. 2, ~~p.~~ 1922, p.
20 (Takao; Sumatra material).
— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 79, 1927, p.
272 (Philippines); Mem. Bishop
Mus., vol. 10, p. 151, 1928 (New
Guinea).

~~1247~~

9202, 20545 to 20547. Tilig,
Lubang Island. July 14, 1908. Length
78 to ~~210~~ mm. 16 examples.

1 example. Varadero Bay, Mindoro.
July 23, 1908. Length 77 mm?

21265. Tifu Bay, Boero Island,
Dutch East Indies. December 10, 1909.
Length 87 mm.

22586. Kemar, Celebes. November 13, 1909.
Length 123 mm.

52200 U.S.N.M. Apia, Bureau of
Fisheries. Length 98 to 148 mm. 4 examples.

55988 U.S.N.M. Rio Grande, Mindanao.
Bureau of Fisheries (no. 4226) 1906. Length 270 mm?

56270 U.S.N.M. Mindanao, Bureau
of Fisheries (no. 4267). Length 115 mm?

57922 U.S.N.M. Zamboanga. Dr. E.A.
Mearns. Length 105 mm.

58046 U.S.N.M. Zamboanga. Dr. E.A.
Mearns. Length 200 to 209 mm. 2 examples.

Ulua mandibularis McCulloch,

Mem. Queensland Mus., vol. 8, pt. 1,
p. 75, pl. 14, January 30, 1924

(types from near Port Moresby);

— Fowler, Mem. Bishop Mus.,
vol. 11, no. 6, p. 405, 1934 (New Guinea).

~~McCulloch~~, Austral. Mus. Mem.,
no. 5, pt. 2, p. 190, Sep. 10, 1929

(reference). — Weber and Beaufort,

Fishes Indo Austral. Arch., vol.

6, p. 266, fig. 51, fig. 52 (mouth),

1931 (Balikpapan).

71812 U.S.N.M. Haha, Okinawa,
Riu Kiu. Albatross Collection 1906.

Length 293 mm.

72237 U.S.N.M. Cujin Island.

R. C. Mac Gregor. Length 75 to 125 mm.

72695 U.S.N.M. Juwa. Bryant

and Palmer. Length 245 mm.

84219 U.S.N.M. Cebu. Dr. Fred

Baker. Length 125 mm.

84229 U.S.N.M. Zamboanga.

Dr. Fred Baker. Length 233 mm.

85992 U.S.N.M. China. A. de C

Sowerby. Length 41 to 90 mm. 4 examples,
in very poor preservation.

87059 U.S.N.M. Foochow. A. de C

Sowerby. Length 54 to 90 mm. 2 examples,
in poor preservation.

52883 A.N.S.P. Hong Kong, China. Henry

W. Fowler. 1929. Length 168 mm.

Caranx plumbeus (not Duoy and Gaimard) Jordan and Seale,
Bull. Bur. Fisher., vol. 26, p. 14,
1906 (1907) (Cavite).

Ulua richardsoni Jordan and Snyder, Mem. Carnegie Mus.,
vol. 4, no. 2, p. 39, pl. 53, 1908 ^{April,}
(type locality, Takao, Formosa;
Cavite material). — Wakaya,
Ann. Carnegie Mus., vol. 15, p. 210,
1924 (type and paratype). —
Oshima, Philippine Journ. Sci.,
vol. 26, no. 3, p. 405, March 1925
(Toko, Formosa).

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6029 and 6030. Hinunangan
Beach, Leyte. July 30, 1909. Length
105 to 120 mm.

19389. Iloilo market. March 28, 1908.
Length 80 mm.

21164 to 21166. Jolo market. February 11,
1908. Length 82 to 91 mm.

1 example. Lampinigan Island.
September 11, 1901. Length 48 mm.

19610. Mansalay, Mindoro. June 4,
1908. Length 78 to 85 mm. 6 examples.

11676. Mariveles Bay, Luzon. January
30, 1909. Length 135 mm?

1 example. Nato River, Lagonoy Gulf, Luzon.
June 18, 1909. Length 95 mm.

1 example. D. 5152. Pajumajan Island
(W.), S. 2° W., 2 miles ($5^{\circ} 22' 55''$ N., 120°
 $15' 45''$ E.), Tawi Tawi Group. February
18, 1908. Length 61 mm.

Depth $1\frac{2}{3}$ to $2\frac{1}{2}$; head $2\frac{4}{5}$ to $4\frac{1}{4}$,
width $2\frac{1}{4}$ to $2\frac{4}{5}$. Snout $3\frac{1}{5}$ to $3\frac{4}{5}$ in head from snout tip;
eye $2\frac{3}{4}$ to $6\frac{7}{8}$, $1\frac{1}{8}$ in snout, ^{1 to 2.5}
~~equal~~ ^{1 to 2.5 in} interorbital, without
adipose lids; maxillary reaches $1\frac{3}{5}$
 $\frac{1}{4}$ to $\frac{4}{5}$ in eye, expansion $2\frac{1}{3}$ to $2\frac{3}{4}$ in eye, length 2 to $2\frac{1}{4}$ in
head from snout tip;
interorbital $3\frac{1}{3}$ to 4, convexly
elevated. Gill rakers 20 to 25
+ $4\frac{5}{8}$ to 58, little longer than ^{to 1.5 times}
^{to equal to} gill filaments or $1\frac{1}{4}$ in eye.
Scutes 38 to 40, of which ^{65 + 30 to 33}
last 6 on caudal base. Arch
of lateral line $1\frac{1}{6}$ in straight ^{to 1.5}
^{20 above arch to soft dorsal origin, 34 below.}
section; Breast and chest
naked to pectoral and ventral.
ventral bases ^{to half way back in depressed} Scales with

Iris whitish. No dark spot on opercle. Spinous dorsal dusky, other fins pale, lower ones whitish. Black blotch in pectoral axil.

East Indies, Philippines, Formosa. Alua richardsonii was based on a specimen 450 mm long. Atkinson's figure, as reproduced by Jordan and Snyder, shows the scales as differing from my example, apparently smaller below lateral line than those above it, besides showing their courses too regular. In my largest example the dorsal and anal basal scaly sheaths are made up of small scales, like those on the body, there are about 10

1952

rows of scales on the cheek below
the eye towards the base of the
preopercle and there are far
more postocular scales.

Athinson has also apparently
neglected to indicate the
minute crowded scales covering
most all the fins, more or less
basally, which are also equally
developed on small examples.

1953

9321, ~~9366~~, Cebu market.

August 17, 1909. Length 329 mm.

9366. Cebu market. August
25, 1909. Length 407 mm.

11602. Manila market. March
16, 1908. Length 182 mm.

10717. Manila market. July
10, 1908. Length 163 mm.

A598. Gandra Island. September
20, 1909. Length 850 mm.

Cme 179

Pseudupeneus bilineatus (Valenciennes)

Upeneus bilineatus Valenciennes, Hist. Nat. Poiss., vol. 7, 1831, p. 525. Amboina. $\frac{1}{2}$

Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 411 (compiled). $\frac{1}{2}$ Fowler, Bull.

Bishop Mus., No. 38, 1927, p. 17, fig. 2

(Palmyra Island); Mem. Bishop Mus., vol. 10, 1928, p. 233, fig. 47 (Palmyra example).

Parupeneus bilineatus Bleeker, Nederl.

Tijdschr. Dierk., vol. 2, 1865, p. 281 (name

only); Verhandl. Kon. Akad. Wetensch.

Amsterdam, vol. 15, no. 3, 1875, p. 38

(compiled).

U. S. N. M., no. 30512. New Guinea. Australian Museum. Length 275 mm?

U. S. N. M., no. 76614. Takao. Dr. Fred Baker. Length 212 mm.

A. N. S. P., one example. Philippines. 1923. Rev. Joseph Clemens. Purchased. Length 62 mm.

Genus Atropus Oken

Atropus Oken, Isis, p. 1782, 1817
 (on Les atropus Cuvier, Règne Animal,
 vol. 2, p. 334, 1817, type Brama
atropos Schneider, monotypic).
 (Atropos Leach 1815 in orthoptera not involved.)

Body ovate, strongly compressed.
 Head moderate, upper profile strongly
 convex. Snout short. Eye rather
 small, advanced in head. Maxillary
 reaches below eye, expanded
 behind. Teeth in jaws in villiform
 bands, in lower jaw posteriorly
 reduced to single row. Triangular
 patch on vomer, on palatines and
 middle of tongue in narrow band.
 Scales small, wanting on breast,

15506 and 15508. Caracaran, Batan

Island. June 8, 1907. Length 100 to 103 mm.

[1439.] Head pearl gray, with orange brown shades. Pair of dark streaks across interorbital continuing more or less brokenly into pale line running either side of dorsal base, interlacing more or less across top of opercle. Dusky blotch on opercle not distinct. Round black blotch at lateral line. Chin and throat dusky. First dorsal spines more or less silvery, membranes slightly olivaceous. Second dorsal very pale olive, with 2 irregular darker subbasal bands. Caudal pale, membranes

naked area extending to pectoral base and beyond base of ventrals. Cheek, opercle and preopercle above scaly, rest of head naked. Lateral line strongly arched, becomes straight below fourth or fifth dorsal ray; arch more than $1\frac{1}{2}$ times shorter than straight section which rather weakly armed with shields, last 30 to 35 widest, begin below last fourth of soft dorsal. Between ventral and anal origins deep rectilinear longitudinal groove, contains vent, 2 preanal spines and receives ventrals, which subequal with head. First dorsal and anal ray not filamentous, middle rays in old males prolonged, slightly so in females.

One species.

Atropus atropus (Schneider)

Brama atropus Schneider, Syst.
Ichth. Bloch, p. 98, 1801 (type
locality, Tranquebar).

Brama atropus Schneider, Syst.
Ichth. Bloch, pl. 23, 1801.

Chitus atropus Cuvier, Hist. Nat.
Pois., vol. 9, p. 141, 1833 (Tranquebar;
Malabar).

~~1145~~

Otolithus leuciscus Günther, Ann.
Mag. Nat. Hist., London, series 4, vol. 10,
1872, p. 398. Manila Bay, Philippines.
^m Meyer, An. Soc. Españ. Hist. Nat.
Madrid, vol. 14, 1885, p. 23 (Manila
Bay). ^m Elera, Cat. Fauna Filipinas,
vol. 1, 1895, p. 503 (Luzon, Manila Bay).

Corvina belangerii ~~Belanger~~ (not Valenciennes) Evermann and Seale,
Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 87 (San Fabian).

→ Depth 3 to 3 1/2; head 2 7/8 to 3 1/10,
width 1 7/8 to 2. Snout 3 1/3 to 3 1/2 in
head; eye 3 7/8 to 5 2/5, 1 1/4 to 1 1/2 in
snout, 1 1/3 to 1 1/2 in interorbital;
maxillary reaches 1/2 to 2/5 in eye,
expansion 1 1/8 to 1 3/4 in eye, length

Caranx atropus Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1112, 1849 (1850) (Pinang Sea).

— Günther, Cat. Fish. Brit. Mus., vol. 2, p. 450, 1860 (China; Madras; Pinang Sea; Sand Heads; India; East Indies).

— Day, Fishes of Malabar, p. 88, 1865; Fishes of India, pt. 2, p. 221, 1876.

— Day, Fauna British India, Fishes, vol. 2, p. 162, 1889.

more or less swarthy. Eye light brown
to darker or neutral gray. Pale
gray white median line on snout
above, forks at interorbital with
each branch continued close along
profile of back to caudal peduncle above.
Outside usually deep brown line passes
from snout above, above eye and along
upper side of back above lateral
line. Obscure deep brown lateral band
from snout tip to eye, bounded below
on snout by white line, rather obsolete
or indistinct on side of body. Round
black spot at caudal base medially
size of pupil. Fins all more or less
dull brown, spinous dorsal darkest;

~~Caranx atropus~~

— Elera, Cat. Fauna Filipinas, vol. 1,
p. 511, 1895 (Manila; Luzon).

— Jordan and Seale, Proc. Davenport
Lead. Sci., vol. 10, p. 7, 1905 (Hong Kong).

— Bean and Weed, Proc. U. S. Nat.
Mus., vol. 42, p. 599, 1912 (Batavia).

Caranx atropus Fowler and Bean,
Proc. U. S. Nat. Mus., vol. 62, art. 2,
1922, p. 21 (Sumatran material;
not Takao specimen).

Sciaena aeneus Day, Fishes of India, pt. 2, 1876, p. 187, pl. 45, fig. 5 (Batavia, Bombay, Andamans, Madras); Fauna British India, vol. 2, 1889, p. 119. ¹/_m

Lloyd, Records Indian Mus., vol. 1, 1907, p. 226 (Akyab). ¹/_m Seale, Philippine

Journ. Sci., vol. 9, no. 1, 1914, p. 69 (Hong

Kong). ¹/_m Pearson, Ceylon Administr. Rep., 1915-18, pp. F10-F14. ¹/_m Mulpas, Ceylon Administr. Rep., 1921, p. F5.

Pseudosciaena aeneus Bleeker, Atlas

Ichth. Ind. Néerland., vol. 9, 1877, pl.

(2) 385, fig. 2.

Pseudosciaena anea Jordan and Seale,

Bull. Bureau Fisher., vol. 26, 1906 (1907),

p. 25 (Cavite). ¹/_m Jordan and Richardson,

Bull. Bureau Fisher., vol. 27, 1907 (1908),

p. 261 (Manila). ¹/_m Seale, Philippine Journ. Sci., vol. 5, no. 4, Oct. 1910, p. 280 (Sandakan,

Borneo).

Carangoides atropus Bleeker, Nat.
Tijds. Ned. Indie, vol. 1, p. 366, 1850
(Batavia, Surobaja, Banjuwangi);
vol. 3, p. 53, 1852 (Singapore); Verh.
Batavia. Genoot. (Maakreel.), vol.
24, p. 66, 1852 (Javan localities);
Nat. Tijds. Ned. Indie, vol. 7, p. 312,
1854 (Bantem); vol. 9, p. 394, 1855
(north Pasuruan); vol. 16, p. 407,
1858 (Japara, Java).

1007

Corvina sina (not Cuvier) Schlegel,
Fauna Japonica, Pois., pts. 2-4, 1853,
p. 58, pl. 24, fig. 2.

? Johnius resplendens Hambro and
Jacquinet, Voyage Australasie, Zool.,
vol. 3, 1853, p. 45, pl. 5, fig. 1. no
locality.

Citula atropus Bleeker, Ned. Tijds.
Dierk., vol. 2, p. 174, 1865 (Siam).

— Fowler, Proc. Acad. Nat. Sci.

Philadelphia, vol. 86, 1934, p. 450
(Durban, Natal).

— Jordan and Starks, Ann. Carnegie
Mus., vol. 11, p. 443, 1917 (Ceylon).

Citula atropus ~~Fowler~~ Journ. Bombay
Nat. Hist. Soc., vol. 33, no. 1, p. 110,
September 30, 1928 (~~Bombay~~^{Bombay}).

Fowler, Journ. Acad. Nat. Sci. Philadelphia,
ser. 2, vol. 12, p. 513, pl. 14, lower figure
to left, June 10, 1904 (Padang); Proc.
Acad. Nat. Sci. Philadelphia, vol.
57, p. 499, July 1905 (Baram, Borneo);

Otolithus macrophthalmus Bleeker,
Natuurkund. Tijdschr. Nederl. Indië,
vol. 1, 1850, p. 99. Batavia, Bantam,
Samarang, Pasuruan.

Sciæna macrophthalmus Günther, Cat.
Fishes Brit. Mus., vol. 2, 1860, p. 291
(compiled). ¹/_m Karoli, Termész. Füzetek,
Budapest, vol. 5, 1881, p. 159 (Palaboen).

Corvina macrophthalmus Bleeker, Verslagen
Kon. Akad. Wetensch. Amsterdam, series 2,
vol. 2, 1868, p. 292 (Bintan).

Pseudosciæna macrophthalmus Bleeker,
Verhandel. Kon. Akad. Wetensch.
Amsterdam, vol. 14, series 3, 1874, p. 21
(Singapore, Bintang, Banka, Java,
Celebes).

1962

Atropus atropus Waksija, Ann.

Carnegie Mus., vol. 15, p. 211, pl. 32,

figs. 1-3, 1924 (Formosa). —

Weber and Beaufort, Fishes Indo

Austral. Archip., vol. 6, p. 202, fig.

42, 1931 (Bagan Api Api; Batavia).

2 above, 6 below, 4 predorsal, 2 rows
on cheek. Tubes in lateral line simple,
well exposed, large, each with well
developed basal scale. ^{scales with} 11 to 13 basal
radiating striae; 82 to 114 apical denticles
with 3 to 5 transverse series of basal
elements; ~~and~~ circuli fine.

D. VI - I, 9, I, third spine 2 to $2\frac{1}{8}$ in
total head length, first branched ray
 $1\frac{3}{5}$ to $1\frac{2}{3}$; A. II, 8, I, second spine
 $2\frac{7}{8}$ to $3\frac{3}{5}$, first branched ray $1\frac{7}{8}$ to
 $2\frac{1}{4}$; caudal $1\frac{1}{3}$ to $1\frac{2}{5}$, little emarginate
behind; least depth of caudal peduncle
 $2\frac{2}{5}$ to $2\frac{3}{5}$; pectoral $1\frac{7}{8}$ to $1\frac{7}{8}$;
ventral $1\frac{4}{5}$ to $1\frac{7}{8}$.

Brown generally, head often

1963

Atropus atropus Fowler, Proc.
Acad. Nat. Sci. Philadelphia,
vol. 86, 1934, p. 150 (Bangkok);
Mem. Bishop Mus., vol. 11, no. 6,
1934, p. 405 (note); Proc. Acad.
Nat. Sci. Philadelphia, vol. 87, p.
142, 1935 (Bangkok; Sriracha;
Paknam).

Casert 79

Johnius aneus Bloch

Johnius aneus Bloch, naturgesch.

~~Muséum. Fische, vol 7, 1793, p. 135,~~

~~pl. 357. Malabar. ¹/₂ Schneider, Syst.~~

~~Schth. Bloch, 1801, p. 74 (Tranquebar).~~

Johnius aneus Fowler, Journ. Bombay

Nat. Hist. Soc., vol. 30, no. 4, November

1926, p. ⁷⁷⁷ 8 (Bombay); Proc. Acad. Nat.

Sci. Philadelphia, 1927, p. 285

(Philippines). (Error.)

Labrus aneus Lacépède, Hist. Nat. Poiss.,

vol. 3, 1802, pp. 447, 517 (on Bloch).

Cowina anei Cuvier, Hist. Nat. Poiss.,

vol. 5, 1830, p. 131 (on Bloch).

Otolithus aneus Day, Proc. Zool. Soc.

London, 1867, p. 739 (Madras);

1870, p. 684 (Andamans).

Caranx nigripes Cuvier, Hist. Nat. Poiss., vol. 9, p. 122, 1833 (type locality, Pondicherry).

— Bleeker, Verh. Batavia. Genoot. (Bali), vol. 22, p. 3, 1849 (west coast of Bali); (Madura), vol. 22, p. 4, 1849 (Sumanap).

Hat. Geneesk. Arch. Ned. Indie, vol. 2, p. 517, 1845 (Batavia). — Richardson, Ichth. China and Japan, p. 275, 1846 (China Sea). — Cantor,

Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1111, 1849 (1850) (Pinang Sea; Malay Peninsula; Singapore).

— Jerdon, Madras Journ. Nat. Sci., p. 137, 1851.

— Kner, Reise Novara, Fische, p. 159, 1865 (Java).

1193

To Day it reaches 1525 mm. and enters
tidal waters. My examples are much
more coarsely spotted than in Bleeker's
figure of Pseudosciaena diacanthus.

8 examples. A. N. S. P. Bombay.
Bombay Natural History Society. Length
190 to 280 mm.

1 example. A. N. S. P. Bombay.
Prof. F. Hallberg. Length 308 mm.

Caranx longipes Steindachner,
Sitzs. Ber. Akad. Wiss. Wien,
math.-naturw. Kl., vol. 115, pt. 1,
p. 1404, 1904 (type locality, Upolu,
Samoa). — Fowler, Mem. Bishop
Mus., vol. 10, p. 140, 1928 (reference).

1472

Scales with 12 to 14 basal striae; 42 to 50 apical denticles, with 7 or 8 series of transverse basal elements; circuli very fine.

D. III, 21, I or 23, I, third spine $2\frac{1}{5}$ to $2\frac{2}{5}$ in head, first ray $3\frac{3}{5}$; A. II, 7, I, second spine $2\frac{1}{4}$ to $3\frac{1}{10}$, first ray 2 to $2\frac{1}{2}$; caudal $1\frac{2}{5}$ to $1\frac{1}{2}$, obtuse behind; least depth of caudal peduncle $3\frac{1}{4}$ to $3\frac{7}{8}$; pectoral $1\frac{3}{5}$ to $1\frac{7}{10}$; ventral $1\frac{3}{4}$ to $1\frac{7}{8}$.

Soiled dark gray generally. Four slightly deeper broad bands on back, within each 2 or 3 series of deep dusky blotches size of pupil. Iris yellowish. Dorsals pale, with 5 or 6 blackish blotches. Caudal similar, only blotches as 3 or 4 transverse irregular rows. Ventral neutral dusky. Paired fins same.

India, Ceylon, Burma, Malayan Peninsula, East Indies, Philippines, China. According

1966

Depth $1\frac{4}{5}$ to $1\frac{7}{8}$; head $3\frac{2}{5}$ to $3\frac{1}{2}$, width 2 to $2\frac{1}{8}$. Snout $3\frac{1}{2}$ to 4 in head from snout tip; eye $3\frac{3}{4}$ to 4, greater than snout in young to subequal with age, $1\frac{1}{5}$ to $1\frac{1}{3}$ in interorbital; maxillary reaches $\frac{1}{4}$ to $\frac{1}{3}$ in eye, expansion 2 to $2\frac{1}{4}$ in eye, length 2 to $2\frac{1}{4}$ in head from snout tip; interorbital $3\frac{1}{4}$ to $3\frac{2}{5}$, elevated convexly with strong median keel to spinous dorsal. Gill rakers 12 + 20, lanceolate, $1\frac{1}{8}$ in gill filaments or $1\frac{2}{5}$ to $1\frac{7}{8}$ in eye.

Scales 34 + 36 or 37 in lateral line, arch $1\frac{2}{5}$ to $1\frac{1}{2}$ in straight section; 18 scales above arch of lateral line, 33 below; predorsal

with median naked strip entire extent; breast and chest broadly naked to pectoral and ventral bases. Scales with 45 to 48 + 50 to 63 vertical parallel striae.

D. I, VIII - I, I, 21, I to I, I, 24, I,
 third erect spine $2\frac{1}{2}$ to $2\frac{3}{4}$ in total head length, first branched ray $1\frac{2}{3}$ to $1\frac{3}{4}$; A. II - I, I, 18, I or I, I, 19, I; first branched ray $1\frac{4}{5}$ to $1\frac{7}{8}$; least depth of caudal peduncle 5 to $5\frac{1}{2}$; caudal $3\frac{1}{3}$ to $3\frac{1}{2}$ rest of fish, forked; pectoral $2\frac{2}{3}$, $1\frac{2}{5}$ in head in young, falcate, rays II, 16; ventral $3\frac{2}{5}$ to $3\frac{1}{2}$ in fish without caudal; vent midway, in median abdominal groove, in length of depressed ventral.

1968

Back olive brown, paler to whitish below. Iris gray. Dorsal and caudal pale brown, with spinous fin, soft dorsal edge above and stripe along each ray dotted with gray to dusky. Ventral neutral black. Anal and pectoral whitish.

India, Ceylon, Siam, Malaya, East Indies, Philippines, Formosa, China, Polynesia.

Eleven examples. Balayan Bay, Luzon. January 19, 1908. Length 108 to 138 mm.

4342. D. 5497. Bantiqui Island, N. 64° W., 10 miles (lat. 9° 07' 15" N., long. 124° 59' 30" E.), between Leyte and Mindanao. In 960 fathoms. August 3, 1909. Length 50 mm.

Seven examples. Davao, Mindanao. May 16, 1908. Length 98 to 122 mm.

11601, ~~11909~~. Manila market. March 16, 1908. Length 73 mm.

11909. Manila market. December 12 to 18, 1908. Length 49 mm.

5604. Tacloban market. July 25, 1909. Length 80 mm.

~~11463~~

~~100~~

Spinous dorsal margined with dusky.
Anal and ventral broadly bordered
white below. Length 175 mm. (Bleeker.)

Only known from Sumatra, Malayan
Peninsula and Borneo. Bleeker calls
attention to the scales on the front and
abdomen, not only ciliated, but
their roughness also apparent in
profile, also the shape of the dorsal.

11463. Kowloon, China. September 8, 1908. Length 104 mm.

U.S.N.M., no. 86504. China.
A. de C. Sowerby. Length 50 mm.
D. VIII, I, 21; A. II - I, 18.

entire (at least in figure).

Scales 60 along above lateral line, 30 along below; 11 above (9 above anal origin on figure; 38 predorsal to front of snout tip). Scales cycloid except on front above and abdomen where strongly ciliated; soft vertical fins finely scaled over greater portions basally.

D. X, I, 22 to 25, fourth and fifth spines subequally longest or 3 in head, first ray $3\frac{1}{8}$, fourteenth ray $2\frac{2}{3}$; A. II, 8 or 9, second spine $4\frac{1}{8}$, or $2\frac{2}{5}$ in postocular; caudal $1\frac{3}{4}$ in head, cuneate, ends rather broadly in median point behind; least depth of caudal peduncle $3\frac{3}{5}$; pectoral $1\frac{3}{5}$; ventral $2\frac{1}{3}$.

Above bluish or greenish gray, sides and below silvery. Iris yellowish, above brownish. Opercle with diffuse bluish blotch above. Fins yellow.

1971

U.S.N.M., no. 85876. China.
A. Sowerby. Length 75 to 95 mm.
Twelve examples.

U.S.N.M., no. 86504. China.

A. de C. Sowerby. Length 50 mm.
D. VIII I, 21; A. II I, 18.

A.N.S.P., one example. Bombay.
1925. Prof. F. Hallberg. Purchased.
Length 2157 mm.

One genus, represented in southern Australian and New Zealand seas. Unaberrant percoid family, known chiefly by their ~~poor~~ feeble dentition and fin spines.

Genus Arripis Jenyns

Arripis Jenyns, Zool. Voyage Beagle^{Fishes}, vol. 4, 1840, p. 13. Type Centropistes

georgianus ^{Valenciennes} ~~Richardson~~, monotypic.

Mulloidis, Richardson, Rep. Twelfth Meet. Brit. Assoc. Adv. Sci., 1842 (1843),

p. 16. Type Centropistes (Mulloidis)

rapidissimus (Richardson) Richardson =

Sciæna trutta Schneider, monotypic.

(Precludes Mulloidis Bleeker 1849 in Mullidae)

Genus Caesiomorus Lacépède

Caesiomorus Lacépède, Hist. Nat. Poiss., vol. 3, p. 92, 1802. (Type Caesiomorus bailloni Lacépède, designated by Jordan and Evermann, Genera of Fishes, pt. 1, p. 61, 1917.)

Glaucus Klein, Neuer Schauplatz, vol. 1, p. 829, 1775. Species non-binomial. (Type Scomber glaucus Linnaeus, tautotypic.) (Inadmissible.)

Hypodys Rafinesque, Carrat. nuov. Animal. Sicil., p. 41, 1810. Ctypic. (Type Scomber glaucus Linnaeus.)

Hypodysⁱ Jordan and Evermann, Genera of Fishes, pt. 1, p. 79, 1917. (Type Scomber glaucus Linnaeus.)

Genus Upeneus Cuvier (no 130)

Upeneus Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 448. Type Mullus vittatus Forskäl, designated by Bleeker, Arch. Néerl. Sci. Nat. Harlem, vol. 11, 1876, p. 333.

Upeneus Agassiz, Monocel. Zool. Index, 1846, p. 190. Type Mullus vittatus Forskäl. Corrected orthography.

Upeneoides Bleeker, Verhandl. Batavia. Genootsch. (Percoid.), vol. 22, 1849, pp. 62, 63. Type Mullus vittatus Forskäl, designated by Jordan, Genera of Fishes, pt. 2, 1919, p. 240.

Upeneoides Ogilby, Cat. Fishes New South Wales, 1886, p. 17. Type Mullus vittatus Forskäl. Corrected orthography.

Megalepis Bianconi, Recond. Acad. Sci. Bologna, 1854-57 (1857), p. 100. Type Megalepis alexandrina Bianconi, monotypic.

Baillonus Rafinesque, l'analyse
de la nature, p. 85, 1815. (Type
Caesiomorus bailloni Lacépède,
virtually, as Baillonus Rafinesque
proposed to replace Caesiomorus
Lacépède.)

Campogramma Regan, Ann. Mag.
Nat. Hist., ser. 7, vol. 12, p. 350,
1903. (Type Centronotus vadigo,
not Lacépède, Risso = Scomber
glaucus Linnaeus, monotypic.)

a greatly larger pair of barbels, these reaching the ventral origin. Evermann and Seal mention short barbels and the uniform yellow color of their specimen. At present there is no trace whatever of any blue lines on the head or bands on the soft vertical fins.

56131 U.S.N.M. Zolo. Bureau of Fisheries (4141). Length 187mm. Is Pseudupeneus luteus.

Body well compressed, fusiform. Head moderate, compressed, forehead not prominent. Snout conic. Eye little advanced in head. Mouth cleft moderate, oblique, jaws even. Maxillary reaches below eye. Teeth uniserial, rather strong, conic in jaws, on vomer and palatines. Nostrils small, together, midway in snout. Lower gill rakers 28 to 31. No pseudobranchiae. Branchiostegals 8 or 9. Air vessel bifurcate posteriorly. Pyloric appendages moderate. Scales minute, rounded. Lateral line forms long even curve anteriorly, straight posteriorly. Two dorsals, first with procumbent spine 5 or 6 erect

spines, anal spines as 2 advanced, separated from soft fin. Soft dorsal and anal opposite, similar. Caudal deeply forked. Pectoral short, falcate. Ventral short.

One species in the eastern Atlantic.

Caesiomorus glaucus (Linnaeus)

Scomber glaucus Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 298, 1758

(type locality, Ascension Island)

— Forster, Reise Ost Ind. China, p. 387, 1765 (Ascension Island) — Linnaeus,

Syst. Nat., ed. 12, pt. 1, p. 494, 1766. —

Bonnaterre, Tabl. Ich., p. 141, 1788

(copied). — Gmelin, Syst. Nat., pt. 1, p. 1332, 1789 (copied). — Walbaum, ^{Linnaeus,} Arted. Pisc., vol. 3, p. 212, 1792 (copied). — Schneider, Syst. Ichth. Bloch, p. 33, 1801 (copied).

Lichia glaycox Valenciennes, Hist. Nat. Canaries, Poiss., vol. 2, pt. 2,

p. 56, pl. 3, fig. 1, 1836-44

(Canaries).

Exp. 1000 1000 1000

Depth 3 to $3\frac{1}{5}$; head $3\frac{1}{5}$ to $3\frac{1}{4}$, width $1\frac{3}{4}$ to $1\frac{4}{5}$. Snout $1\frac{7}{8}$ to 2 in head; eye 4 to $5\frac{2}{5}$, $2\frac{1}{4}$ to $2\frac{7}{8}$ in snout, $1\frac{1}{4}$ to $1\frac{7}{8}$ in interorbital; maxillary reaches $\frac{4}{5}$ to $\frac{7}{8}$ in snout, expansion 1 to $1\frac{1}{8}$ in eye, length $2\frac{2}{5}$ to $2\frac{4}{5}$ in head; barbels reaches opposite hind eye edge, length $1\frac{3}{5}$ to $1\frac{4}{5}$ in head; teeth moderately large, conic, short, uniserial in jaws, none on palatine; interorbital 3 to $3\frac{1}{4}$, convexly elevated. Gill rakers 9+30, lanceolate, slightly greater than gill filaments or $1\frac{1}{8}$ in eye.

Scales 28 in lateral line to caudal base and 2 or 3 more on latter; 3 above, 6 or 7 below, 13 predorsal forward not quite to nostrils; 3 rows below eye to lower preopercle edge.

¹⁷⁴
Trachynotus glaucus Regan, Ann.
 Mag. Nat. Hist., ser. 7, vol. 12, p.
 349, Sep. 1903 (reference). —

Barnard, Ann. South African Mus.,
 vol. 21, pt. 2, p. 553, Oct. 1927 (Cape Fear,
 Algoa Bay).

Glaucus glaucus Jordan and Hubbs,
 Ann. Carnegie Mus., vol. 11, nos. 3-4,
 p. 463, Nov. 5, 1917 (Port Said, Egypt).

Caesionorus glaucus Fowler, Proc.

~~Acad. Nat. Sci. Philadelphia, vol.~~
~~15, p. 199, U. S. Nat. Mus., vol. 56, p. 199.~~
 1919.

18907. Tula-lutan Island, east of Zamboanga. September 9, 1909. Length 97 mm.

23277. Tuta Bay, Jolo Island, first anchorage. September 19, 1909. Length 57 to 112 mm. 7 examples.

15541. Rita Island, Ulugan Bay, Palawan Island, December 19, 1908. Length 103 mm.

10411. Varadero Bay, Verde Island, vicinity southern Luzon. July 22, 1908. Length 100 mm.

19050. Varadero Bay. July 23, 1908. Length 93 mm.

6433. West coast of Palani Island, off northern Luzon. November 18, 1908. Length 95 mm.

Scomber calcar Bloch, Naturg.
Duisland. Fische, vol. 7, p. 55,
pl. 336, fig. 2, 1793 (type locality,
Acara, Guinea).

Lichia tetracantha Bowdich,
Excurs. Madeira, p. 237, fig. 49,
1825 (type locality, St. Jago;
Gambia).

Temnodon vadigo (not Lacépède)
Lowe, Proc. Zool. Soc. London,
p. 248, 1850 (Madeira).

1168

(1907), p. 88 (Bacon). ³ L. Kendall
and Goldsborough, Mem. Mus. Comp.
Zool., vol. 26, 1911, p. 293 (Papeete, Tahiti).
Upeneus semifasciatus Macleay, Proc.
Linn. Soc. New South Wales, vol. 8, 1883,
p. 263. Hood Bay, New Guinea.
Parupeneus andrewsii Regan, Proc. Zool.
Soc. London, 1909, pt. 1, p. 403, pl. 65.
Christmas Island, Indian Ocean.

Depth $2\frac{1}{2}$ to $2\frac{3}{4}$; head $3\frac{3}{5}$ to 4,
 width $2\frac{1}{10}$ to $2\frac{1}{5}$. Snout $3\frac{1}{5}$ to
 $3\frac{1}{3}$ in head; eye 4 to $4\frac{3}{4}$, 1 to
 $1\frac{2}{5}$ in snout, $1\frac{1}{8}$ to $1\frac{1}{2}$ in
 interorbital; maxillary reaches
 $\frac{1}{5}$ in eye, expansion $2\frac{2}{5}$ to $2\frac{1}{2}$ in
 eye, length $2\frac{2}{5}$ to $2\frac{3}{4}$; interorbital
 $2\frac{7}{8}$ to 3, convexly elevated.

Gill rakers 14 to 16 + 28 to 31,
 lanceolate, slightly longer than
 gill filaments or equal eye.

Scales 127 in lateral line
 to caudal base and 4 more on
 latter. Patch of scales behind
 maxillary on cheek and another
 behind eye, head otherwise
 naked. Scales with 2 to 6 obsolete
 radiating basal grooves;
 circuli fine, complete.

D. VI - I, 25 or 24, second to fourth ~~rays~~ spines $1\frac{1}{6}$ to $1\frac{7}{8}$ in eye, first branched ray $1\frac{3}{4}$ to $1\frac{4}{5}$ in head; A. II - I, I, 23 to 25, first branched ray $1\frac{3}{4}$ to $1\frac{4}{5}$; least depth of caudal peduncle $3\frac{4}{5}$ to 4; pectoral $1\frac{2}{5}$; ventral $2\frac{1}{8}$ to $2\frac{4}{5}$; caudal $2\frac{3}{4}$ to $2\frac{4}{5}$ in rest of fish.

Back dark brown, sides and below silvery white. Iris silvery white. Soft dorsal and anal with ends of lobes black, fins otherwise pale. Caudal with middle of each lobe dark, blackish terminally.

Eastern Atlantic, from Gibraltar to Brazil and South Africa.

1981

A.N.S.P., ^{nos.} 11130 to 11148. Italy.
Bonaparte Collection (364). Dr.
J. B. Wilson.

Coll 29

1090

Mulloidichthys pflugeri (Steindachner)

Mulloides pflugeri Steindachner, Sonbchr.
Abad. Wiss. Wien, Math.-naturwiss.
Classe, vol. 70, 1901, p. 485, pl. 3, fig. 4.

Honolulu. $\frac{1}{m}$ Jordan and Evermann,
Bull. Bur. Fisher., vol. 23, pt. 1, 1903
(1905), p. 251 (Honolulu). $\frac{1}{m}$ Jordan
and Snyder, Bull. Bur. Fisher., vol.
26, 1906 (1907), p. 214 (Honolulu).

Mulloides flammeus Jordan and
Evermann, Bull. U. S. Fish Comm.,
vol. 22, 1902 (1903), p. 186. Hilo. $\frac{1}{2m}$
Snyder, Bull. U. S. Fish Comm., vol. 22,
1902 (1904), p. 527 (Beako Bay, Hawaii).

$\frac{1}{m}$ Jordan and Evermann, Bull. U. S. Fish
Comm., vol. 23, pt. 1, 1903 (1905), p. 251, fig.
104 (Honolulu, Hilo, Kailua).

Mulloides samoensis (not Günther) Fowler,
New. Bishop Mus., vol. 10, 1928, p. 234 (part).

Genus Hypacanthus Rafinesque

Hypacanthus Rafinesque, Carrat.

Nov. Animal. Sicil., p. 43, 1810.

(Type "Scomber aculeatus Linne" =
Centronotus vadigo Lacépède,
monotypic.)

Hypacanthus Rafinesque, Carrat.

Nov. Animal. Sicil., p. , 1810.

(Type Centronotus vadigo Lacépède.)

Lichia Cuvier, Règne Animal,
vol. 2, p. 321, 1817. (Type Scomber

ania Linnaeus, designated by
Regan, Ann. Mag. Nat. Hist. Ser.
4, vol. 12, p. 348, 1903.)

Porthmeus Valenciennes, Hist.

Nat. Poiss., vol. 9, p. 191, 1833.

(Type Porthmeus argenteus
Valenciennes, monotypic.)

Here and Montalban, Philippine

Journ. Sci., vol. 36, no. 1, May 1928,
p. 118, pl. 6, fig. 2 (Luna, Cabusao,
Zamboanga, Cotabato). ¹/_m Fowler,
Mem. Bishop Mus., vol. 10, 1928, p. 227
(Honolulu, Rarotonga, Guam, Marcus
Island, Moili, Hilo, Samoa, Apia,
Papeete); Proc. Acad. Nat. Sci. Philadelphia,
1929 (1930), p. 648 (Honolulu and Apia).

Pseudupeneus bifasciatus Jenkins,
Bull. U.S. Fish Comm., vol. 22, 1902
(1903), p. 456 (Honolulu). ¹/_m Jordan
and Evermann, Bull. U.S. Fish Comm.,
vol. 23, pt. 1, 1903 (1905), p. 258, fig. 107
(Honolulu, Hilo, Kailua). ¹/_m Seale,
Occas. Papers Bishop Mus., vol. 4, no. 1,
1906, p. 51 (Rarotonga). ¹/_m Jordan and
Seale, Bull. Bur. Fisher., vol. 25, 1905
(1906), p. 274 (Apia). ¹/_m Evermann and
Seale, Bull. Bur. Fisher., vol. 26, 1906

Body elongate, ovate, strongly compressed, deepest at soft dorsal origin. Head rather small, compressed. Snout conic. Eye rather small, little advanced from middle in head, with moderate adipose lids. Mouth large, jaws about even, maxillary reaches below eye, with supplemental bone, well exposed terminally. Jaws with rather wide bands of numerous small, pointed teeth. Vomer and palatines, also tongue, with bands of villiform teeth. Nostrils together, close before eye. Lower gill rakers 8 or 9 developed. Pseudobranchiae present.

Body covered with small pointed scales. Lateral line ascends above pectoral, then descends

1984

in long reversed curve on lower half of side, becomes straight posteriorly. Dorsal with front portion of 7 depressible spines, free with age. Soft dorsal long, low, rays 19 or 20. Anal like soft dorsal, preceded by 2 free spines. Caudal widely forked. Pectorals rather short, falcate.

One species in the Eastern Atlantic.

1985

Hypacanthus amia (Linnaeus)

Scomber amia Linnaeus, Syst. Nat.,
ed. 10, vol. 1, p. 299, 1758 (type
locality, no locality [= Europe]);
ed. 12, pt. 1, p. 495, 1766 (copied). —
Forstål, Descript. Animal., p. 19, 1775
(Malta). — Bonnaterre, Tabl. Ichth.,
p. 143, pl. 59, fig. 231, 1788 (no
locality). — Gmelin, Syst. Nat.
Lin., pt. 1, p. 1336, 1788 (copied).
— Walbaum, Artedi Pisc., vol. 3,
p. 212, 1792 (copied). — Schneider,
Syst. Ichth. Bloch, p. 34, 1801
(Adriatic).

Caranx amia Lacépède, Hist. Nat.
Poiss., vol. 3, pp. 57, 64, 1802 (no
locality).

Com 130

Genus Collichthys Günther

Collichthys Günther, Cat. Fishes Brit.

Mus., vol. 2, 1860, p. 312. Type Sciaena

lucida Richardson, designated by

Jordan and Eigenmann, Rep. U. S. Fish

Comm., pt. 14, 1886 (1889), p. 348.

Hemisciaena Bleeker, Naturk. Tijdschr.

Dierk., vol. 1, 1863, p. 141. Type Collichthys

lucida Günther, monotypic.

Laramichthys Jordan and Starks, Proc.

U. S. Nat. Mus., vol. 28, 1904, p. 204. Type

Laramichthys raibunae Jordan and

Starks, monotypic.

Body slender, elongate, well compressed. Head wide, high, arched above, greatly depressed, sides more or less flattened. Muzzle wide. Snout short, broad. Eye small with age, advanced. Maxillary largely hidden by suborbital sheath. Teeth more or less uniformly small.

Lichia amia Günther, Cat. Fish.

Brit. Mus., vol. 2, p. 476, 1860

(Cape of Good Hope; Algoa Bay) —

Thompson, Marine Biol. Rep. South Africa, vol. 4, p. 104, 1918 (reference).

— Norman, Ann. South African Mag. Nat. Hist., ser. 9, vol. 9, p. 321, 1922

(Natal). — Barnard, Ann. South

African Mus., vol. 21, pt. 1, p. 559,

pl. 23, fig. 2, Oct. 1927 (Table Bay;

False Bay; Agulhas Banks; East

London; Natal).

least depth of caudal peduncle
4'15; pectoral 1'10; ventral 1'2.

Brown, paler below. Iris brassy.
Fins all uniform brownish.

India, Burma, East Indies. I
have but a single example, evidently
the young, as ~~Day states~~ it reaches
1515 mm. Jays

11456 A. N. S. P. East Indies. Dr. H. C.
Wood. Length 205 mm.

1987

Hypacanthus amia Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol.
86, 1934, p. 452 (Durban, Natal).

flexible.
~~free~~ Gill rakers 7+14, lanceolate,
slender, greatly longer than gill
filaments or $7\frac{1}{8}$ of eye.

Scales 84 along above lateral line
to caudal base; enlarged scales 47
in lateral line to caudal base
and 30 more out over caudal fin
medially; 10 scales above lateral line,
8 below, 38 predorsal forward to
snout tip, 16 rows posteriorly downward
across cheek to lower hind edge.
Scales with 10-10 radiating short basal
striae; 30 or 31 slender, short, minute
apical denticles, with 5 to 8 transverse
series of basal elements; circuli very
fine.

D. X, I, 41, I, third spine $2\frac{1}{3}$ in head,
thirty fourth ray $2\frac{3}{4}$, A. II, 7, second
spine 5, second ray $2\frac{3}{4}$; caudal $1\frac{1}{5}$,
cuneate, ends in long median point;

~~Centronotus lynnæ Lacépède, Hist.
Nat. Poiss., vol. 3, pp. 309, 316, 1801
(type locality, Arabia)~~

Centronotus vadiago Lacépède, Hist.
Nat. Poiss., vol. 3, pp. 310, 318, 1802
(type locality, Mediterranean).

Porthmeus argenteus Valenciennes, Hist.
Nat. Poiss., vol. 9, p. 256, pl. 264, 1833
(type locality, Cape of Good Hope).
— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 471, 1860 (copied).

1735

Otolithus pama mason, Burmah
Nat. Resources, 1860, p. 695.

Sciaenoides pama Blyth, Proc. Asiatic
Soc. Bengal, vol. 29, January 1860, p. 139.

Vitang River. ¹/_m Day, Fishes of India,
pt. 2, 1876, p. 193 (Calcutta); Fauna
British India, vol. 2, 1889, p. 124.

Sciaenoides hardwickii Blyth, Proc.
Asiatic Soc. Bengal, ^{vol.} 29, January 1860, p.
139. Vitang River.

Depth $3 \frac{1}{3}$; head $3 \frac{2}{5}$, width $1 \frac{7}{8}$.
Snout $3 \frac{7}{8}$ in head; eye $8 \frac{3}{4}$, 2 in snout,
 $2 \frac{2}{5}$ in interorbital; maxillary reaches
at least eye diameter beyond eye,
expansion (concealed) $1 \frac{1}{3}$ in snout;
length 2 in head; teeth in villiform
bands, with outer row of moderately
large well spaced canines all-around
each jaw; interorbital ~~5~~, broadly
and well convex; preopercle edge ~~not~~

Depth $2\frac{3}{4}$ to $3\frac{7}{8}$; head $3\frac{1}{2}$ to $4\frac{1}{8}$, width $2\frac{1}{8}$ to $2\frac{1}{3}$. Snout $3\frac{1}{8}$ to $3\frac{1}{3}$ in head; eye $4\frac{1}{4}$ to $6\frac{7}{8}$, $1\frac{1}{3}$ to 2 in snout, $1\frac{1}{3}$ to $2\frac{1}{2}$ in interorbital, adipose lids moderate; maxillary nearly reaches opposite hind eye edge to $\frac{1}{4}$ eye diameter beyond eye, expansion $1\frac{3}{4}$ to 2 in eye, length $1\frac{7}{8}$ to $2\frac{1}{10}$ in head from snout tip; interorbital 3 to $3\frac{1}{4}$, convexly elevated. Gill rakers 2 to 5 + 8 to 14, usually 1 or 2 above and 4 or 5 below rudimentary, $1\frac{3}{4}$ in gill filaments, which subequal with eye.

Head naked, except few small scattered scales above opercle, on postocular and behind maxillary. Lateral line

1990

with slight arch in front followed by deep curve below median lateral body axis, rising to horizontal on tail posteriorly.

D. I, VII - I or II, 19, I or 20, I, spines short, strong, low, first branched ray $1\frac{2}{5}$ to $1\frac{7}{8}$ in total head length; A. II - I or II, 19, I or 20, I, first branched ray $1\frac{2}{5}$ to 2; caudal well forked, $1\frac{1}{8}$ to slightly greater than head; least depth of caudal peduncle $3\frac{7}{8}$ to $4\frac{1}{2}$ in total head length; pectoral $1\frac{3}{4}$ to 2; ventral 2 to $2\frac{1}{8}$.

Back dull olive or brown, sides and below silvery white. Iris gray. Soft dorsal dark brown above, paler basally. Caudal brown.

Anal whitish, front lobe deep neutral gray apically, with narrow whitish edge terminally and posteriorly. Pectoral brownish. Ventral dark neutral gray terminally, head edge whitish like base of fin.

South Africa. Also in the Eastern Atlantic and Mediterranean.

A. N. S. P., one example. Durban,
Natal. 1931. Mr. H. W. Bell-Marley.
Length 395 mm.

ray 3; caudal 1, deeply forked, lobes narrowly triangular; least depth of caudal peduncle $3\frac{1}{2}$ to $3\frac{3}{5}$; pectoral $1\frac{4}{5}$ to 2; ventral $1\frac{4}{5}$ to $1\frac{7}{8}$.

Back dull olivaceous, sides and below pale or whitish. Iris whitish.

Iris pale brownish, lower ones whitish.

New South Wales, Victoria, Tasmania, Western and South Australia, New Zealand, Lord Howe, Norfolk and Raoul Islands.

12629 U.S.N.M. Tasmania. British Museum. Length 250 to 251 mm. 2 examples.

39676 U.S.N.M. New Zealand. Otago University. Length 220 mm.

42027 U.S.N.M. Port Jackson, New South Wales. Length 248 mm.

49337 to 49339 A.N.S.P. Melbourne, Victoria. Mrs. Agnes F. Kenyon. Length 285 to 316 mm.

1993

Genus Trachinotus Lacépède

Trachinotus Lacépède, Hist. nat. Poiss., vol. 3, p. 78, 1802. (Type Labrus falcatus Linnaeus, monotypic.)

Trachynotus (not Latreille 1829 or Gray 1829) Günther, Cat. Fish. Brit. Mus., vol. 2, p. 480, 1860. (Type Labrus falcatus Linnaeus.)

Acanthinion Lacépède, Hist. nat. Poiss., vol. 4, pp. 499, 500, 1803. (Type Chaetodon rhomboides Bloch, designated by Jordan and Evermann, Genera of Fishes, pt. 1, p. 64, 1917.)

D. III, 10, I (II, 12 in text) in total head length, third spine $5\frac{1}{5}$, first ray 3; caudal $1\frac{1}{5}$, little emarginate behind; least depth of caudal peduncle $3\frac{3}{4}$; pectoral $1\frac{2}{5}$; ventral $4\frac{1}{10}$.

Above bluish gray, without markings, silvery below. All fins golden. Length 125 mm. (Guichenot.)

Chile.

Doliodon Girard, Proc. Acad. Nat. Sci. Philadelphia, 1858, p. 168. (Type Gasterosteus carolinus Linnaeus, orthotypic.)

Bothrolaemus Holbrook, Ichth. South Carolina, p. 80, 1855. (Type Trachynotus pampanus Valenciennes, monotypic.)

Pampanoa Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1906, p. 116. (Type Chaetodon glaucus Bloch, orthotypic.)

Cope 129

Enneleichthys cyanescens (Guichenot)

Boyaodon cyanescens Guichenot, Hist. fisica
polit. Chil. ^{zoool.} zoool., vol. 2, 1847, p. 209, atlas,
pl. 5, fig. 1. Valparaiso.

Erythrichthys cyanescens Günther, Cat.
Fishes Brit. Mus., vol. 1, 1859, p. 395 (compiled).

— Jordan and Fowler, Rep. U. S. Fish Comm.,
pt. 17, 1887 (1873), p. 528 (compiled).

Depth $4\frac{1}{4}$; head $3\frac{1}{2}$. Snout $3\frac{3}{4}$ in
head from snout tip; eye $3\frac{3}{4}$, equals
snout; maxillary reaches $\frac{1}{8}$ in eye,
expansion 2, length $2\frac{1}{2}$ in head; interorbital
very low; preopercle entire.

Scales small; predorsal scales extend
forward at least to nostrils; 11 or 12
rows on cheeks to preopercle edge; caudal
half scaly basally, fins otherwise
scaleless.

D. VIII I I I I I, I, 9, fourth spine
 $2\frac{1}{3}$ in total head length, first ray $3\frac{1}{4}$;

Body well compressed, moderately elevated, usually with ovate contour. Head moderately compressed, rather small. Snout obtuse or abruptly truncate. Eye moderate or small, median or but slightly advanced in length of head, without adipose lids. Mouth nearly horizontal. Premaxillaries protractile. Maxillary reaches below eye, without supplemental bone. Bands of villiform teeth in jaws, on vomer and palatines, vanishing with age. Preopercle entire with age, in young furnished with spines, which larger at angle of bone. Gill membranes well united. Gill rakers short. Pseudobranchiae

present in young, vanish with age. Scales small, smooth. Lateral line unarmed, little arched, without keel on caudal peduncle. Spinous dorsal of 6 rather low spines, united by membrane in young, free in adult, vanish with age. Second dorsal long, elevated in front. Anal opposite soft dorsal, similar, preceded by 2 stout and nearly free spines, connected with rayed fin, disappear with age.

Large silvery fishes of tropical seas, some species valued highly as food.

Analysis of Species

a. Trachinotus. Body deep, depth more than half its length; color uniform. blochii.

a.⁷ Acanthinion. Body ovate, depth less than half its length; 3 to 5 blackish spots along lateral line. bailloni.

with 1 or 2 transverse series of basal elements and circuli moderately fine.

D. VIII - I, 8, I, abnormally IV - I, 7, I,
variably VI - I, 9, I, second or third
spine $1\frac{4}{5}$ to 2 in total head length,
second ray $1\frac{1}{2}$ to $1\frac{3}{5}$; A. II, 8, I, second
spine 3 to $3\frac{1}{8}$, second ray $1\frac{3}{4}$ to $1\frac{7}{8}$;
caudal ^{$1\frac{2}{5}$ to $1\frac{1}{2}$} little emarginate behind;
least depth of caudal peduncle $2\frac{1}{8}$ to
 $2\frac{1}{6}$; pectoral $1\frac{3}{5}$ to $1\frac{3}{4}$; ventral
 $1\frac{2}{3}$ to $1\frac{7}{8}$.

Pale brown generally, whitish below.
Five longitudinal dark bands,
median at median body axis and
extends over median caudal rays.
Upper and lower dark bands over
median approximate over caudal base.
Iris silvery white, except as crossed
by dark median band. Often dark

Trachinotus blochii Cuvier, Hist. Nat.
 Poiss., vol. 8, p. 425, 1831 (Fort Dauphin,
 Madagascar; Massana, Red Sea). —
Bleeker, Verslag. Kon. Akad. Wet.
 Amsterdam., vol. 12, pp. 52, 74, 1861.

— Fowler, Proc. Acad. Nat. Sci.
 Philadelphia, vol. 86, 1934, p. 450
 (Durban, Natal); Mem. Bishop
 Mus., vol. 11, no. 6, p. 405, 1934
 (reference).

d.² Dorsal spines 10, rays 26 or 27.

~~Cyprichthys~~
Cruel³
name
only

177

Genus Emmelichthys Richardson ^{Cruel 30}

Emmelichthys Richardson, Voy. Erebus
and Terror, Fisher, vol. 2, 1844, p. 47.

Type Emmelichthys nitidus Richardson,
monotypic.

Boxaodon Guichenot, Hist. piscic. polit.

Chile, ^{Gay} Zool., vol. 2, 1847, p. 208. Type

Boxaodon cyanescens Guichenot, monotypic.

Body elongate, slender. Head moderate,
attenuated. Eye moderate, nearly median.
Mouth moderate, very protractile, premaxillary
spines reaching occiput. Teeth obsolete.
Lower pharyngeals separate and like
upper with cardiform teeth. Preopercle
entire. Lower gill rakers 27 or 28.

Pseudobranchiae present. Branchiostegals
6. Scales rather small, 90 to 100, ctenoid.

1998
Trachinotus blochii (Lacépède)

Caesiomorus blochii Lacépède, Hist.
Nat. Poiss., vol. 3, pp. 92, 95, pl. 3,
fig. 2, 1802 (no type locality).

no lateral ridge on caudal peduncle.
Long scaly flap between ventral bases.
Dorsals separated, with several isolated
spines between and all spines feeble.
Dorsal spines 14, rays 9 or 10. Anal
spines 3, rays 10.

Analysis of ~~the~~ species Colton cat,

a.¹ depth $4\frac{1}{4}$; soft anal rays 10. cyaneus.

a.² depth $5\frac{1}{4}$ to $5\frac{7}{8}$; soft anal rays 8. nitidus.

Count 3
name only

Trachinotus blochi Weber and
Beaufort, Fishes Indo Austral.
Archip., vol. 6, p. 286, 1931 (compiled).

234

23422. Tatu Bay, Jolo Island,
first anchorage. September 19, 1909.
Length 98 mm. [1960.] On top of head
and back dusky olive generally. Side
of body translucent pearl gray,
probably darker in life. Narrow
white stripe close before spinous
dorsal. Black stripe begins just
behind point of snout divides between
eyes and continues into broader white
stripe at nape, latter running along
below dorsal base and ends at
caudal base. Pale stripe from snout
tip through eye above nearly to angle
of gill-opening. Similar one across
premaxillary through lower part of

Gasterosteus ovatus (part) Linnaeus,

Syst. Nat., ed. 10, pt. 1, p. 296,
1758 (Asia); ^{ed. 12, pt. 1, p. 490, 1766 (copied).}

— Bonnaterre,
Tabl. Ichth., p. 137, 1788 (copied).

— Gmelin, Syst. Nat. Linn., pt. 1, p.
1325, 1789 (copied). — Walbaum,

Artedi Pisc., vol. 3, p. 448, 1792
(copied).

Family Emmelichthyidae Cuv 121

Body fusiform, elongate, scarcely compressed. Mouth oblique, lower jaw projecting. Teeth absent, small or deciduous. Maxillary rather wide, slips below preorbital. Palate toothless. Nostrils paired. Preopercle entire or with flat thin serrae. Opercle ends in flat point. Premaxillaries greatly protractile, spines reaching occiput. Gill membranes free from isthmus. Gills 4, slit behind fourth. Pseudobranchiae present. Lower pharyngeals with cardiform teeth. Pyloric coeca few. Scales moderate, ciliated. Head scaly, except snout tip. Bases of soft dorsal and anal scaly posteriorly. Lateral line complete. Dorsals separate or continuous, when with free spines between, spines slender and about 15. Soft dorsal low, moderate, naked or with basal scaly sheath. Last rays of soft dorsal and anal extended. Anal with

Trachynotus ovatus Günther, Cat.

Fish. Brit. Mus., vol. 2, p. 481, 1860
(Malay Peninsula; Ceylon; Anceitum; Red Sea;
Amboyna; Moluccas; Pinang; India; China;
Australia).

— Bleeker, Ned. Tijds. Dierk., vol. 1,
p. 240, 1863 (Obi). — Day, Fishes of

Malabar, p. 97, 1865. — Kner, Reise
Novara, Fische, p. 164, 1865 (Java).

— Playfair, Fishes of Zanzibar, p. 64,
1866 (Zanzibar).

— Klunzinger, Verh. zool. bot. Gesell.
Wien, vol. 21, p. 449, 1871 (Red Sea).

— Day, Fishes of India, pt. 2, p. 234, pl.
51 B, fig. 2, 1876. — Bleeker, Rech. Faune
Madagascar, pt. 4, p. 98, 1874 (reference).

— Allegre and Macleay, Proc. Linn. Soc. New
South Wales, vol. 1, p. 329, 1877.

— Castelnau, Proc. Linn. Soc. New South
Wales, vol. 3, p. 383, 1879.

— Klunzinger, Sitzb. Ber. Akad. Wiss. Wien,
math.-naturw. Kl., vol. 80, pt. 1, p. , 1879 (1880).

Soft dorsal white, with rather large anterior subterminal black blotch. White caudal with 3 black blotches on each lobe and several small median black spots. Anal white, with small blackish brown subterminal blotch. Ventral whitish, with 3 or 4 dusky cross bands. Black lateral band present and greatly contrasted.

2003

— Gunther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 44, 1880.

— Macleay, Proc. Linn. Soc. New South Wales, vol. 5, pt. 4, p. 545, 1881 (Port Jackson; all Australian coasts); vol. 7, pt. 3, p. 359, 1882 (New Guinea). — ~~Woods~~ Woods, Fish Fisher. New South Wales, p. 47, 1882.

— Klunzinger, Fische Roth. Meer., vol. 1, p. 104, 1884. — Meyer, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 25, 1885 (North Celebes; Cebu). — Ogilby, Cat. Fish. New South Wales, p. 27, 1886. — Day, Fishes of India, Suppl., p. 790, 1888; Fauna British India, Fishes, vol. 2, p. 179, 1889.

— Sauvage, Hist. Madagascar, Paris, p. 332 (note), 1891; p. 518 (reference).

— Regan, Ann. Natal Mus., pt. 3, p. 246, May 15, 1908 (Kosi Bay; Durban Bay). — Gilchrist and Thompson, Ann. South African Mus., vol. 6, pt. 2, p. 187, 1908 (Natal).

57

from snout through eye to caudal base medially, where ending in round blackish spot little smaller than pupil. Third dark band from infraorbital back to pectoral base and along lower surface of caudal peduncle to caudal base, faint posteriorly. Iris ^{with} silvery white bordering lines to dark median band and some gray above and below. Fins all pale to whitish, soft dorsal and anal each with subbasal grayish longitudinal band.

Only known from the Philippines.

— Gilchrist and Thompson, Ann.
Durban Mus., vol. 1, pt. 4, p. 391, 1917
(reference).

— Barnard, Ann. South African Mus.,
vol. 21, pt. 2, p. 553, Oct. 1927 (Natal,
Delagoa Bay; Chinde).

Amia ~~angustata~~ Smith and Radcliffe

Amia angustata Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 41, 1911, p. 253,
fig. 1. Malanipa Island, east of
Zamboanga.

Trachinotus ovatus Steindachner,
Denks. Akad. Wiss. Wien, math.-naturw.
Kl., vol. , p. 22, 1903

— Waite, Synop. Fish. New South Wales,
p. 41, 1904.

— Jordan and Seale, Bull. Bur. Fisher.,
vol. 25, p. 235, 1906.

— Stead, Edible Fish. New South Wales,
p. 93, 1908.

— Jordan and Richardson, Mem. Carnegie
Mus., vol. 4, no. 4, p. 180, 1909 (Takao).

— Ogilby, Mem. Queensland Mus., vol. 5,
p. 154, pl. 19, 1916 (Queensland; New South
Wales).

scale, at least in anterior part of course. Scales with 10 to 12 basal radiating striae; 67 to 93 apical denticles with 2 or 3 transverse series of basal elements; ~~many~~ circuli fine.

D. VII - I, 9, I, third spine $1\frac{7}{8}$ to $2\frac{1}{10}$ in head, second ray $1\frac{1}{2}$ to $1\frac{2}{3}$; A. II, 8, I, second spine $2\frac{3}{4}$ to 3, first ray $1\frac{2}{3}$ to $1\frac{4}{5}$; caudal $1\frac{1}{2}$ to $1\frac{5}{8}$, slightly emarginate behind; least depth of caudal peduncle $2\frac{1}{5}$; pectoral $1\frac{1}{2}$; ventral $1\frac{3}{5}$ to $1\frac{3}{4}$.

Pale brown generally, nearly whitish. Dark brown band along each side of occiput to base of soft dorsal. Second band from over eye back along upper surface of caudal peduncle to bases of upper caudal rays. Median lateral dark band

— Oshima, Philippine Journ. Sci.,
vol. 26, no. 3, p. 409, March 1905
(Taihoku, Formosa).

— Whitley, Rec. Austral. Mus., vol. 16,
p. 16, 1927.

— McCulloch, Austral. Mus. Mem., no. 5,
Pt. 2, p. 192, Sep. 10, 1929 (reference). —

— Fowler, Mem. Bishop Mus., vol. 10, p.
151, 1928.

Depth 3; head $2\frac{3}{5}$, width 2. Snout $4\frac{2}{5}$ to $4\frac{2}{3}$ in head; eye $2\frac{7}{8}$ to $3\frac{1}{10}$, greater than snout or interorbital; maxillary reaches $\frac{4}{5}$ to eye, expansion $2\frac{2}{5}$ to $2\frac{2}{3}$ in eye, length $1\frac{7}{8}$ to 2 in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital $5\frac{2}{3}$ to 6, level; preopercle ridge entire, edge minutely serrated. Gill rakers 5 + 14, lanceolate, nearly twice length of gill filaments or $2\frac{1}{4}$ in eye.

Scales 25 in lateral line to caudal base and 3 or 4 more on latter, 2 above, 6 below, 4 predorsal, 3 rows on cheeks; head naked, except cheeks and opercles. Tubes of lateral line large, well exposed, each with broad crimped basal

Scomber falcatus (not Linnaeus)

Forskål, Descript. Animal., p.

57, 1775 (Lohaja, Red Sea). — Bonnaterre,

Tabl. Ichth., p. 142, 1788 (copied). — Gmelin,

Syst. Nat. Linn., pt. 1, p. 1334, 1789 (copied).

— Walbaum, Artedi Pisc., vol. 3, p. 218, 1792

(copied). — Schneider, Syst. Ichth. Bloch, p. 31,
1801 (copied).

Trachinotus falcatus Lacépède,

Hist. Nat. Poiss., vol. 3, p. ⁷⁸79, 1802

(Arabia; St. Dauphin, Madagascar).

— Rüppell, Atlas Reise nördl. Afrika,
Fische, p. 88, 1828 (Bay of Massawa).

— Cuvier, Hist. Nat. Poiss., vol. 8, p. 430,

1831 (compiled).

3 small spines and about 9 rays.

Caudal widely forked or emarginate,

Small trim little fishes, brilliant and active, most of deep water in the Indo-Pacific. The known forms follow.

Analysis of ~~the~~ genera 6 pt name only

a.¹ Posterior dorsal spines isolated, 13 in number.

b.¹ Maxillary expansion half of eye.

c.¹ Gill rakers 28 below. Emmelichthys.

c.² Gill rakers 22 below. Dipterygionotus.

b.² Maxillary expansion $2\frac{1}{4}$ to 3 in eye; gill rakers 21 below. Jernicia.

a.² Posterior dorsal spines connected by membrane.

d.¹ Dorsal spines 11 or 12, rays 9 to 11.

e.¹ Dorsal spines 11, hind ones low and last longer than penultimate.

Euthrocles.

e.² Dorsal spines 12, penultimate one

longer but not very low. Plagiogenion.

Can 3 name only

2008

Centronotus ovalis Lacépède, Hist.
Nat. Poiss., vol. 3, pp. 309, 316, 1802.
(type locality, "mers de l'Asie").

~~Centronotus~~

1965

~~56277 U.S.N.M. Iloilo. G.A. Lung.
Stanford University. Length 85 to 95 mm.
2 examples.~~

~~57687 U.S.N.M. Japan. P.L. Jouy.
Length 163 to 215 mm. 3 examples.~~

~~59676 U.S.N.M. Yamagawa.
Dr. H. M. Smith. Length 110 mm.~~

~~59677 U.S.N.M. Yamagawa.
Dr. H. M. Smith. Length 166 mm.~~

~~59678 U.S.N.M. Yamagawa.
Dr. H. M. Smith. Length 113 or 114 mm.
2 examples.~~

~~59679 U.S.N.M. Susaki, Japan.
Dr. H. M. Smith. Length 170 mm.~~

~~59957 U.S.N.M. Hawkesbury River,
New South Wales. D. G. Stead. Length
120 to 133 mm. 2 examples.~~

~~71363 U.S.N.M. Fuyegashima, Japan.
Albatross Collection 1906. Length 26 mm.~~

Trachinotus mookalee Cuvier,

Hist. Nat. Poiss., vol. 8, p. 423,
(type locality, Pondicherry)

1831, ~~(type locality, on Mookalee~~
parah Russell, Fishes of Coromandel, vol.
2, p. 39, pl. 154, 1803 ~~(type locality, Vijayapatam)~~.

— Bleeker, Nat. Geneesk. Arch.
Ned. Indie, vol. 2, p. 516, 1845

(Java); Verh. Batavia. Genoot.
(Midd. Java), vol. 23, p. 8, 1850

— Jerdon, Madras. Journ. Lit. Sci.
1851, p. 136. — Bleeker, Nat. Tijds.

Ned. Indie, vol. 3, p. 409, 1852

(Kampit), p. 445 (Bangka), p. 741
(Boeloeckomba); Verh. Batavia.

Genoot. (makreel.), vol. 24, p. 47,
1852 (Batavia; Samarang;

Surabaya; Pasuruan); vol. 25,
(Bengal.), p. 44, 1853 (reference);

Nat. Tijds. Ned. Indie, vol. 8, p.
168, 1855 (Cocos-Keeling); Act.

1 example. Varadero Bay tide water,
Luzon. July 23, 1908. Length 120 mm.

20398. Sandakan Bay, Borneo.
March 2, 1908. Length 110 mm.

5256. Sandakan Bay. March 21,
1908. Length 107 to 119 mm. 3 examples.

13598. Tanabeke. December 21, 1909.
Length 142 mm.

9749 Kowloon market, China.
October 5, 1908. Length 190 mm.

12614 U.S.N.M. Zanzibar. British
Museum. Length 102 mm.

16250 U.S.N.M. ~~Yapac Bay~~ ~~and~~
~~Palmer~~. Length ~~45~~ mm. Borneo.

Bureau of Fisheries (No. 3634).

Length 136 mm.

51983 U.S.N.M. Negros. Dr. Bashford
Dean. Length 45 to 128 mm. 5 examples.

56275 U.S.N.M. Cavite. G.A. Ling.
Length 76 mm.

Soc. Sci. Ind. Neerl., vol. 1, no.
 5, p. 75, 1856 (Amboina); Nat.
 Tijds. Ned. Indie, vol. 13, p. 284,
 1857 (Tjerutjief, Biliton);
 Act. Soc. Sci. Ind. Neerl., vol.
 5, no. 7, p. 2, 1858-59 (Sinkaw-
 wang, Borneo); Nat. Tijds.
 Ned. Indie, vol. 20, p. 142, 1859-
 60 (Cocos-~~Keeling~~ Keeling), pp.
 237, (Singapore); ~~vol.~~ vol. 21, p.
 449
 138, 1860 (Muntok, Banka).

~~1712~~

7293. Mansalay, Mindoro. June 4,
1908. Length ^{89 to} 123 mm. 2 examples.

^{172001,}
2010 and 22011. Mariveles Bay,
Manila Bay. January 27, 1909. Length 81
to 103 mm.

17134. Murcielagos Bay, Mindanao.
August 20, 1909. Length 114 mm.

20660. North end of Endeavor Strait,
north-west coast Palawan. December 22,
1908. Length 80 mm.

17264, 17265, 19307 to 19309, 19311. Pandanon
Island. March 24, 1909. Length 53 to 114 mm.

19479. Port Calton, Pangauran River,
Busuanga Island. December 16, 1908.
Length 102 mm.

1 example. Port San Vicente, Luzon.
November 18, 1908. Length 100 mm.

1 example. River at Pasacao, Luzon.
March 9, 1909. Length 74 mm.

2011

Trachinotus mookalee Bleeker,
Act. Soc. Sci. Ind. Neerl., vol. 2,
no. 7, p. 5, 1857 (Amboina).

Trachynotus mookalee Cantor,
Journ. Asiatic Soc. Bengal, vol. 18, pt.
2, p. 1102, 1849 (1850) (Pinang Sea)
(error).

6477. Beach at village near Chase
Head, Endeavor Strait, Palawan.

December 22, 1908. Length 90 mm.

20734. Balayan Bay, Taal. January
19, 1908. Length 54 mm.

12450. Bugsuk Island, Balabac.

January 5, 1909. Length 190 mm.

22587. Caiholo River, Ulugan Bay,
Palawan. December 29, 1908. Length 80 mm.

6283. Candaramon Island, Balabac.

January 4, 1909. Length 225 mm.

17472 [1325], 22389. Canmahala Bay,

Ragay Gulf, Luzon. March 11, 1909.

Length 95 to 190 mm. ♂ (1325.) Top of

head and back with olive shades
speckled with reddish brown;
similar color beneath lateral line
but much paler, spots larger and
more distinct; median lateral

2012

Trachinotus raffinis Cuvier,
Hist. Nat. Poiss., vol. 8, p. 428, 1831
(type locality, Malabar coast).

Trachinotus falcifer^g Cuvier,
Hist. Nat. Poiss., vol. 8, p. 428, 1831
(type locality, Malabar coast).

Trachinotus drepanis Cuvier,
Hist. Nat. Poiss., vol. 8, p. 429, 1831
(type locality, Seychelles).

Trachinotus auratus Richardson,
Ichth. China and Japan, p. 270, 1846
(type locality, China, Macao).

125
obscure dark bands, frequently broken
as spots.

Suez, Aden, Arabia, Maldives,
Zanzibar, Natal, Ceylon, Andamans,
Singapore, East Indies, Philippines,
New Guinea Territory, Queensland, near South Walpole,
North ~~Western Territory~~ Indo China, China,
Formosa, Japan, Riu Kiu. A very
handsome and abundant species,
easily known by its swarthy, speckled
or mottled coloration. The young are
quite like the adults, only with few
dark blotches on the fins which break
into the numerous bands with age.
Some small examples paler, less
mottled, paired fins nearly uniform,
but lower caudal lobe with seven
blackish blotches and upper lobe with
but 4 or 5 of which outer well spaced.
In the very young white spinous
dorsal has large black apical blotch
and 1 or 2 horizontal dusky bands.

? Lichia glauca (not Linnaeus) Goyorza,
Anal. Soc. Espan. Hist. Nat. Madrid,
vol. 17, p. 291, 1888 (Manila Bay).

233
dusky.

Red Sea, East Indies, Philippines,
China, Japan, Queensland, Polynesia.
Described above from the type of
Amia wilsoni.

47505 A. N. S. P. Philippines. Length
71 mm. Type of Amia wilsoni.

2014

Depth $1\frac{3}{5}$ to 2; head 3 to $3\frac{1}{2}$, width $1\frac{7}{8}$ to 2. Snout $3\frac{1}{4}$ to $3\frac{2}{5}$ in head; eye 3 to $4\frac{3}{4}$, 1 to $1\frac{1}{3}$ in snout, $1\frac{2}{5}$ to $1\frac{3}{5}$ in interorbital, maxillary reaches $\frac{1}{8}$ to $\frac{1}{5}$ in eye, expansion $2\frac{1}{8}$ to $3\frac{1}{4}$, length $2\frac{3}{4}$ to 3 in head; lips thick, fleshy; interorbital $1\frac{1}{2}$ to 3, convexly elevated. Gill rakers 8 + 16, of which 5 lower rudimentary and others lanceolate, $\frac{1}{2}$ of gill filaments, which nearly equal eye.

Scales minute. Lateral line little waved, slightly arched anteriorly.

D. I, VIII, 19, I to 23, I, third erect spine 3 to $7\frac{1}{4}$ in head, with age lobe nearly reaching

caudal tip; A. II - I, 18, I to I, 22, I,
 first branched ray $1\frac{2}{5}$ in head,
 with age reaches middle of
 caudal; least depth of
 caudal peduncle $3\frac{1}{2}$ to 4;
 pectoral $1\frac{1}{4}$ to $1\frac{2}{7}$, rays II, 16;
 ventral rays I, 5, fin $2\frac{1}{8}$ to
 $2\frac{1}{4}$ in head; caudal $3\frac{7}{8}$ in
 rest of fish, widely forked,
 slender lobes sharply pointed.

Back drab to neutral
 brown, sides paler and below
 silvery white. General appearance
 usually bright silvery white.
 Iris gray. Spinous dorsal
 membranes transparent, dark
 on fin spines. Soft dorsal with
 front lobe black, rest of fin
 pale brown. Caudal light

brown. Pectoral brownish,
other fins whitish.

Red Sea, Zanzibar, Delagoa Bay,
Natal, Seychelles, Madagascar,
India, Ceylon, Andamans, Malaya,
East Indies, Philippines, China,
Formosa, Japan, North Australia,
Queensland, New South Wales,
Melanesia, Polynesia.

Four examples. Abuyog, Leyte.
July 26, 1909. Length 75 to 95 mm.

One example. Atulayan Bay,
Luzon. June 17, 1909. Length 98 mm.

8421. Cebu market. March 31,
1909. Length 635 mm.

Three examples. Jolo (under
blue medusa). September 8, 1908.
Length 22 to 38 mm.

8605 to 8607. Matnog Bay.
May 31, 1909. Length 225 to 295 mm.

Eight examples. North end of
Endeavour Strait, north west coast
of Palawan. December 22, 1908.
Length 50 to 59 mm.

21798 to 21800, 21810. Pandanon
Island. March 24, 1909. Length 58
to 116 mm.

Seven examples. Pandanon Island.
March 23, 1909. Length 17 to 22 mm.

1215

D. VII — I, 8, I, first spine $1\frac{1}{3}$
in head, first branched ray $2\frac{1}{6}$;
A. I, 6, I, first branched ray 2;
caudal $1\frac{1}{8}$, deeply forked, lower
lober longer; least depth of caudal
peduncle $2\frac{2}{3}$; pectoral $1\frac{1}{3}$;
ventral $1\frac{2}{5}$.

Largely dull brownish, back
with slight olive tint and below
paler. From upper postocular edge
whitish band extends back to
suprascapula and horizontally
along upper side, crosses lateral
line and ends below soft dorsal.
Second parallel similar band from
lower eye edge back above pectoral
base and ends at middle of front
of caudal peduncle. Also traces
indistinctly of third parallel band
from lower pectoral base back until

20778. Powatiki Harbor, Makyan
Island. November 28, 1909. Length
88 mm.

Depth $3\frac{1}{8}$; head $3\frac{1}{3}$, width 2.

Snout $2\frac{1}{3}$ in head; eye $4\frac{1}{8}$, $1\frac{2}{3}$ in snout, $1\frac{1}{5}$ in interorbital; maxillary reaches eye, expansion $1\frac{3}{4}$ in eye, length $1\frac{1}{3}$ in head; teeth small, simple, conic, uniform, 2 rows above anteriorly and 5 below anteriorly, none on palate or tongue; interorbital $3\frac{1}{2}$, broadly convex. Gill rakers $8 + 22$, lanceolate, $1\frac{3}{5}$ in gill filaments or $2\frac{1}{2}$ in eye.

Scales 36 in lateral line to caudal base and 3 more on latter; 3 above, 6 below, 14? predorsal; 3 rows on cheeks. Scales with 4 to 6 basal radiating striae; 155 to 160 apical denticles, with 10 to 12 transverse series of basal elements; circuli very fine.

2019

U. S. N. M., no. 52312. Apia,
Samoa. Bureau of Fisheries.
Length 250 mm.

U. S. N. M., no. 66063. Vavau,
Tonga Islands. Albatross Collection.
Length 128 mm.

U. S. N. M., no. 66067. Vavau,
Albatross Collection. Length 225 mm.

A. N. S. P., one example. Durban,
 Natal. 1931. H. W. Bell Marley.
Length 228 mm.

A. N. S. P., one example. Durban.
1932. H. W. Bell Marley. Length 407
mm.

1957

chiefly on scale structure. He describes the scales as having "instead of the usual fan of diverging striae on their basal portions, a triangular space filled up by a number of extremely fine, closely approximating striae, parallel to each other, and also parallel to the basal margin, which is cut quite square and entire." This led him to form the name from, a without and pittis. flabellum or fan.

Analysis of species.

<u>a.</u> ¹ dorsal rays 13 or 14.	<u>georgianus</u> .
<u>a.</u> ² dorsal rays 15 to 17.	<u>trutta</u> .

2020

Trachinotus bailloni (Lacépède)

Caesiomorus bailloni Lacépède,
Hist. nat. Poiss., vol. 3, pp. 92, 93,
pl. 3, fig. 1, 1802 (no type locality).

Trachinotus bailloni Cuvier, Hist.
nat. Poiss., vol. 8, p. 431, 1831
(Fort Dauphin, Madagascar).

— Bleeker, nat. Tijds. Ned. Indie,
vol. 3, p. 237, 1852 (Wahai), p. 741
(Kema, Celebes); Verh. Batavia.
Genoot. (makreel.), vol. 24, p. 46,
1852 (Batavia); nat. Tijds. Ned.
Indie, vol. 6, p. 457, 1854 (Amboina);
vol. 7, p. 361, 1854 (Batjan); vol. 9,
p. 492, 1855 (Batjan); vol. 10, p.
469, 1856 (Saporoea); ~~Act.~~ Act. Soc.
Sci. Ind. Neerl., vol. 1, no. 3, p. 31,

1257
eye in width, along each side of snout
to eye, then over postocular until
finally crossing lateral line below soft
dorsal and finally various and
reaching median base of caudal. Below
dark lateral band ground color
whitish, but on sides of body mottled
or speckled with dusky. Iris brown
or slate gray, narrow yellow circle
around pupil. Barbels whitish.
Spinous dorsal gray, darker terminally
and blotched with whitish. Soft
dorsal pale brown with 3 or 4 dark
irregular longitudinal bands. Caudal
pale brownish to whitish on inner edges,
each lobe with 9 oblique dusky to
blackish bands, those of lower lobe
mostly broader and more blackish,
also not reaching lower fin edge.
Other fins all dull brownish with

1856 (Manado); (no. 5, vol. 1) p. 6,
 1856 (Amboina); vol. 2, no. 7, p.
 5, 1857 (Amboina); hat. Tijds.
 ned. Indie, vol. 12, p. 214, 1857
 (Nias); vol. 13, p. 479, 1857 (Prigi,
 Java); Act. Soc. Sci. Ind.
 Neerl., vol. 5, no. 8, p. 2, 1858-59
 (Tobariri, Celebes); hat. Tijds.
 ned. Indie, vol. 17, p. 142, 1858-59
 (Boleling, Bali); vol. 20, p. 206,
 1859-60 (Boleling); hat. Tijds.
 ned. Indie, vol. 22, p. 65, 1860
 (Benculen); Act. Soc. Sci. Ind.
 Neerl. (Sumatra?), vol. 8, p. 2, 1860
 (Benculen); ~~(Sumatra), vol. 8, p. 65,~~
~~1861~~ (Celebes), vol. 8,
 p. 38, 1861 (Celebes); hat.
~~Tijds. ned. Indie, vol. 22, p. 65, 1860~~
 Verslag. Kon. Akad. Wet. Amsterdam,
 vol. 12, p. 74, 1861 (Pinang).

1550

caudal base and 2 more on latter;
2 or 3 above, 6 below, 13 predorsal
scales forward nearly to snout tip;
3 rows of scales on cheek below eye.
Tubes of lateral line with about 5 to
8 tubules. Scales with 5 or 6 basal
radiating striae; 33 (young) to 185
apical denticles, with 2 to 13 transverse
series of basal elements; circuli very
fine.

D. VII or VIII — I, 7, I, third spine $1\frac{1}{2}$ to
 $1\frac{2}{3}$ in head, first branched ray $1\frac{4}{5}$ to
 $2\frac{1}{8}$; A. I, 6, I, first branched ray $1\frac{3}{4}$ to
 $1\frac{4}{5}$; caudal 1 to $1\frac{1}{4}$, deeply forked,
with slender pointed lobes; least depth
of caudal peduncle $2\frac{3}{4}$ to $3\frac{1}{2}$; pectoral
 $1\frac{1}{2}$ to $1\frac{3}{5}$; ventral $1\frac{2}{5}$ to $1\frac{1}{2}$.

Back dark umber brown, all more
or less mottled or speckled with
blackish. Blackish brown band less than

— ~~Stein~~ Waite, Mem. Austral. Mus.,
no. 3, p. 190, 1897 (Funafuti). —

Steindachner, Denks. Akad. Wiss.
Wien, math.-naturw. Kl., vol. ,
p. 22, 1902.

— Waite, Rec. Austral. Mus., vol. 5,
p. 25, 1903 (); vol. 6,

p. 200, 1904. (Zamboanga).
— Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 66, 1906 (1907),

— Jordan and Starks, Proc. U. S.
Nat. Mus., vol. 32, 1907, p. 495

— Stead, Fishes of Australia, p. 264, 1906.

— Jordan and Richardson, Mem.
~~Carnegie Mus., vol. 4, no. 4, p. 180,
1909~~

— Kendall and Goldsborough, Mem.
Mus. Comp. Zool., vol. 26, p. 271, pl.
2, fig. 1, 1911 (Funafuti).

1355

Depth 4 to $4\frac{2}{3}$; head $2\frac{2}{3}$ to $3\frac{3}{4}$, width $1\frac{2}{3}$ to $2\frac{1}{4}$. Snout $2\frac{2}{5}$ to $2\frac{2}{3}$ in head; eye $3\frac{1}{2}$ to $4\frac{1}{2}$, $1\frac{1}{4}$ to $1\frac{4}{5}$ in snout, greater than interorbital in young to $1\frac{2}{5}$ with age; maxillary reaches eye or $\frac{1}{8}$ in eye, expansion $1\frac{3}{4}$ to in eye, length $2\frac{1}{8}$ to $2\frac{3}{4}$ in head; barbels reach to hind preopercle edge in young, scarcely beyond eye with age, length $1\frac{1}{2}$ to $1\frac{3}{5}$ in head; teeth in villiform bands in jaws with about 5 irregular series above and 7 or 8 below, also band on vomer and each palatine; interorbital $3\frac{1}{2}$ to $3\frac{2}{3}$, broadly convex. Gill rakers 4 to 7 + 16 to 18, lanceolate, equal gill filaments or $1\frac{1}{2}$ in eye; 3 or 4 above and 5 or 6 below rudimentary tubercles.

Scales 30 to 32 in lateral line to

— Snyder, Proc. U. S. Nat. Mus.,
 vol. 42, p. 496, 1912 (Rui Kui record).
 — McCulloch, Rec. Western Austral.
 Mus., vol. 7, no. 3, p. 223, 1914
 (Murray Island). — Ogilby, Mem.
 Queensland Mus., vol. 5, p. 149, pl.
 18, 1916 (Murray Island).

— Nichols, Amer. Mus. Novit. h.
 Y., no. 94, p. 3, October 19, 1923
 (Mangareva). — Oshima, Philippine
 Journ. Sci., vol. 26, no. 3, p. 407,
 March 1925 (copied).

Davao, Caldera Bay, Zamboanga,
 Basilan Island; Hong Kong; Sandakan).
 $\frac{1}{m}$ Fowler, Mem. Bishop Mus., vol. 10, 1928,
 p. 227 (on Day). $\frac{1}{m}$ Tirant, Service
 Océanogr. Pêch. Indo Chine, ^{6^e note,} 1929, ~~note~~
 p. 168 (Phu Yen). $\frac{1}{m}$ Fowler, Proc. Acad.
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^{corr}
¹⁷⁹ Upeneoides kniskiana (Döderlein)
Stendachner and Döderlein, Denkschr. Akad. Wiss.
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 Kagoshima. (name in synonymy.)

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1927, p. 380 (Lake Timsah, Suez Canal).
 $\frac{1}{m}$ McCulloch, Fishes New South Wales,
ed. 2, 1927, p. 60, pl. 45, fig. 214a. $\frac{1}{m}$
Fowler and Bean, Proc. U.S. Nat. Mus.,
vol. 71, 1927, p. 7 (Bankoelen, Sumatra).
 $\frac{1}{m}$ Herre and Montalban, Philippine
Journ. Sci., vol. 36, no. 1, May 1928, p. 99,
pl. 2, fig. 1 (Luna and Camp Wallace, Ilaminos,
Olongapo, Malabou, Puerto Galera, Calapan,
Bacon, Legaspi, Vicuayan, Concepcion,
Culion Island, Catbalogan, Borongan,
New Washington, Bantayan, Cuyo, Jordan,
Cebu, Puerto Princesa, Palawan, Aguilaran,
Dumaguete, Cagayan de Misamis, Balabac,

Trachinotus bailloni Jordan and
Richardson, Mem. Carnegie Mus.,
 vol. 4, no. 4, p. 180, Aug. 28, 1909
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 (Sabang; Ceram).

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~~$2\frac{3}{4}$, second ray $2\frac{1}{8}$; caudal $1\frac{1}{3}$, emarginate; least depth of caudal peduncle $2\frac{1}{4}$; pectoral $1\frac{3}{5}$; ventral $1\frac{2}{3}$.~~

Pale brown, slightly paler below. Narrow median blackish line from interorbital to spinous dorsal, bordering base of each dorsal and then as single median line on postdorsal. Each side of snout above narrow line extends up over interorbital close above lateral line, fades out on caudal peduncle above. Blackish band from snout tip to eye and median on side to caudal base. Conspicuous blackish spot on caudal base just above lateral line about half size of pupil. Fourth dark line from lower eye edge to lower surface of caudal peduncle. Fins pale, except dark shade on spinous dorsal terminally. Upper and lower caudal edges slightly

Trachynotus bailloni Günther,
Cat. Fish. Brit. Mus., vol. 2, p. 484,
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vol. 16, p. 360, 1864 (Saparoua);
het Ned. Tijds. Dierk., vol. 2, pp.

99, 174, 191, 289 (Siam) (aden; Zanzibar);
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vol. 25, 1902, p. 335 (Keerun, Giran,
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p. 150 (Singapore). $\frac{1}{m}$ Johnstone, Rep.
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pt. 2, 1904, p. 220 (Arripu and south of
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fathoms). $\frac{1}{m}$ Jordan and Richardson,
Bull. Bur. Fisher., vol. 27, 1907 (1908),
p. 260 (Cuyo). $\frac{1}{m}$ Seale, Philippine Journ.
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Borneo). $\frac{1}{m}$ Snyder, Proc. U. S. Nat. Mus.,
vol. 42, 1912, p. 416 (Kagoshima and Kagoshima).
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Ost Asien, 1876, p. 387 (Amboina River).
+ Klunzinger, Sitz. Ber. Akad. Wiss. Wien,
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2, p. 32, pl. 142, 1803, type locality,
Vizagapatam).

Trachinotus botta Ogilby, Mem.
Queensland Mus., vol. 3, p. 93, pl.
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Bay). — Fowler, Mem. Bishop
Mus., vol. 10, p. 152, 1928 (compiled).

Caesiomorus quadripunctatus
Rüppell, Atlas Reise nordl. Afrika,
Fische, p. 90, pl. 24, fig. 1, 1828 (type
locality).

Trachinotus quadripunctatus
Cuvier, Hist. Nat. Poiss., vol. 8, p.
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3

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vol. 26, 1906 (1907), p. 88 (Bacon). $\frac{1}{21}$

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Pearson, Ceylon Administr. Rep., 1912-13, p. 56.
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North Celebes, Abi major, between Guebe

and Fan). $\frac{1}{21}$ Beaufort, Bijdr. Dierk.

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New Guinea). $\frac{1}{21}$ Barnard, Ann. South

African Mus., vol. 21, pt. 2, 1927, p. 583

(Natal coast).

Trachynotus quadripunctatus
Wakiyu, Ann. Carnegie Mus., vol. 15,
p. 220, pl. 34, fig. 2, 1924 (type
~~locality~~, Kii; Ryukyu, Formosa).

~~about 6~~ bright orange stripes, first
 3 narrow; first along median line
 of occiput, continued along dorsal
 base but anterior end with
 continuation arising some distance
 before dorsal; second begins behind
 snout tip, passes above eye and
 backward to caudal base; third
 crosses eye above and ends under
 hind edge of first dorsal; fourth
 begins on snout, passes through
 middle of eye, thence backward,
 ending in scarlet spot at caudal
 base; fifth crosses premaxillary
 under eye and backward along
 lower edge of caudal peduncle to

2031

Trachinotus russellii Cuvier, Hist. Nat.
Poiss., vol. 8, p. 436, 1831 (type locality,
Pondicherry).

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p. 199, 1904 (). — McCulloch, Rec. Western Austral. Mus.,
vol. 1, p. 223, 1914 (Bernier Island).

Trachinotus russellii Jerdon,
Madras Journ. Lit. Sci., 1851, p. 136.
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(Bengal), vol. 25, p. 44, 1853 (reference).

Trachinotus russellii Day, Fishes
of India, pt. 2, p. 233, pl. 51, fig. 3,
1876; Fauna British India, Fishes,
vol. 2, p. 178, fig. 61, 1889. —
Barnard, Ann. South African
Mus., vol. 21, pt. 2, p. 554, Oct. 1927
(Natal).

Upeneus tragula Richardson
Upeneus tragula Richardson, Ichth. China
Japan, 1846, p. 220. Canton. $\frac{1}{m}$

Bleeker, Verhandl. Kon. Akad. Wetensch.
Amsterdam, vol. 15, no. 3, 1875, p. 11 (Java,
Quizend Islands, Bawean, Madura, Mas,
Singapore, Celebes, Sangir, Ternate,
Halmaheira, Abi, Saparoua, Batjan,
Ceram, Amboina, Goram, Banda,
Philippines); Atlas Ichth. Ind. Néerland.,
vol. 9, 1877, pl. (2) 392, fig. 2. $\frac{1}{m}$ Macleay,
Proc. Linn. Soc. New South Wales, vol. 7,
(1884),
1883, p. 264 (Wood Bay, New Guinea). $\frac{1}{m}$
Jordan and Seale, Proc. U. S. Nat. Mus.,
vol. 28, 1905, p. 782 (Negros). $\frac{1}{m}$ Stead,
Fishes of Australia, 1906, p. 131, fig. 48
(New South Wales). $\frac{1}{m}$ Jordan and
Seale, Bull. Bur. Fisher., vol. 26, 1906

Trachinotus russelli Gilby, Proc. Linn. Soc. New South Wales, vol. 14, p. 1028, 1890 (); Edible Fish. New South Wales, p. 89, 1893.
 — Tosh, Marine Zool. Rep. Queensland, p. 4, pl., 1903.

Trachinotus russelli Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 235, 1906 (reference). — Stead, Edible Fish. New South Wales, p. 92, pl. 42, 1906. — Jordan and Richardson, Mem. Carnegie Mus., vol. 4, no. 4, p. 180, ^{Aug. 28,} 1909, (Taka). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 6, p. 289, 1931 (compiled).
Trachinotus russelli Oshima, Philippine Journ. Sci., vol. 26, no. 3, p. 408, March 1925 (copied).

~~1317~~

55100 U.S.N.M. Honolulu.
Albatross Collection. Length 250 mm.

Trachinotus oblongus Cuvier, Hist.
Nat. Poiss., vol. 8, p. 437, 1831 (type
locality, Java; Pandicherry). —
Bleeker, Nat. Geneesk. Arch. Ned.
Ind., vol. 2, p. 516, 1845 (Batavia);
Verh. Batavia. Genoot. (Bengal.),
vol. 25, p. 44, 1853 (reference). —
Kendall and Goldsborough, Mem.
Mus. Comp. Zool., vol. 26, p. 272, pl. 1,
1911 (Nukuhiva, Marquesas Islands).
— Fowler, Mem. Bishop Mus.,
vol. 10, p. 152, 1928 (Nukuhiva).

Trachynotus oblongus Günther, Cat.
Fish. Brit. Mus., vol. 2, p. 484, 1860
(Sumatra).
— Boulenger, Proc. Zool. Soc.
London, 1887, p. 661.

Spinous dorsal whitish, with three faint brownish longitudinal bands. Caudal whitish, with six slightly oblique dusky to blackish bands on upper lobe and five on lower, only third broader and fourth more so and nearly black. Other fins all pale or whitish.

Micronesia, Polynesia, Hawaii. Closely related to *Epenooides vittatus*, but differs in the ~~smaller scales,~~ ^{smaller scales,} ~~and~~ ~~is~~ ~~generally~~ ~~with~~ ~~white~~ ~~color~~ ~~when~~ ~~fresh,~~ ~~golden~~ ~~bands~~ ~~soon~~ ~~fading.~~ Generally milk white color when fresh, golden bands soon fading.

17999 U.S.N.M. Honolulu. Dr. T. S. Streets.

Length 245? to 260 mm. 2 examples.

50667 U.S.N.M. Honolulu. Bureau of Fisheries.

Length 205 mm? Type.

52817 U.S.N.M. Hawaiian Islands.

Bureau of Fisheries (No. 03148). Length 266 mm.

— Gilchrist and Thompson, Ann.
South African Mus., vol. 6, pt. 2,
p. 187, 1908 (Natal); Ann. Durban
Mus., vol. 1, pt. 4, p. 391, May 21, 1917
(reference).

Red Sea, Zanzibar, East Indies, Philippines.

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Seale described this species as Amia magnifica, evidently thinking the structural differences sufficient. As compared with Klunzinger he gives D. VI - I, 8 compared with D. VII - I, 9 and A. II, 7 compared with A. II, 8. Klunzinger gives the color as silvery gray or bluish, with 4 or 5 citron yellow or golden longitudinal bands. Belly, breast and under jaw yellow. On head the longitudinal bands with blue reflections. Bleeker's account varies still greater, as D. VII - I, 9 or I, 10 and A. II, 8 or 9. The body is said to be pale blue with 6 longitudinal golden bands, and his figure doubtless colored from the preserved specimen 54 mm. long. Seale's example was but 40 mm.

Trachinotus morali Thiollière,
Fauna Woodlark, p. 176, 1857
(type locality, Woodlark Island).

Xeriola morali (Montrouzier)
Thiollière, Fauna Woodlark,
p. 176, 1857 (name in synonymy).

Cruel 79

Upeneus arge Jordan and Evermann

Upeneus arge Jordan and Evermann, Bull. U. S. Fish Comm., vol. 22, 1902 (1903), p. 187. Honolulu. ¹/_m Jenkins, Bull. U. S. Fish Comm., vol. 22, 1902 (1903), p. 456 (Honolulu). ¹/_m Snyder, Bull. U. S. Fish Comm., vol. 22, 1902 (1904), p. 527 (Honolulu). ¹/_m Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 264, pl. 39 (Honolulu, Pearl Harbor, Hilo). ¹/_m Fowler, Copeia, no. 112, Nov. 20, 1922, p. 83 (Hawaii).

Upeneoides arge Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 227, pl. 19 C (Hilo, Hawaii, Honolulu, Palmyra and Strong Islands, Apiang); Proc. Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 648 (Honolulu).

Upeneoides vittatus (not Forsk.) Streets, Bull. U. S. Nat. Mus., no. 7, 1877, p. 71 (Honolulu).

2036

Trachinotus rhomboides Jouan, Mém. Soc.
Sci. Nat. Cherbourg, vol. 21, p. 334, 1877-78 (on
Jouan, op. cit., fol. 8, pp. 260, 261, 1861, type
Uitoe, New Caledonia).

Trachinotus coppingeri Günther,
Rep. Voy. Alert, p. 29, pl. 3, fig. a,
1884 (type locality, Percy Island,
Cloudy Bay, New Guinea).

Trachinotus velox Ogilby, Proc.
Roy. Soc. Queensland, vol. 21, p. 14,
1908 (type locality,

Trachinotus cuvieri Wakiya, Ann.
Carnegie Mus., vol. 15, p. 220, 1924
(type locality, Misaki; Uwajima;
Ryubaru; Formosa) (on Trachinotus
bailloni Cuvier).

Depth $3\frac{7}{8}$ to 4; head $3\frac{2}{5}$ to $3\frac{7}{8}$, width $1\frac{7}{8}$ to 2. Snout $2\frac{1}{4}$ to $2\frac{2}{5}$ in head; eye 5 to $5\frac{1}{8}$, $2\frac{1}{8}$ to $2\frac{1}{3}$ in snout, $1\frac{3}{5}$ to $1\frac{7}{8}$ in interorbital; maxillary reaches eye, expansion $1\frac{1}{5}$ to $1\frac{1}{4}$ in eye, length $2\frac{1}{5}$ to $2\frac{3}{5}$ in head; barbels nearly reach opposite hind preopercle edge, length $1\frac{1}{2}$ to $1\frac{3}{5}$ in head; teeth villiform, in 4 or 5 irregular series forming bands in jaws, an anchor shaped band on vomer and rather broad band on each palatine; interorbital 3 to $3\frac{1}{5}$, slightly elevated and broadly convex. Gill rakers 5+17, lanceolate, $1\frac{1}{8}$ in gill filaments or $1\frac{2}{5}$ in eye; 3 above and 5 below rudimentary tubercles.

Scales 38 or 39 in lateral line to caudal base and 3 more on latter; 3 above, 7 below, 16 or 17 predorsal

2037

Trachynotus jordanii Wakuiya,
Ann. Carnegie Mus., vol. 15, p. 221,
pl. 35, fig. 1, 1924 (type locality,
Bonin Islands).

23379. Ilimango Bay, Burias Island.
March 5, 1909. Length 41 mm.

12252. Batan Island. June 5, 1909.
Length 46 mm.

3 examples. Cataingan Bay, Masbate
Island. April 17, 1908. Length 45 to 48 mm.

15945 and 15948. Pangasinan Island,
vicinity of Jolo. February 13, 1908.
Length 51 to 55 mm. ~~[317, 318]~~

6 examples. Southern Lagoon,
Toumindao Island, Sulu Archipelago.
February 26, 1908. [317, 318.]

23325. Simaluc Island, north of
Tawi Tawi. September 22, 1909. Length
40 mm. [1987.] Generally translucent
pearly. Head and body crossed by

Depth $2\frac{2}{5}$ to $3\frac{3}{5}$; head $3\frac{1}{4}$ to $4\frac{1}{8}$,
 width $1\frac{7}{8}$ to 2. Snout $3\frac{1}{4}$ to $3\frac{1}{2}$
 in head; eye $4\frac{3}{5}$ to 5, $1\frac{1}{3}$ to $1\frac{1}{2}$
 in snout, $1\frac{1}{3}$ to 2 in interorbital;
 maxillary reaches $\frac{1}{5}$ to $\frac{3}{5}$ in eye,
 expansion 2 to $2\frac{1}{4}$ in eye, length
 $2\frac{1}{4}$ to $2\frac{4}{5}$ in head; interorbital
 $2\frac{4}{5}$ to $3\frac{1}{4}$, convexly elevated.

Gill rakers 7 + 13, lanceolate,
 $1\frac{1}{3}$ in gill filaments, which $1\frac{1}{3}$
 in eye.

Scales minute in young,
 rather large with age posteriorly
 or on tail. Lateral line axial,
 but very slightly irregular;
 pores 80 in lateral line in
 adult. Scales with 2 or 3 basal
 radiating striae; circuli
 moderately fine, complete.

D. I, VIII, 21, I to 23, I, last spine
 3 to $3\frac{3}{4}$ in head, first branched
 ray $2\frac{1}{2}$ to $2\frac{7}{8}$ in fish without
 caudal, $1\frac{2}{5}$ in head in young;
 A. II - I, 21, I, first branched
 ray $2\frac{3}{4}$ to 3 in fish without
 caudal, $1\frac{1}{3}$ in head in young;
 caudal $2\frac{2}{5}$ to $2\frac{4}{5}$ in rest of
 fish, widely forked, long
 slender lobes pointed; least
 depth of caudal peduncle $2\frac{3}{5}$
 to $3\frac{1}{4}$ in head; pectoral $1\frac{1}{4}$ to
 $1\frac{2}{5}$, ^{rays II, 15} ventral $1\frac{4}{5}$ to $2\frac{1}{3}$, rays
I, 5.

Back light olive brown,
 sides and below white with
 silvery tinge. Adult with 5
 round black spots close
 along and largely above lateral

line, first 3 greatly contrasted and much larger than eye; last 2 smaller than eye and not especially dark. Spinous dorsal dusky. Soft dorsal and anal with long front lobes dusky to blackish, edge of lower part of fin dark gray. Caudal dusky, darker marginally. Pectoral grayish, paler below. Iris silvery white. Young paler and without dark spots or only with faint traces along lateral line. Coloration much more uniform and silvery white.

Red Sea, ^{Arabia,} Zanzibar, Natal, Madagascar, Mauritius, Bourbon, Seychelles, India, Ceylon, Malaya,

East Indies, Philippines, Siam,
Formosa, Riu Kiu, Western
Australia, Queensland, Melanesia,
Micronesia, Polynesia.

20940. Abuyog, Leyte. July 26, 1909.
Length 94^{to 144} mm. Three examples.

One example. Titulayan Bay, Luzon.
June 17, 1909. Length 40 mm.

10602, 10603, 22663 [572]. Cataingan
Bay, Masbate. April 18, 1908.
Length 157 to 198 mm.

8608, 8609. Matnog Bay.
May 31, 1909. Length 280 to 298 mm.

11422. Hogas Point, Panay.
February 4, 1908. Length 183 mm.
One example. Observatory Island.
December 9, 1908. Length 27 mm.

19567, 20809 to 20811. Paluan
Bay, Mindoro. December 11, 1908.
Length 81 to 129 mm.

8429. Pandanon Island. March
24, 1909. Length 250 mm.

Ten examples. Port Caltan. December
15, 1908. Length 42 to 104 mm.

Cuvier 29 Pseudupeneus cinnabarinus (Cuvier)

Upeneus cinnabarinus Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 475. Tringemale, Ceylon. ¹/_m Bleeker, Verhandl. Batavia. Genootsch. (Nal. Ichth. Bengal), vol. 25, 1853, p. 34 (reference). ¹/_m Day, Fishes of India, pt. 1, 1875, p. 126 (describes type); Fauna British India, Fishes, vol. 2, 1889, p. 33. ¹/_m Pearson, Ceylon Administrat. Rep., 1915-18, pp. F17, F18.

Depth $3 \frac{1}{8}$ of total; head 4. Eye 4 in head, 2 in snout, 1 in interorbital; maxillary reaches to orbit; barbels rather thick, reach below front edge of orbit; teeth conic, uniserial in each jaw; opercular spine rather strong.

Scales 29 in lateral line; 3 above, 7 below. Tubes in lateral line arborescent posteriorly.

13469, to 13470. Port San Pio ²⁰⁴³
Quinto, Camiguin. November 10, 1909.
Length 76 to 125 mm.

21982. Port San Pio Quinto.
November 11, 1908. Length 154 mm.

6582. Port San Vicente.
November 18, 1908. Length 63 mm.

Six examples. Sirinao Island,
Maboda Bay near Alfonso XIII.
December 30, 1908. Length 53 to
127 mm.

19994, 19995. West coast of
Palani Island. November 18, 1908.
Length 101 to 108 mm.

20777. Powatik Harbor,
Makyan Island. November 28, 1909.
Length 106 mm.

1250

on head. Each scale of body
with yellowish spot. Fins rosy.
Soft dorsal and anal with 3 or 4
yellowish longitudinal bands. Caudal
yellowish posteriorly. Length to 290
mm. (Bleeker.)

Red Sea, Zanzibar, Mauritius,
India, East Indies, Philippines,
Melanesia.

U.S.N.M., no. 47836. Port Jackson,
New South Wales. Australian Museum.
Length 272 mm.

U.S.N.M., no. 56203. Mindanao.
Bureau of Fisheries (3761). Length
220 mm.

U.S.N.M., no. 5703. Bonin Islands.
William Stimpson. Length 113 to 220 mm.
Four examples.

U.S.N.M., no. 66064. Ellice Islands.
Albatross Collection. Length 230 mm.

U.S.N.M., no. 66065.
Albatross Collection. Length 277 to 310 mm.
Three examples. All have a single
large black spot on lateral line
about opposite soft dorsal origin,
not quite as large as eye but very
contrasted. As Trachinotus oblongus.

U.S.N.M., no. 66066. Iukuhiva.
Albatross Collection. Length 260 mm.
caudal ends. Like no. 66065 in color,
As Trachinotus oblongus.

1312
52856 to 52859 A.N.S.P. Orion, Luzon.
May 11, 1923. Rev. Joseph Clemens.

Purchased. Length 130 to 145 mm.

53048 A.N.S.P. Durban Bay, Natal.

1927. H. W. Bell Marley. Length 146 mm.

2095

Genus Parastrumateus Bleeker

Parastrumateus Bleeker, Ned.
Tijds. dierk., vol. 2, (1865) p. 174,
(Type Stromateus niger Bloch,
monotypic.)

Apolectus (not Bennett, ^{Dec. 6,} 1831) Cuvier,
Hist. Nat. Poiss., vol. 8, (1831) p. 323,
(Type Stromateus niger Bloch, ^{Jan. 1832}),
designated by Gill, Proc. Acad.
Nat. Sci. Philadelphia, (1862) p.
126v)

Formio (Whitley) McCulloch, Austral.
Mus. Mem., no. 5, pt. 3 p. 193, Sep.
10, 1929. (Type Apolectus stromateus
Cuvier, orthotypic.)

10 examples. Parang Parang,
Mindanao. May 23, 1908. Length 94 to 120 mm.

8 examples. Pucot River, Mariveles.
January 29, 1909. Length 75 to 99 mm. Two
of these with prolonged second dorsal spine.

31 examples. Ragay River, Ragay Gulf,
Luzon. March 10, 1909. Length 45 to 95 mm.

16 examples. River at Pasacao, Luzon.
March 9, 1909. Length 48 to 99 mm. Two
largest with prolonged second dorsal spine.

1 example. Vera del Sur Island,
Palawan reef sand flat. April 6, 1909. Length
81 mm.

8 examples. Gaur River, Legaspi. June 7,
1909. Length 54 to 75 mm.

1 example. Sandakan market, Borneo.
March 2, 1908. Length 79 mm.

57929 U. S. N. M. Zamboanga. Dr. E. A.
Mearns. Length 21 to 94 mm. 4 examples.
As Xystaema oyena.

Body elongately ovoid, compressed.
 Head moderate. Snout obtuse.
 Eye advanced, before middle in
 head length. Maxillary reaches
 eye. Teeth small, uniserial in
 jaws, palate and tongue toothless.
 Lower gill rakers ^{branchiostegals 7.} 14. Scales
 small, extend on vertical fins.
 Lateral line complete, axial,
 with short keel posteriorly or
 on caudal peduncle. ~~Bro~~ Dorsal
 with 2 to 5 short spines in
 young, anal with 2, concealed
 with age. Soft dorsal and anal
 with elevated lobes anteriorly in
 young, shorter with age. Caudal
 well forked. Pectoral longer
 than head. Ventrals only
 present in young, jugular.
 One species. Greatly like
Pampus superficially, but without
 acrophaegeal denticles of the
Stomatidae.

Parastrumateus niger (Bloch)

Stromateus niger Bloch, Naturges.

Ausland. Fische, vol. 12⁹, (1795) p.

⁹³
85, pl. 422, (no type locality [probably Malabar]). — Schneider, Syst.

Ichth. Bloch, p. 492, 1801 (Tranquebar).

— Shaw, General Zool., vol. 4, p. 111, 1804, — Lacépède, Hist. Nat. Poiss.,

vol. 4, pp. 692, 693, 1802 (on Bloch).

— Stromateus Cuvier, Hist. Nat.

Poiss., vol. 9, p. 385, 1833 (Pondicherry).

— Richardson, Ichth. China and

Japan, p. 272, 1846 (China Sea).

14 examples. Malampaya River,
Palawan Island. December 26, 1908.
Length 39 to 123 mm. From beyond tide water.

114 examples. Mantaguin Bay, Palawan.
April 1, 1909. Length 25 to 82 mm. About
16 with prolonged second dorsal spine,
in largest reaches base of last ray,
though in others much shorter.

4 examples. Mantaguin Bay. April 2,
1909. Length 65 to 87 mm.

2 examples. Mariveles Bay, Manila Bay,
Luzon. January 27, 1909. Length 60 to 64 mm.

4 examples. Sabada Bay, Palawan.
December 31, 1908. Length 75 to 101 mm.

1 example. Near mouth of Tayabas River,
Luzon. February 25, 1909. Length 52 mm.

4 examples. Near mouth of Tayabas River.
February 27, 1909. Length 50 to 93 mm.

3 examples. Paluan River, Mindoro.
December 11, 1908. Length 19 to 56 mm.

Bleeker, ~~Bleeker~~ Verh. Batavia.
 Genoot. (Madura), vol. 22, 1849, p. 4,
 - Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 114, 1849 (1850)
 (Kammal; Lamprang); Nat. Tijds.
 Ned. Indie, vol. 1, 1850, p. 370 (Batavia;
 Cheribon; Tasuruan; ^{Jerdon, Madras Journ. Nat. Sci., p. 138, 1851, - Bleeker, Nat. Tijds. Ned. Indie, 3 serie,} Surabaya); vol.
 3, 1852, p. 53 (Singapore); Verh.
 Batavia. Genoot. (Maakreel), vol. 24,
 1852, p. 77 (Javan localities); (hal.
 Ichth. Bengal), vol. 25, 1853, p. 44
 (reference); Nat. Tijds. Ned. Indie,
 vol. 7, 1854, p. 312 (Tjiringin); vol.
 9, 1855, p. 394 (North Pasuruan);
 Act. Soc. Sci. Ind. Neerl., vol. 1, no.
 3, 1856, p. 2 (Macassar); Verh.
 Batavia. Genoot. (hal. Ich. Japan),
 vol. 26, 1857, p. 5 (Nagasaki); Act.
 Soc. Sci. Ind. Neerl., vol. 3, no. 3,
 1857-58, p. 6 (Japan); Nat. Tijds.
 Ned. Indie, vol. 16, 1858, p. 407,
 (Japara, ~~Japan~~ Java); vol. 21, 1860,
 p. 137, 1860 (Muntok, Banka).

- Bleeker's
 - Bleeker's
 - Bleeker's

Xystoema ovatum Ogilby, Handbook of
Sydney, 1898, p. 129.

Xystoema ovatum Waite, Mem. Australian
Mus., vol. 4, pt. 1, 1899, p. 83, pl. 13.

^m Roughley, Fishes of Australia, 1916, p. 119,
pl. 38.

Xystoema ovata Stead, Fishes of Australia,
1906, p. 117 (New South Wales, Queensland, West
Australia).

Depth $2\frac{2}{5}$ to $2\frac{1}{2}$; head $2\frac{4}{5}$ to $3\frac{1}{2}$, width
 $1\frac{7}{8}$ to $2\frac{1}{4}$. Snout $3\frac{1}{5}$ to $3\frac{1}{2}$ in head; eye 3 to
 $3\frac{1}{2}$, greater than snout in young to $1\frac{1}{8}$ with
age, 1 to $1\frac{2}{5}$ in interorbital; maxillary
reaches to or $\frac{1}{8}$ in eye, expansion 3 in eye,
length $2\frac{7}{8}$ to 3 in head; interorbital $2\frac{1}{5}$ to
3, broadly convex. Gill rakers 6 + 7, short
points, longest $\frac{1}{3}$ of gill filaments, which
 $1\frac{3}{4}$ in eye.

Scales 38 to 40 in lateral line to
caudal base and 3 or 4 more on latter;

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 401, 1860 (China; Malay
Peninsula). — Day, Fishes of
Malabar, p. 79, 1865. — Playfair,
Fishes of Zanzibar, p. 65, 1866
(Bagamoa, East Africa).

— Day, Fishes of India, pt. 2, p. 247,
pl. 5 B, fig. 4, 1876 (Malabar; Madras);
Fauna British India, Fishes, vol.
2, p. 199, 1889.

rostral bar includes chin,
not on postocular; spinous
dorsal blackish terminally.

notata

w.³ Brown, each scale with broad
deep brown bar producing reticulated
design; small round dusky caudal
spot basally.

griffini

t³. Dorsal spines 6.

ee
~~AA~~ Depth $2\frac{1}{5}$ to $2\frac{7}{8}$.

ff¹ Pale brown, without
any markings; depth $2\frac{3}{4}$ to
 $2\frac{7}{8}$.

cardinalis

ff² Tail without large lateral
dusky blotch but dark band
on lateral line dark at
caudal base and out over
caudal medially; broad dark
postocular band to pectoral
base; depth $2\frac{2}{3}$.

diancaea

w.⁴ Pale brown, each
scale on side with
dark median blotch;
2 dark oblique bands
on cheeks from eye.
nostrae guideae

~~p. 137 (Muntok, Banca).~~

Parastromateus niger Bleeker,
ned. Tijds. Dierk., vol. 2, (1865) p.
174, (Siam; copied). — Fowler,
Proc. Acad. Nat. Sci. Philadelphia,
vol. 87, p. 142, 1935 (Bangkok).

Caesi 79

Gerrus ovatus Günther

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Gerrus ovatus Günther, Cat. Fishes Brit. Mus.,
vol. 1, 1859, p. 343. Australia (Figure not
published); vol. 4, 1862, p. 257 (Australia).

Castelnau, Proc. Zool. Acclimatiz. Soc.
Victoria, vol. 2, 1873, p. 139 (West Australia);
Proc. Linn. Soc. New South Wales, vol. 3, 1878,
p. (354) 391 (Port Jackson). Klunzinger,
Sitz. Ber. Akad. Wiss. Wien, math.-naturw.
Klasse, vol. 80, pt. 1, 1879, p. 354 (Port Darwin).

Kent, Great Barrier Reef, 1893, p. 369
(Queensland). Ogilby, Edible Fish. Crust.
New South Wales, 1893, p. 147 (New South Wales
and Moreton Bay). Waite, Rep. Sea Fisher.
Thetis, 1898, p. 3 (off Newcastle, New South
Wales, in 16 to 19 fathoms). McCulloch,
Fishes New South Wales, ed. 2, 1921, p. 58, pl. 24,
fig. 210a.

Apolectus niger Jordan and Snyder,
Annot. Zool. Japon., vol. 3, (1901) p.
70, (reference).

— Fowler, Journ. Acad. Nat. Sci.
Philadelphia, ser. 2, vol. 12, p. 513, June
10, 1904 (Padang).

— Jordan and Eversmann, Proc. U. S. Nat. Mus.,
vol. 25, p. 339, fig.

— Jordan and Seale, Bull. Bur. Fisher.,
vol. 26, (1906) p. 15, (Cavite). — Jordan

and Richardson, Bull. Bur. Fisher.,
vol. 27, (1907 (1908)) p. 252 (Manila);
Mem. Carnegie Mus., vol. 4, no. 4, p. 179, Aug.
28, 1909 (Takao record).
fig. 10
(copied)

— Fowler, Proc. Acad. Nat. Sci.

Philadelphia, vol. 77, 1925, p. 218 (Katal).

— Barnard, Ann. South Africa Mus., vol. 26, pt. 2, p. 656, Oct. 1927 (Katal). — Fowler,

Journ. Bombay Nat. Hist. Soc., November

1925, (p. 6) (Bombay); (Oct. 20, 1927) p. 258,

(Bombay; Padang material); vol. 33,

no. 1, (September 30, 1928) p. 111 (Bombay).

Caen 79 Gerres subfasciatus Cuvier

Gerres subfasciatus Cuvier, Hist. Nat. Poiss.,
vol. 6, 1830, p. 477. Port Jackson. ^L _m Günther,
Cat. Fishes Brit. Mus., vol. 1, 1859, p. 343
(no locality); vol. 4, 1862, p. 257 (no locality).

^L _m Castelnau, Proc. Linn. Soc. New South Wales,
vol. 3, 1878, pp. 354, 391 (Port Jackson). ^L _m

McCulloch, Fishes New South Wales, ed. 2, 1927,

p. 58. — J. Schmidt, Trans. Pac. Comm. Acad. Sci. USSR, vol. 1, 1930,
p. 53 (Stoman, Okinawa, River Kii).

Depth 3 in total length. Snout rather
shorter than eye. D. IX, 10, spines slender,
third half body depth. A. III, 7, second
spine stronger but shorter than third or
 $\frac{1}{5}$ body depth. Silvery, with 6 or 7
indistinct vertical bands. (Günther.)

New South Wales, ^{River Kii} a little known species,
apparently differing from Gerres oواتus
in indistinct vertical bands according
to McCulloch.

Formio niger McCulloch, Austral.
Mus. Mem., no. 5, pt. 2, p. 193, Sep.
10, 1929 (reference).

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, 1934, p. 453,
fig. 32 (young) (Durban, Natal).

~~207~~
42030 U.S.N.M. Port Jackson, New
South Wales. Australian Museum.
Length 191 mm.

59936 U.S.N.M. Port Hacking, New
South Wales. D.G. Stead. Length 61 to
161 mm. 6 examples.

Apolectus stromateus ^{Cuvier} Valenciennes,
 Hist. Nat. Poiss., vol. 8, ~~1831~~, p. 439,
 pl. 238, 1831 (Jan. 1832) (type
 locality, Malabar). — Cantor, Journ.

Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1105,
 1849 (1850) (Pinang, Pegu).

Seserinus vachellii Richardson, Ichth.

China and Japan, (1845) p. 273 (type
 locality, China sea; Canton).

— Swainson, Nat. Hist. Animals, vol. 2, p. 252, 1839
 (on Cuvier).

Temnodon inornatus (Kuhl and Van
Hasselt) Bleeker, Verh. Batavia.

Genoot. (Nakreeel.), vol. 24, (1852) p.

77 (name in synonymy).

92

5 above, 9 below, 15 to 20 predorsal extending forward opposite nostrils and premaxillary groove entirely scaled over; 2 or 3 rows of scales on cheek to preopercle ridge. Scales with 6 or 7 basal radiating striae; circuli very fine.

D. IX, 10, I, second spine $1\frac{1}{5}$ to $1\frac{3}{5}$ in head, first ray $2\frac{1}{10}$ to $2\frac{1}{3}$; A. III, 7, I, third spine 2 to $2\frac{1}{10}$, first ray $1\frac{3}{4}$ to 2; least depth of caudal peduncle $2\frac{1}{4}$ to $2\frac{3}{4}$; ventral $1\frac{1}{3}$ to $1\frac{1}{2}$; caudal $2\frac{4}{5}$ to 3 in combined head and body to caudal base; pectoral $2\frac{1}{2}$ to 3.

Back brown or olivaceous, sides and below whitish. Iris slate. Fins pale. Dorsals dusky terminally, blackish on spinous fin. Anals and caudal with some brownish.

New South Wales, Queensland, Northern Territory, West Australia.

Depth $1\frac{1}{2}$ to $2\frac{1}{3}$; head $2\frac{4}{5}$ to 4, width $1\frac{3}{5}$ to $2\frac{1}{5}$. Snout 3 to $3\frac{1}{3}$ in head from snout tip; eye $4\frac{1}{2}$ to $6\frac{1}{8}$, $1\frac{1}{3}$ to 2 in snout, $1\frac{1}{3}$ to $2\frac{3}{4}$ in interorbital; maxillary reaches eye, expansion $1\frac{7}{8}$ to $2\frac{1}{3}$ in eye, length 3 to $3\frac{1}{6}$ in head from snout tip; interorbital 2 to $2\frac{4}{5}$, convexly elevated. Gill rakers 6 or 7 + 14, lanceolate.

Scales 58 to 110 in lateral line; 12 to 15 along lateral line posteriorly slightly thickened or beveled; 28 above, 40 below. Scales sometimes with single basal stria; circuli 32 to 136, complete.

D. II, 41, I to 46, I, third branched ray $2\frac{1}{2}$ to $2\frac{7}{8}$ in fish without caudal; A. II, 37, I or 38, I, third branched ray $2\frac{2}{5}$ to $3\frac{1}{8}$; caudal $3\frac{1}{4}$ to $3\frac{3}{4}$, forked; pectoral $2\frac{2}{5}$ to $2\frac{4}{5}$, rays II, 18; least depth of

caudal peduncle $4\frac{1}{8}$ to $6\frac{1}{2}$ in total head length; ventral $1\frac{1}{4}$ to $2\frac{2}{3}$ in young.

Purplish gray on back. young with 5 obscure broad dark vertical bands. Iris brownish. Dorsal and anal slaty. Caudal pale brown. Edges of all vertical fins slightly dusky. Pectoral brownish.

8848. Catbalogan, Samar.
April 15, 1908. Length 148 mm.

7912. Manila market.
March 17, 1908. Length 70 mm.

5362. Oton market, Iloilo.
March 30, 1908. Length 85 mm.

8295. Sorogon, Luzon.
March 12, 1909. Length 252 mm.

19731. Tacloban market.
July 25, 1909. Length 73 mm.

U.S.N.M., three examples
(with U.S.N.M., no. 75942). Japan?
P.L. Jouy. (2192, 2193.) Length 106
to 120 mm. Des Stromateus argenteus.

~~1072~~

6735 U.S.N.M. Bonin Islands.
William Stimpson. Length 164 to 275
mm. 2 examples. Lower gill rakers 21.

55127 U.S.N.M. Honolulu. Albatross
Collection. Length 218 mm.

56793 U.S.N.M. Apia. Bureau of
Fisheries. Length 96 to 150 mm.

65957 U.S.N.M. Borabora. Albatross
Collection 1899. Length 95 mm. Lower gill
rakers 22.

65956 U.S.N.M. Nabemo, Tuamotus
Albatross Collection 1899. Length 140 to 257 mm.
4 examples in poor preservation.

65958 U.S.N.M. Funafuti. Albatross
Collection 1899. Length 108 to 129 mm.
2 examples in poor preservation.

65959 U.S.N.M. Vavau, Tonga Island.
Albatross Collection 1899. Length 140 mm.

65960 U.S.N.M. Guam. Albatross
Collection. Length 94 mm.

A. N. S. P., four examples. Bombay.
Bombay Natural History Society. 1925.
Length 112 to 168 mm.

A. N. S. P., four examples. Bombay.
Dr. F. Hallberg. 1925. Length 62 to 80
mm.

A. N. S. P., one example. Bombay.
Dr. F. Hallberg. 1925. Length 240 mm.

A. N. S. P., one example. Natal.
1922. H. W. Bell Marley. Length 500 mm.

10/10
52753 and 52754 A.N.S.P. Orion.
May 11, 1923. Rev. Joseph Clemens. Purchased.
Length 95 to 100 mm.

52755 and 52756 A.N.S.P. Santa Maria,
Flores, Luzon. January 26, 1923. Rev.
Joseph Clemens. Purchased. Length 54 to 90 mm.

52757 to 52759 A.N.S.P. Santa Maria.
January 26, 1923. Rev. Joseph Clemens.
Purchased. Length 86 to 98 mm.

52760 A.N.S.P. Orani, Luzon. April
29, 1923. Rev. Joseph Clemens. Purchased.
Length 34 mm.

53175 A.N.S.P. Bombay, India. Prof.
F. Hallberg. 1924. Purchased. Length 159 mm.