

Family Mugilidae

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Body oblong, more or less compressed. Mouth small. Jaws with small, feeble teeth, or none, when present of various form, mostly loosely attached, often ciliiform. Premaxillaries protractile. Gill openings wide, membranes separate and free from isthmus. Gills 4, slit behind fourth. Gill rakers long and slender. Pseudobranchial large. Branchiostegals 5 or 6. Air bladder large, simple. Intestinal canal long. Peritoneum usually black. Vertebrae 24. Scales rather large, cycloid. No lateral line, but furrows often deepened on middle of

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each scale so as to form lateral streaks. Two short dorsals, well separated, first of 4 stiff spines and last much shorter than others. Second dorsal longer than first, like anal. Anal spines 2 or 3, graduated to last. Caudal forked or emarginate. Pectoral rather high. Ventral abdominal, not far back, of spine and 5 rays.

Fishes of small or moderate size, valued as food, living in fresh waters and on the shores of warm countries. Their food is organic matter contained in the mud of the bottom.

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An examination of the type of Agonostomus bryanti Bean and Weed shows it is not a member of the present family, to which it was assigned by these authors. Weber and Beaufort have correctly suggested that it "has a superficial likeness with Crassiops" to which genus of the Eleotridae it doubtless belongs.

Analysis of Genera

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a. Mugilinae. Mouth transverse, lower jaw widely angular in front; teeth ciliaform, in but one or few rows in each jaw; no teeth on palate.

b. Ciliaform teeth in jaws simple.

c. Front of jaws broadly convex as seen from above; lips moderate.

d. Orbits with well developed adipose eyelids, covering at least part of iris. Mugil.

d.<sup>2</sup> Orbits without distinct adipose lids.

e. Eyes lateral, moderately advanced. Liza.

e.<sup>2</sup> Eyes protrude above upper side of head, greatly advanced. Rhinomugil.

c.<sup>2</sup> Front of jaws broadly truncate as seen from above; lips broad; no adipose eyelids. Chelon.

b.<sup>2</sup> Ciliaform teeth in jaws spatulate; eye without or only very narrow marginal rim like lids. Squalomugil.

a.<sup>2</sup> Agonostominae. Mouth cleft lateral,  
lower jaw narrowly angular or  
rounded in front; minute teeth  
present on palate.

f.<sup>1</sup> Jaws with teeth.

g.<sup>1</sup> Teeth above well developed,  
uniserial. Myxus.

g.<sup>2</sup> Teeth above minute, in narrow band.  
Agonostomus.

f.<sup>2</sup> Jaws toothless. Trachystoma.

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Genus Mugil Linnaeus

Mugil Linnaeus, Syst. Nat., ed. 10, pt. 1,  
p. 316, 1758. (Type Mugil cephalus  
Linnaeus, monotypic.)

Albula (not Granon 1763, Osbeck 1761)

Catesby, Nat. Hist. Carolina, vol. 2,  
ed. 2, p. 6, 1771. (Type Mugil curama  
Valenciennes, monotypic.) (Inadmissible.)

Cestres Klein, Gesellsch. Schauplatz,  
vol. 5, p. 460, 1777. (Type Mugil cephalus  
Linnaeus.) (Inadmissible.)

~~Chelon Röse, Vertebr. Angerm. Syn. Rom.~~

~~Hist., ed. 2, p. 118, 1793. (Type Mugil~~

~~Chelo Cuvier, affixed by Jordan and~~

~~Ebermann, Genera of Fishes, pt. 1, p.~~

~~52, 1917.)~~

Cephalus (Plumier) Lacépède, Hist. Nat.

Poiss., vol. 5, pp. 384, 386, 1803. (Type  
Mugil cephalus Linnaeus, tautotypic.)

(Inadmissible.)

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Ello Gistel, Handb. Naturges., p.  
356, 1850 [=1847]. (Type Ello  
cephalus Gistel = Mugil cephalus Linnaeus,  
monotypic.)

Arniion Gistel, Naturges. Thierw., p. x,  
1848. (Type Mugil cephalus Linnaeus,  
virtually, as Arniion Gistel proposed  
to replace Mugil Linnaeus.)

Querimana Jordan and Gilbert, Proc.  
U. S. Nat. Mus., vol. , p. 588, 1882.  
(Type Myxus harengus Günther,  
monotypic.)

~~Liza Jordan and Swain, Proc. U. S.  
Nat. Mus., vol. 17, p. 261, 1884. (Type  
Mugil capito Cuvier, orthotypic.)~~

~~Hadalechilus Fowler, Proc. Acad.  
Nat. Sci. Philadelphia, vol. 1, p.  
261, 1903. (Type Mugil labes Cuvier,  
orthotypic.)~~

Allochelon Whitley, Austral. Zoologist,  
vol. 6, pt. 3, p. , August 1930. (Type  
Mugil paigiensis Day and Yamard,  
orthotypic.)

Body oblong, rather robust or somewhat compressed. Eye large, lateral. Adipose eyelid variably large or little developed, when present nearly concealing eye; little developed in <sup>of some species</sup> young. Mouth small, partly inferior, more or less transverse, lower jaw angulated. Upper lip moderate ~~to broad~~. Jaws with one or few series of short, flexible, ciliiform teeth; less developed in young. No vomerine or palatine teeth. Preorbital usually entire, more serrate in young. Stomach muscular, like gizzard of fowl. Scales large, cycloid. Anal spines 3, only 2 developed in young, fin slightly longer than second dorsal.



Ambassis buruensis Bleeker.

Ambassis buruensis Bleeker, Nat. Tijds. Ned. Indië, vol. 13, 1857, p. 79. Kajeli, Buru.

— Bleeker, Atlas Ichth. Ind. Néerl., vol. 8, 1876-77, p. 137, pl. (75) 353, fig. 5 (Sumatra, Bali, Buru). — Weber, Zool. Ergebn. Reise Niederl. Ost Indien, vol. 3, 1894, p. 408 (Tjénrana River, Pampanna, Celebes; Kupang, Timor); Zool. Forschungs. Austral. Semon, vol. 5, 1895, p. 263 (Amboina fresh waters).

Ambassis buruensis Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 226 (copied). —

Martens, Preuss. Exped. Ost-Asien, vol. 1, 1876, p. 386 (Luzon; Kupang, Timor). —

Meyer, Anales Soc. Españ. Hist. Nat. Madrid, vol. 14, 1885, p. 11 (north Celebes). — Elera, Cat. Fauna Filip., 1895, p. 469 (Luzon, Pasig, Manila). — Jordan and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 18 (Cavite).

A large genus, with many species, feeding on mud and living in great schools along the shores and brackish lagoons in all warm regions. Some enter fresh water and many are valued as food.

The following imperfectly described species I am unable to properly locate:

1 example. Stream near village at  
Chase Head, Endeavor River, Palawan.

December 22, 1908. Length 50 mm.

2 examples. Sibig Bay, January 7, 1908. Length 63 to 67 mm.

2-3 examples. Tugabau, Marinduque

Island. February 25, 1909. Length 50 to  
90 mm.

17275 and 17276. Verde del Sur  
Island, Palawan. April 7, 1909.  
Length 74 to 85 mm.

19904. Tawao River, Sibuko Bay  
vicinity, Borneo. September 30, 1909.  
Length 58 mm.

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Mugil acutus Valenciennes

Mugil acutus Valenciennes, Hist.  
Nat. Poiss., vol. 11, p. 140, <sup>July</sup> 1836  
(type locality, "New Holland" Peron [<sup>west Australia</sup> = north ^])  
— Günther, Cat. Fish. Brit. Mus.,  
vol. 3, p. 410, 1861 (reference). —  
McCulloch, Mem. Austral. Mus.,  
vol. 5, pt. 1, p. 114, June 29, 1929  
(reference).

8 examples. Pineda, Palawan. December 25, 1908.<sup>196</sup>  
Length 76 to 102 mm.

90 examples. Tangauran River,  
Busuanga Island. December 16, 1908.  
Length 21 to 76 mm.

3 examples. Pasacao, Refugio Island,  
Ragay Gulf, Luzon. March 9, 1909.  
Length 52 to 67 mm.

8484 and 8485. Port Dupon, Leyte  
Island. March 17, 1909. Length 73 to 80  
mm.

6734. Port Matulbi, Luzon. November  
2, 1908. Length 57 mm.

7 examples. Pucot River, Mariveles,  
Luzon. January 29, 1909. Length 62 to 90 mm.

11251 and 11252. Ragay River, Ragay  
Gulf, Luzon. March 10, 1909. Length  
25 to 105 mm. 54 examples. [4967 to 4982;  
5386 to 5399].

12 examples. River at Port Dupon, Leyte.  
March 17, 1909. Length 30 to 85 mm.

over 5 head  $4\frac{1}{2}$ ,  
depth 4; head depth little  
more than half its length. Eye  
4 in head, equals snout.

Scales broader than long,  
with 12 radiating striae.

D. IV - I, 8; A. III, 9; caudal  
14; pectoral 16; ventral I, 5.

Color golden, more brownish  
green on back. nearly 100 mm.  
(Valenciennes.)

North West Australia? Described  
as elongate, especially the head  
more elongate and pointed than  
in other mullets.

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Sparus macrocephalus (Basilewsky)

Pagrus macrocephalus Basilewsky, Nov.

Mém. Soc. Nat. Moscou, vol. 10, 1855, p. 222, pl. 3, fig. 1? Gulf of Pechili and Oriental Sea, Peking

Sparus macrocephalus Jordan and Metz,

Mém. Carnegie Mus., vol. 6, no. 1, 1913, p. 34 (Fusan, Korea).  $\frac{1}{2}$

Jordan and Thompson, Mém. Carnegie Mus., vol. 6, no. 4, 1914, p. 257 (Matsushima Bay, Shimonoseki).  $\frac{1}{2}$

Jordan and Hubbs, Mém. Carnegie Mus.,

vol. 10, <sup>no. 2,</sup> 1925, p. 240 (Tokyo, Shizuoka,

Toba, Mikawa Bay, Oyama, Misaki, Miyazu, Fukuji).  $\frac{1}{2}$  Ashima, Jap.

Journ. Zool. Trans. Abstracts, vol. 1, no. 5, March 31, 1927, p. 153 (copied).

Chrysophrys longispinis (part) Valenciennes,

Hist. Nat. Poiss., vol. 6, 1830, p. 116 (Japanese

example).  $\frac{1}{2}$  Schlegel, Fauna Japonica, Poiss., pts. 2-4, 1843, p. 68, pl. 32 (Japan). —

The following are young examples, with imperfect characters and therefore hardly available for identification:

Three examples. Balayan Bay, Verde Island Passage. January 19, 1908. Length 14 to 35 mm.

Six examples. Batangas River, Batangas, Lizon. June 7, 1908. Length 25 to 31 mm.

Two examples. Caluagan River, 3 miles from mouth near Paluan Bay, Imdoro. December 11, 1908. Length 28 or 29 mm.

Two examples. Cebu. March 13, 1909. Length 32 to 38 mm.

One example. Dalaganem Island, eastern Palawan and vicinity. April 8, 1909. Length 39 mm.



24036. Labuandata Bay, Gulf of Boni,  
Celebes. December 18, 1909. Length 52 mm.

14417, 23544 to 23546, 23913, 23939.

Talisse Island, north of Celebes.

November 9, 1909. Length 84 to 101 mm.

23682, 23900 to 23903. Talisse Island.

February 21, 1908. Length 65 to 74 mm.

23860 and 23861. Togyian Bay, Togyian  
Island. November 9, 1909. Length 74 to  
76 mm.

23444 and 23446. Doworra Island.

December 2, 1909. Length 50 to 80 mm.

to 23605.  
23603, <sup>68</sup>Yane Road, Gillolo Island.

December 1, 1909. Length <sup>68</sup>89 mm. 4 examples.

~~Example. Yane Road. December 1, 1909.~~

~~Length 68 mm.~~

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One example. Dumaca River, Luzon.  
February 25, 1909. Length 37 mm.

Two examples. Endeavour Strait,  
at north end, north west coast of  
Palawan. December 22, 1908. Length  
22 to 27 mm. A. III, 9, I. Back drab,  
sides and below bright silvery white.  
Fins uniform whitish.

Two examples. Endeavour Strait,  
Palawan. December 23, 1908. Length  
27 or 28 mm.

Six examples. Manila Bay, Luzon.  
December 7, 1907. Length 19 to 24 mm. Poor.

Four examples. Manila Bay. December 8,  
1907. Length 15 to 27 mm.

Thirteen examples. Manila Bay. January 13,  
1908. Length 15 to 17 mm.

23275, 23276, 23420, 23421. Tutu Bay,  
Jolo Island, first anchorage. September  
19, 1909. Length 93 to 100 mm.

23770. Ulugan Bay, Palawan Island.  
December 28, 1908. Length 58 mm.

10, 2396 and 23961. Danawan and Pi  
Amil Islands, vicinity Darvel Bay,  
Borneo, Dutch East Indies. September 26,  
1909. Length 75 to 86 mm.

23517 and 23616. Tifu Bay, Bouru  
Island. December 10, 1909. Length 41 to 86 mm.

23314 to 23316. Tomahu Island.  
December 11, 1909. Length 96 to 102 mm.

24027. Buha Island, Gulf of Tomini,  
Celebes. November 20, 1909. Length 90 mm.

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Three examples. Saboda Bay,  
Palawan. December 31, 1908. Length  
28 to 37 mm.

34 examples. Hasugbu Bay, Luzon.  
January 15, 1908. Length 14 to ~~22~~<sup>26</sup> mm.

One example. Hato River, Lagonoy  
Gulf, Luzon. June 18, 1909. Length 33  
mm.

Two examples. Pandanon Island.  
March 23, 1909. Length 15 mm.

Seven examples. Hasugbu Bay.  
January 21, 1908. Length 23 to 34 mm.

26 examples. Philippines.  
Length 17 to 44 mm. Maxillary rather  
lateral, not quite reaching eye.  
Scales 33, transversely 12, predorsal  
16 forward to eye. A. III, 9, I.

Anal pink, dusky bar at base  
turning down near vertical edge.  
Caudal pink, edges dusky. Pectoral  
pink.

~~23681,~~

~~23900 to 23903. Talisee Island.~~

~~February 21, 1908. Length 65 to 74 mm.~~

~~1 example. Tataan Pass, Tawi Tawi~~

~~February 21, 1908. Length 72 mm.~~

~~10891. Tilig, Lubang. July 15, 1908.~~

~~Length 98 mm.~~

~~23860 and 23861. Togian Bay, Togian~~

~~Island. November 9, 1909. Length 74 to 76 mm.~~

~~23314 to 23316. Tomahu Island. December~~

~~11, 1909. Length 96 to 102 mm.~~

~~15580 to 15582, 23572, 23514. Tulayan~~

~~Island. September 15, 1909. Length 52 to 91 mm.~~

Bright metallic silvery, with gray to white reflections, paler and lighter below. Iris silvery white. Back and upper surface of head brown. Spinous dorsal and soft dorsal bases, also caudal base, blackish or blackish brown. Caudal pale yellowish subbasally, whitish generally and grayish terminally. Soft dorsal with outer parts contrasted pale or whitish. Other fins all whitish.

Three examples. Port Bois Anchorage, east coast Negroes. ~~At~~ March 31, 1908. Length 29 to 30 mm. Maxillary reaches eye, exposed. A. III, 9.

~~14417, 23544 to 23546, 23913, 23939. Jalise  
Island, November 9, 1909. Length 84 to 101 mm.~~

~~24072. Lara Island, December 15, 1909.  
Length 95 mm.~~

23297. Tataan, Simaluc Island.

February 19, 1908. Length 79 mm.

14 examples. Tataan. February 19, 1908. Length 48 to 87 mm.

24089. Tataan. February 20, 1908. [167.]

Reddish brown stripes, approaching  
vermilion below. Breast pink. First of  
stripes at base of dorsal row of spots,  
interspaces olive; lower interspaces  
pearly. Throat blackish. Iris with  
sapphire reflections. Front of dorsal  
spines with golden shades, rays pink.  
Dusky bar at soft dorsal base,  
turning upward on vertical edge.

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One example. Port Matalvi,  
Luzon. November 22, 1908. Length  
16 mm.

Nine examples. San Antonio  
Beach, Cavite, Luzon. June 27, 1908.  
Length 15 to 30 mm. No adipose eyelids.  
Scales 31. Anal III, 9, I. Back drab,  
otherwise bright silvery white.

Seventeen examples. San Pascual,  
tide pool, March 8, 1909. Length 17 to  
20 mm. Scales 32. A. III, 9, I.

One example. Santa Cruz, Marinduque  
Island. April 23, 1908. Length 36 mm.

Four examples. Taal, Luzon. January  
16, 1908. Length 10 to 21 mm.



15 specimens. Rapurapu Island.  
June 22, 1909. Length 66 to 91 mm.

24102<sup>and</sup> 24103.

Rasa Island, Mantaguin  
Bay, Palawan Island. April 1, 1909.  
Length<sup>59 to</sup> 61 mm.

14767, 14769, 23183 to 23187, <sup>23344.</sup> Romblon.

March 26, 1908. Length 48 to 90 mm.

21063. Sablayan, Mindoro Island.

December 12, 1908. Length 85 mm.

15776. Sacol Island. September 9,  
1909. Length 85 mm.

24000 and 24001. Sitanki Reef.

September 24, 1909. Length 54 to 80 mm.

23134 to 23137. Surigao, Mindanao.

May 8, 1908. Length 71 to 93 mm.

One example. Sandakan, Borneo.

February 29, 1908. Length 35 mm.

One example. Kowloon, China.

August 22, 1908. Length 37 mm.

One example. Kowloon, China.

September 14, 1908. Length 22 mm.

23143. Port Matalvi, Luzon Island.  
November 22, 1908. Length 100 mm.

1 example. Port Palapag. June 2, 1909.  
Length 31 mm.

14604, 23263 to 23267. Port Palapag.  
June 3, 1909. Length 72 to 89 mm.

23780. Port Usow, west of Pinas  
Island. December 17, 1908. Length 80 mm.  
[811.] Alternate dark red brown and  
silvery stripes. Snout and lower head  
blackish. Fins reddish brown. First  
dorsal dusky anteriorly; second  
dorsal with indistinct blackish basal  
bar. Anal with distinct blackish  
basal bar.

Analysis of Species

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- a.' Anal fin with 8 soft rays.
- b.' Scales 32 to 41 in lateral series.
- c.' Pectoral without axillary scale.
- d.' Dorsals and caudal without dark edges.
- e.' Lateral scales 34 or 35; pectoral  $1\frac{1}{3}$ ;  
dark spot in pectoral axil (variably  
A. 8 or 9. parvius.)
- e.<sup>2</sup> Lateral scales 37 to 40; pectoral  $1\frac{1}{2}$ .
- f.' Lateral scales 37; pectoral and  
caudal dusky, former without dark  
spot. haematocheilus.
- f.<sup>2</sup> Lateral scales 40; small black spot  
at pectoral base close before fin  
origin. gelatinosus.
- d.<sup>2</sup> Dorsals and caudal with dark edges;  
pectoral reaches dorsal; obscure blue spot  
at pectoral base. marginalis.
- c.<sup>2</sup> Pectoral with pointed axillary scale.
- g.' Pectoral shorter than head or  $1\frac{1}{8}$  to  
 $1\frac{1}{2}$  in head.
- h.' Pectoral not blackish.
- i.' Lateral scales 30; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ .  
subviridis.
- i.<sup>2</sup> Lateral scales 32 to 35; pectoral  $1\frac{1}{8}$  to  $1\frac{1}{4}$ .

i.<sup>3</sup> Lateral scales 36 to 40.

j.<sup>1</sup> Soft dorsal and anal largely scaleless; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ . cephalus.

j.<sup>2</sup> Soft dorsal and anal scaled; pectoral  $1\frac{1}{2}$ . occidentalis.

h.<sup>2</sup> Pectoral blackish. perusii.

b.<sup>2</sup> <sup>g.<sup>2</sup> Pectoral equals or longer than head; scales large 34 to 36.</sup> Scales 45 in lateral series. sphuyzenii. Tongae.

a.<sup>2</sup> Anal fin with 9 soft rays.

k.<sup>1</sup> Pectoral without axillary scale or if present only rudimentary.

l.<sup>1</sup> Lateral scales 27; pectoral  $1\frac{1}{3}$  to  $1\frac{3}{5}$ ; no dark spot at pectoral origin. dussumieri.

l.<sup>2</sup> Lateral scales 30 to 33; pectoral less than head.

m.<sup>1</sup> no dark spot at pectoral origin.

m.<sup>2</sup> Gray axillary pectoral spot present. poicilus.

k.<sup>2</sup> Pectoral with axillary scale. ferdoni.

n.<sup>1</sup> Lateral scales 30 to 35.

o.<sup>1</sup> no dark spot at pectoral origin.

p.<sup>1</sup> Predorsal scales 18 to 20.

q.<sup>1</sup> Eye 3 in head. strongylocephalus.

q.<sup>2</sup> Eye  $3\frac{1}{2}$  to 4 in head.

r.<sup>1</sup> Pectoral long as head. cunnesus.

r.<sup>2</sup> Pectoral shorter than head. (2258)

s.<sup>1</sup> Maxillary concealed; least depth of caudal peduncle  $2\frac{1}{2}$  in head. engeli.

s.<sup>2</sup> Maxillary exposed; least depth of caudal peduncle  $1\frac{2}{3}$  to 2 in head. tade.

f.<sup>2</sup> Predorsal scales 28; eye  $4\frac{4}{5}$  in head. robustus.

o.<sup>2</sup> Pectoral with dark spot at origin.

t.<sup>1</sup> Lateral scales 31 or 32. georgii.

t.<sup>2</sup> Lateral scales 32 or 33.

n.<sup>2</sup> Lateral scales 35 to 40. tadopsis.

n.<sup>1</sup> Pectoral with dark spot at origin.

v.<sup>1</sup> Maxillary exposed. carinatus.

v.<sup>2</sup> Maxillary concealed (dorsal rays 8 to 10). sordidus.

n.<sup>2</sup> Pectoral without dark spot at origin. affinis.

n.<sup>3</sup> Lateral scales 40 to 43; pectoral shorter than head; dark spot at pectoral origin.

w.<sup>1</sup> Lateral scales 40 to 42.

w.<sup>2</sup> Lateral scales 42 or 43. speigleri.

oshimai.

Mugil parsia Buchanan-Hamilton <sup>2259</sup>

Mugil parsia Buchanan-Hamilton,  
Fishes of Ganges, pp. 215, 380, pl. 27,  
fig. 71, 1822 (type locality, Fresh water  
Rivers of Bengal).  
— Valenciennes, Hist. Nat. Poiss., vol.  
11, p. 144, 1836 (Ganges mouths). —  
Bleeker, Nat. Tijds. Ned. Indië,  
vol. 3, p. (161) 166, 1852 (Timor  
Kupang; Batavia), p. 445 (Banka),  
p. 718 (Tandjong Perikat at Koba,  
Banka); vol. 5, p. 319, 1853  
(Amboina); Verh. Batavia Genoot.  
(hal. Ich. Bengal), vol. 25, p. 48,  
1853 (reference). — Günther, Cat.  
Fish. Brit. Mus., vol. 3, p. 426,  
fig. (head), 1861 (types; Calcutta;  
Karachi). — Day, Fishes of  
Malabar, p. 142, 1865; Fishes of  
India, pt. 2, p. 350, pl. 75, fig. 2,

Belonoperca chabanaudi, new species.

Depth  $2\frac{1}{5}$  to  $3\frac{1}{3}$ ; head  $2\frac{1}{2}$  to  $2\frac{3}{5}$ , width 3 to  $3\frac{1}{8}$ , snout 3 in head from snout tip; eye  $5\frac{1}{4}$  to  $5\frac{1}{3}$ ,  $1\frac{3}{4}$  to  $1\frac{4}{5}$  in snout, subequal with interorbital; maxillary reaches  $\frac{3}{5}$  to  $\frac{2}{3}$  in eye, expansion  $1\frac{1}{5}$  in eye, length 2 to  $2\frac{1}{8}$  in head from snout tip; teeth villiform, in bands in jaws, on vomer and palatines; tongue slender, toothless; preopercle edge strongly denticulate, ridge entire, distinct; opercular spine 3, equidistant, median most posterior; interopercle and subopercle denticulate. Gill rakers 6 + 15, lanceolate, robust, greater than gill rakers ~~in~~ equal  $1\frac{1}{2}$  in eye.

Scales 66 to 68 in lateral line to caudal base and 6 or 7 more



1876 (Calcutta); Fauna British  
India, Fishes, vol. 2, p. 344, 1889.

on latter, 11 scales above lateral line, 34 below, 25 to 27 predorsal, 12 rows across cheek to preopercle ridge. Fins all scabrous, except caudal which with 2 rows at least. Front surface of ventral with small scales on each ray. Scales with 5 or 6 basal radiating striae; apical denticles 20 to 22, each with 4 or 5 transverse series of basal elements; circuli moderate.

D. VIII — IV, 7, I, fourth spine 3 to  $3\frac{1}{5}$  in total head length, first divided ray  $2\frac{3}{5}$ ; <sup>very slender, short and close,</sup> A. II, 8, I, third ray  $2\frac{1}{4}$  to  $2\frac{2}{5}$ ; caudal  $1\frac{1}{2}$  to  $1\frac{2}{3}$ , truncate; least depth of caudal peduncle  $2\frac{3}{5}$  to  $2\frac{3}{4}$ ; pectoral  $2\frac{3}{4}$ ; ventral  $2\frac{1}{8}$  to  $2\frac{1}{5}$ .

Dark eum or chocolate brown, with obscure, ill defined, variable

Mugil cantoris Bleeker, Verh. Batavia. Genoot. (hal. Ich. Bengal), vol. 25, p. (48) 100, pl. 1, fig. 4, 1853 (type locality, Hooghly River, Calcutta); vol. 26, pl. 1, fig. 4, 1857. — Günther, Cat. Fish. Brit. Mus., vol. 3, p. 430, 1861 (copied). — Kner, Reise Novara, Fische, p. 225, 1865 (Madras).

Mugil decim-radiatus Günther, Cat. Fish. Brit. Mus., vol. 3, p. 452, 1861 (on Bleeker).

dark spots on side of head,  
middle of side of body and  
on rays of caudal fin. Iris brown.  
Spinous dorsal dusky, with  
obscure, large, black ocellus  
with irregular border of dull  
blue gray, apparently in front  
and behind. Membranes of other  
vertical fins pale buff, rays darker,  
especially those of caudal which  
with dark spots. Pectoral dull  
brown. Ventral more or less dusky.  
Narrow buff saddle, little  
evident in profile, on front of  
caudal peduncle above behind  
soft dorsal.

Known only from the types,  
obtained in the East Indies.

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Depth  $3\frac{2}{3}$ ; head 4, <sup>width  $1\frac{2}{5}$ .</sup> Snout  $4\frac{1}{2}$   
in head; eye  $3\frac{1}{2}$ , greater than  
snout,  $1\frac{1}{2}$  in interorbital, with  
broad adipose lids; maxillary  
little exposed; upper lip thin,  
only central portion forming part  
of snout end; mouth cleft equals  
half mouth width, which forms  
somewhat obtuse angle; upper  
teeth visible; preorbital bent,  
not notched, serrated.

Scales 34 or 35 in lateral  
series; 11 or 12 transversely, 21  
or 22 predorsal forward to snout.  
Second dorsal and anal with  
small scales. Pectoral without  
elongated axillary scale. Scales  
rather angular, slightly ctenoid,  
each with distinct longitudinal  
line.

D. IV - I, 8, first spine  $1\frac{2}{3}$  in  
head, first branched ray  $1\frac{2}{3}$ , little

2263

behind anal fin origin; a. III, 8 or 9,  
first ray  $1\frac{3}{4}$  in head; least depth  
of caudal peduncle 2; pectoral  
 $1\frac{1}{3}$ , rays 14; ventral rays I, 5,  
fin  $1\frac{2}{5}$  in head; caudal  $3\frac{3}{4}$  in  
rest of fish, emarginate behind.

Golden spot on opercle  
above. narrow dark edge on  
both dorsals, most distinct on  
second. Caudal with yellowish  
base and dark extremity.

Sometimes dark in pectoral axil.  
Length 153 mm. (Day.)

Seas and estuaries of India.

2264

Mugil haematocheilus Schlegel

Mugil haematocheilus Schlegel,  
Fauna Japonica, Poiss., pts. 7-9,  
p. 135, pl. 72, fig. 2, 1845 (type  
locality, Nagasaki). — Richardson,  
Ichth. China Japan, p. 249, 1846  
(seas of China). — Bleeker, Verh.  
Batavia. Genoot. (hal. Ich. Japan),  
vol. 25, p. 15, 1853 (reference); (hal.  
Ichth. Japan), vol. 26, pp. 5, 107,  
1857 (Nagasaki); Act. Soc. Sci.  
Ind. Néerl., vol. 3, no. 3, p. 6,  
1857-58 (Japan). — Steindachner  
and Döderlein, Denks. Akad. Wiss.  
Wien, math.-naturw. Kl., vol. 49, pt. 1,  
p. 266, 1885 (Tokyo). — Franz,  
Abhandl. Kon. Bayer. Akad. Wiss.,  
vol. 4,  
Suppl. Band 1, p. 25, 1910  
(Yokohama; Fukuura).

839

Dules rupestris (Lacépède).

Centropomus rupestris Lacépède, Hist. Nat. Poiss., vol. 4, 1802, pp. 252, 273. Golde l'île de la Réunion.

Dules rupestris Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 119 (Bourbon and Mauritius).

— Valenciennes, Hist. Nat. Poiss., vol. 7, 1831, p. 477 (Mauritius). — Guérin, Iconogr.

Règne Animal, Poiss., 1829-38, p. 8, pl. 6, fig. 2 (Bourbon). — Günther, Cat.

Fishes Brit. Mus., vol. 1, 1859, p. 268 (Fiji, Coaulaw, Amboina, Mauritius). — Peters,

Monatsb. Akad. Wiss. Berlin, 1868, p. 256

(Basesy River, Samar; Burbuen River, Leyte); 1876, p. 437 (Mauritius). —

Günther, Trans. Roy. Soc. London, vol. 168, 1879, p. 471 (Rodriguez). — Meyer, Ann.

Soc. Españ. Hist. Nat. Madrid, vol. 14,

1885, p. 13 (Menado, Celebes; Siao, Sangi).

— Jatzow and Lenz, Abhandl. Senckenberg.



Mugil haematochilus Günther,  
Cat. Fish. Brit. Mus., vol. 3, p. 422,

1861 (China). — Bleeker, Ned.  
Tijds. Dierk., vol. 4, p. 143, 1873

(1874) (reference). — Peters,  
Monatsb. Akad. Wiss. Berlin,

— Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 62, 1901  
1885, p. 923 (Kungpo). — Reeves, (reference)

Journ. Pan Pac. Res. Inst., vol.  
3, no. 2, p. 8, 1927 (reference). —

Lowerby, Nat. Manchuria, vol. 4,  
p. 157, 1930 (Tientsin, Peking,  
Pei Tai Ho, Chin wang Tao). —

Jacot, Sci. Rep. Tôhoku Imp.  
Univ., ser. 4, Biol. vol. 5, no. 4,  
p. 825, December 1930 (Tsing tao;  
variaton).

50 examples. Paluan River, Mindanao Island. December 11, 1908. Length 20 to 55 mm.

27 examples. Port San Pio Quinto, Camiguin Island. November 11, 1908. Length 40 to 81 mm.

8 examples. Pasot River, Mariveles, Manila Bay, Luzon. January 29, 1909. Length 40 to 69 mm.

5398 and 5401. Ragay River, Ragay Gulf, Luzon. March 10, 1909. Length 75 to 78 mm.

5856. San Roque, Leyte Island. July 29, 1909. Length 58 mm.

8806. Santiago River, Sagapan Bay, Luzon. February 20, 1909. Length 67 to 88 mm. 6 examples.

19996. West coast Palani Island, off northern Luzon. November 18, 1908. Length 67 mm.

2266

? Mugil haematochilus Elera, Cat.  
Fauna Filipinas, vol. 1, p. 539, 1895  
(Luzon, Manila).

Liza haematochila Snyder, Proc.  
U. S. Nat. Mus., vol. 42, p. 410, 1912  
(Tokyo) ✓ — Jordan, Tanaka, Snyder,

— Tanaka, Fig. Deser. Fish. Japan, vol.  
8, p. 137, pl. 37, fig. 142, pl. 38, fig. 144,  
pl. 39, fig. 146, pl. 40, fig. 150, October 16,  
1912 (Tokyo).

Bull. St. John's Univ., no. 1, p. 105,  
January 1931 (reference). — Tanaka,  
Journ. Fac. Sci. Univ. Tokyo, sect. 4,  
Zool., vol. 3, pt. 1, p. 50, November 4, 1931  
(reference).

Liza haematocheila Herre, Lignan  
Sci. Journ., vol. 2, no. 3, p. 434,  
July 22, 1932 (Tei Ping).

2266  
? Mugil haematochilus Elera, Cat.  
Fauna Filipinas, vol. 1, p. 539, 1895  
(Luzon, Manila).

Liza haematochila Snyder, Proc.  
U. S. Nat. Mus., vol. 42, p. 410, 1912  
(Tokyo) ✓ — Jordan, Tanaka, Snyder,  
Journ. College Sci. Tokyo, vol. 33, p.  
113, 1913 (reference). — Mori, Hand  
List. Manchur. Vert., p. 177, July  
1927 (compiled). — Chu, Biol.  
Bull. St. John's Univ., no. 1, p. 105,  
January 1931 (reference). — Tanaka,  
Journ. Fac. Sci. Univ. Tokyo, sect. 4,  
Zool., vol. 3, pt. 1, p. 50, November 4, 1931  
(reference).

Liza haematocheila Herre, Lignan  
Sci. Journ., vol. 2, no. 3, p. 434,  
July 22, 1932 (Tei Ping).

below 3 or 4 rows (above and ~

below in young).

latus

h. Upper outer row of teeth conic

or somewhat compressed, of which

latus

(Tokyo

Journ.

113, 191

List. In

1927 (c

Bull. +

13388 to 13390. Bito River,  
Abuyog, ~~between Abuyog and~~ Leyte  
Island. July 26, 1909. Length 175 to 195  
mm.

4 examples. Calugan River, 3 miles  
from mouth near Paluan Bay,  
Mindoro. December 11, 1908. Length 36  
to 47 mm.

1700. Capitanilla, between Cebu and  
Leyte. March 18, 1909. Length 245 mm.  
[D. 5408.]

10802 and 13969. Isabela River,  
Basilan Island. September 11, 1909.  
Length 175 to 208 mm.

5816. Iwahig River and tributaries,  
Puerta Princesa, Palawan. April 4, 1909.  
Length 103 to 111 mm.

5900 to 5909, 19654 and 19655. Malaya  
River, Hinunangan Bay, Leyte Island.  
July 30, 1909. Length 80 to 180 mm.

Mugil (vel Cestraeus?) xanthurus  
Richardson, Ichth. China Japan,  
p. 248, 1846 (type locality, Sea  
of China; Canton).

Mugil so-iny Basilewsky, Nouv.  
Mém. Imp. Soc. Nat. Moscou, vol.  
10, p. 226, pl. 4, fig. 3, 1855 (type  
locality, "Sine Tchiliensis"; Pelsin).  
— Günther, Ann. Mag. Nat. Hist.,  
ser. 7, vol. 1, p. 260, 1898 (Newchwang)  
p. 265 (Liao Basin).

Mugil soiny Günther, Ann. Mag.  
Nat. Hist., ser. 4, vol. 12, p. 243,  
1873 (Shanghai); ser. 4, vol. 13,  
p. 157, 1874 (Chefoo).

5554, 5562, 5564. Malatgas and  
Cannia River, Puerta Princesa,  
Palawan Island. April 4, 1909.  
Length 75 to 185 mm.

4905. Malinao River, Palawan.  
April 2, 1909. Length 70 to 182 mm.

1 example. Pucot River near Mariveles,  
Manila Bay, Luzon. January 29, 1909.  
Length 155 mm.

5867<sup>to</sup>, 5869, 5877, 5880 to 5882. Small  
stream at San Roque, Leyte Island.

July 29-30, 1909. Length 65 to 218 mm. <sup>16 examples.</sup>

5632 and 5633. Stream at Maagnas,  
Lagonoy Gulf, Luzon. June 17, 1909.  
Length 90 to 220 mm. 3 examples.

7644, 11702, 17221, 17223, 21540, 22119.  
Yana River, Legaspi, Luzon. June 7,  
1909. Length 85 to 23 mm.



Mugil sinensis Bleeker, Nederl.  
Tijds. Dierk., vol. 4, p. 143, 1873  
(1874) (reference).

Agonostoma plicatile (not Günther)  
Bleeker, Nederl. Tijds. Dierk., vol.  
4, p. 143, 1873 (1874) (on Basilewsky).

Mugil jayneri Günther, Ann. Mag.  
Nat. Hist., ser. 5, vol. 1, p. 486,  
1878 (type locality, "Tokai, Japan").

~~13560 and~~ 18126. Ambonia stream,  
Ambonia, Dutch East Indies.

December 5, 1909. Length 131 mm.

13561. Ambonia stream. December  
7, 1909. Length 149 mm.

13472. River Uki, Boero Island.  
December 9, 1909. Length 213 mm.

Mugil menada

Liza menada Anonymous, Illustrat.  
Jap. Aquat. Plants Animals, vol. 1,  
 pl. 22, fig. 2, 1931 (northern coasts of Japan).

Tanaka,

Liza akame Tanaka,

Belonoperca new genus.

Type. — Belonoperca Chabanaudi, new species.

Body rather short, robust, compressed. Head large, with elongated or attenuated muzzle. Eye moderate, little before middle in head. Mouth protractile, lower jaw protruding. Maxillary large, well expanded, with long, slender supplemental bone. Teeth fine, villiform, in bands in jaws, on vomer and palatines, none on tongue. Tongue long, slender, free. Interorbital moderate. Cranium, preorbital and maxillary more or less finely rugose striate. Preopercle denticulate. Opercle with 3 spines. Gill rakers moderate. Scales finely roughened, uniformly small. Caudal basally and over rays covered with minute

2270

Liza borealis Popov, Trav. Sta.  
Biol. Sebastopol, vol. 2, p. 80,  
pl. 2, fig. 1, pl. 4, fig. 1, also p.  
149, 1930 (type locality, Japanese  
Seas to Vladivostok).

Victoria, vol. 1, 1872, p. 170 (Melbourne market); London Internat. Exhib. Cat., 1872, p. 133 (Victoria); Proc. Zool. Acclimat. Soc. Victoria, vol. 2, 1873, p. 130 (West Australia). <sup>1</sup>/<sub>m</sub> Schmeltz, Cat. Mus. Godeffroy, no. 5, 1874, p. 24 (Bowen; South Sea). <sup>1</sup>/<sub>m</sub> Castelnau, Proc. Linn. Soc. New South Wales, vol. 3, 1878, p. (350) 372 (Port Jackson). <sup>1</sup>/<sub>m</sub> Schmeltz, Cat. Mus. Godeffroy, no. 7, 1879, p. 40 (Bowen; South Sea). <sup>1</sup>/<sub>m</sub> Hector, Handbooks of New Zealand, 1879, p. 16. <sup>1</sup>/<sub>m</sub> Klunzinger, Sitz. Ber. Akad. Wiss. Wien, math.-naturw. Klasse, vol. 80, pt. 1, 1879, p. 57 (Murray River and King George's Sound). <sup>1</sup>/<sub>m</sub> Elera, Cat. Fauna Filipinas, vol. 1, 1895, p. 483 (Luzon, Manila, Navotas). <sup>1</sup>/<sub>m</sub> White, Sea Fisher. Rep. Thetis, 1898, p. 26 (New South Wales).

Kp...

2271

Depth 5; head  $4\frac{3}{5}$ , width  $1\frac{1}{4}$ .  
Snout  $5\frac{4}{5}$  in head; eye  $5\frac{1}{3}$ , slightly greater than eye,  $2\frac{2}{3}$  in interorbital, adipose lids broad; maxillary exposed, scarcely reaches eye; upper lip moderately thick; mouth cleft in profile  $\frac{2}{3}$  its width; interorbital  $2\frac{1}{5}$  in head, low; preorbital narrow, apparently not notched. Gill rakers  $55+70$ , very slender,  $2\frac{1}{6}$  in eye.

Scales 37 in lateral series to caudal base; 14 transversely, 25 predorsal, 10 or 11 interdorsal. Caudal and pectoral with fine scales basally, apparently none on soft dorsal and anal. No long scale in pectoral axil, in ventral axil  $1\frac{3}{4}$  in fin. Scales stenoid, each with deepened median furrow, forming lateral streaks.

2272

D. VI - I, 8, first spine  $1\frac{3}{5}$  in head, first branched ray  $1\frac{3}{4}$ ; A. III, 8, first branched ray  $1\frac{3}{5}$ ; least depth of caudal peduncle  $2\frac{1}{4}$ ; pectoral  $1\frac{1}{2}$ , rays II, 16; ventral rays I, 5, fin  $1\frac{2}{3}$  in head; caudal  $4\frac{1}{3}$  in rest of fish, little emarginate behind.

In formalin leaden blue, reddish white beneath. Base of each scale dark, forming longitudinal rows of spots. Two dorsals, pectoral and caudal dusky, slightly darker along margin. Ventrals and anal pale, also darker along margin. Length 500 mm. (Tanaka.)

China, Japan. Reported by Elera, perhaps doubtfully, from the Philippines.



2273

krugil gelatinosus Klunzinger

Krugil gelatinosus Klunzinger,  
Archiv Naturg., 1872, p. 35 (type  
locality, Hobson's Bay, South  
Australia), <sup>[= Murray River?]</sup> Setz. Ber. Akad. Wiss.  
Wien, math.-naturw. Kl., vol. 80, pt.  
1, p. 395, pl. 8, figs. 1-a, 1879 (1880)  
(Hobson's Bay). — Macleay, Proc.  
Linn. Soc. New South Wales, vol. 4,  
p. 424, 1880 (reference); vol. 9, p. 41,  
1884 (copied). — McCulloch, Mem.  
Austral. Mus., vol. 5, <sup>pt. 1,</sup> p. 114, June  
29, 1929 (reference).

— Barnard, Ann. South Afr. Mus., vol.  
21, 1927, p. 495, ( Natal coast )  
pl. 21, fig. 1 (copied Day)

Depth  $4\frac{1}{4}$ ; head  $4\frac{1}{4}$ , width  $1\frac{2}{5}$ .  
 Snout  $4\frac{4}{5}$  in head; eye  $4\frac{3}{4}$ ,  
 slightly greater than snout,  
 about 2 in interorbital, adipose  
 lids wide; mouth cleft reaches  
 eye, width  $3\frac{1}{5}$  in head, would  
 nearly form right angle;  
 interorbital  $2\frac{1}{2}$ , low.

Scales 40 in lateral series  
 to caudal base; 12 transversely,  
 about 30? predorsal forward  
 to front of snout. Very few  
 scales shown on bases of soft  
 vertical fins. Ventral with scaly  
 axillary flap  $1\frac{7}{8}$  in fin, no  
 indication of scaly flap at  
 pectoral axil.

D. IV — I, 8, I, second spine  
 2 in head, first branched ray  
 2; A. II, 8, I, first branched ray  
 $1\frac{4}{5}$ ; least depth of caudal

2275

Peduncle  $2\frac{1}{8}$ ; pectoral  $1\frac{1}{2}$ , rays  
II, 15; ventral rays I, 5, fin 2  
in head; caudal  $3\frac{1}{2}$  in rest of  
fish, deeply forked.

Back dark, below whitish.  
Hind pectoral edge narrowly  
pale and dark or blackish &  
small spot at base close below  
fin origin. Length 450 mm.

(Klunzinger.)

Victoria, South Australia?

Mugil marginalis De Vis

Mugil marginalis De Vis, Proc.

Linn. Soc. New South Wales, vol. 9,  
p. 870, 1885 (type locality, Brisbane).

— McCulloch and Whitley, Mem.

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

141, July 7, 1925 (reference). — McCulloch, Mem. Austral. Mus., vol. 5, pt. 1,

p. 114, June 29, 1929 (reference).

Mugil marginatus Saville Kent,

Great Barrier Reef, p. , 1893.

(lapsus for marginalis).

7209 and 7210. Sepurri market.  
November 17, 1908. Both 610 mm.

1427. Macassar. December 26, 1909.  
Length 455 mm.

Depth  $4\frac{3}{4}$ ; head  $4\frac{3}{4}$ . Snout  $4\frac{1}{3}$  in head; orbit  $3\frac{1}{3}$ , greater than snout, adipose lids broad; maxillary exposed; upper lip thin; mouth cleft length half width, mandibular angle little more than right angle; interorbital  $2\frac{3}{4}$  in head; preorbital entire in front, tapers to obtuse point, slightly armed behind.

Scales 40 or 41 in lateral series; 13 transversely, 25 predorsal forward to snout. Pectoral without axillary scale.

D. IV - I, 8, first fin origin midway between snout end and caudal base, opposite eleventh lateral scale; A. III, 8, nearly opposite second dorsal; caudal moderately forked; pectoral

reaches first dorsal, above middle in body depth; ventral origin nearer pectoral than first dorsal.

Body with alternate clear and clouded lines. Dorsals and caudal with broad dark and narrow black edge. Obscure blue spot on pectoral base.

Length 140 mm, (De Vis.)

Queensland.



Mugil subviridis Valenciennes

Mugil subviridis Valenciennes,  
 Hist. Nat. Poiss., vol. 11, p. 115, 1836  
 (type locality, Pondicherry; Ganges River).  
 — Bleeker, Verh. Batavia. Genoot.  
 (Nal. Ich. Bengal), vol. 25, p. 48, 1853  
 (reference). — Günther, Cat. Fish.  
 Brit. Mus., vol. 3, p. 423, fig.  
 (head), 1861 (Madras). — Day,  
 Fishes of Malabar, p. 138, 1865  
 (Cape York). — Günther, Ann.  
 Mag. Nat. Hist., ser. 3, vol. 20,  
 p. 64, 1867 (Cape York). — Day,  
 Fishes of India, pt. 2, p. 353, 1876  
 (type). — Martens, Preuss. Exped.  
 Ost Asien, vol. 1, p. 395, 1876  
 (Manila). — Day, Fauna British  
 India, Fishes, vol. 2, p. 348, 1889  
 (type). — Elera, Cat. Fauna

2130 and 2131 [D. 5318]. China Sea,  
vicinity Formosa ( $21^{\circ}32'N.$ ,  $117^{\circ}46'E.$ ).  
In 340 fathoms. November 5, 1908.  
Length 172 to 175 mm.

4364 [D. 5312]. China Sea, vicinity  
Hong Kong ( $21^{\circ}30'N.$ ,  $116^{\circ}32'E.$ ). In 140  
fathoms. November 1908. Length 70 mm.

Filipinas, vol. 1, p. 537, 1895 (Manila).

— Ogilby, Ann. Queensland Mus.,  
No. 9, <sup>pt. 1</sup> p. 21, 1908 (reference).

— Weber, Siboga Exped., vol. 57,  
Fische, p. 138, 1913 (Lombok). —

[ McCulloch and Whitley, Mem.  
Queensland Mus., vol. 8, pt. 2,  
p. 141, July 7, 1925 (reference).

— Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 4, p.  
243, 1922 (Lombok; Buru; Celebes).

Liza subviridis McCulloch, Mem.  
Austral. Mus., vol. 5, pt. 1, p. 117,  
June 29, 1929 (reference).

944

Genus Lateolabrax Bleeker.

Lateolabrax Bleeker, Verh. Batav.

Genootsch. (Japan), vol. 26, 1857, pp. 4,  
53. Type Labrax japonicus Cuvier,  
monotypic.

Body compressed. Mouth large, protractile.  
Maxillary exposed, with supplemental bone.  
Villiform teeth in jaws and on vomer  
and palatines; tongue smooth.  
Preopercle serrated, with few strong  
antrorse spines on lower edge. Opercle  
ends in spine. Gill membranes separate.  
Pseudobranchial present. Gill rakers  
long and slender. Branchiostegals 7.  
Vertebral 35, of which 18 caudal. Scales  
small, smooth or ciliated. Head  
scaly. Lateral line complete, tubes  
straight and each occupies nearly

Mugil alcocki Ogilby, Ann.  
Queensland Mus., No. 9, pt. 1, p.  
21, 1908 (on Gunther 1861).

51  
on upper surface of head. Vertical  
fins gray, with large blackish  
blotches, at least basally and  
on dorsal and anal, more or  
less as inclined or longitudinal  
dark bars or streaks terminally.  
Paired fins pale or whitish,  
with few dark spots.

Serranidae

Cephalopholis boenack (Bloch).

One, 180 mm., Bangkok.

Serranus fasciatus (Forsk.)

One, 225 mm., Bangkok.

Serranus malabaricus (Schneider).

One, 187 mm., Bangkok.

Gerridae

Gerrus setifer (Buchanan-Hamilton).

One, 92 mm., Kratt.

Randidae

Randus nebulosus (Gray).

2282

Mugil ruthveni Fowler, Proc.  
Acad. Nat. Sci. Philadelphia,  
vol. 70, 1918, p. 3, fig. 1 (type  
locality, Philippines).

Mugil philippinus Fowler, Proc.  
Acad. Nat. Sci. Philadelphia,  
vol. 70, 1918, p. 7, fig. 3 (type  
locality, Philippines).

whole length of scale. Dorsal with 11 or 12 spines, soft fin preceded by 1 or 2 spines and rays 12 to 14, spinous portion longer than soft portion. Anal spines 3, rays 8 or 9, fin short. Caudal emarginate. Pectoral rays 16 to 18, asymmetrical, obtusely pointed, upper rays longest. Ventral behind pectoral, with strong spine, fins close together.

China, Japan.



Depth  $3\frac{2}{3}$  to  $3\frac{4}{5}$ ; head  $3\frac{2}{3}$  to  $3\frac{4}{5}$ , width  $1\frac{1}{2}$ . Snout  $3\frac{4}{5}$  to 4 in head; eye 4 to  $4\frac{1}{2}$ , subequal <sup>with</sup> or slightly less than snout,  $1\frac{4}{5}$  in interorbital; broad adipose lids cover  $\frac{1}{3}$  of iris; maxillary exposed, reaches  $\frac{4}{5}$  or to eye; mouth would form broadly obtuse angle; mouth width  $3\frac{1}{5}$  to  $3\frac{2}{5}$  in head; upper lip width  $\frac{1}{2}$  to  $\frac{2}{3}$  of pupil; interorbital  $2\frac{2}{7}$  to  $2\frac{2}{5}$  in head, broadly convex; lower preorbital edge with few obsolete denticles. Gill rakers 30 to 38 + 46 to 48, slender, fine,  $2\frac{1}{4}$  to  $2\frac{1}{2}$  in gill filaments, which subequal with eye.

Scales 30 in lateral axial series from gill opening to caudal base; 10 or 11 transversely, 19 or 20 predorsal. Axillary pectoral scale

666

Cheilodipterus lineatus (Linnaeus)

- Percu lineata Linnaeus, Syst. Nat., ed. 10, <sup>vol. 2,</sup> 1758, p. 298. Habitat?; ed. 12, 1766, p. 489.
- Forskäl, Descript. Animal., 1777, p. 42.
- Bonnaterre, Tabl. Ichth., 1788, p. 134.
- Gmelin, Syst. Nat. Linn., <sup>vol. 2,</sup> 1789, p. 1319.
- Rüppell, Neue Wirbelth., Fische, 1835, p.

89.

- Chilodipterus lineatus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 248 (Red Sea and Madagascar). — Playfair, Fishes of Zanzibar, 1866, p. 2 (Zanzibar and Uden). — Boulenger, Proc. Zool. Soc. London, 1887, p. 656 (Muscat). — Day, Fauna Brit. India, vol. 1, 1889, p. 502, fig. 151. — Zugmayer, Abhandl. Bayer. Akad. Wiss., vol. 26, pt. 6, 1913, p. 10 (Mekran and Oman).

$3\frac{1}{8}$  in fin. Soft dorsal and anal scaly basally, likewise caudal and pectoral.

D. IV, I, 8, first spine  $1\frac{2}{5}$  to  $1\frac{2}{3}$  in head; first ray  $1\frac{4}{5}$  to  $1\frac{7}{8}$ , V soft dorsal origin over last third of anal base;  
 A. III, 8, I, first ray  $1\frac{4}{5}$  to  $1\frac{7}{8}$ , third spine  $2\frac{4}{5}$  to 3; least depth of caudal peduncle  $2\frac{1}{5}$  to  $2\frac{1}{4}$ ;  
 pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; ventral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; caudal  $3\frac{1}{4}$  to  $3\frac{1}{2}$  in rest of fish, emarginate behind.

Brown, tinged with olivaceous above, below whitish. Fins pale, dorsals and caudal tinged with dusky, sometimes latter with slight dark border behind. India, East Indies, Philippines, Queensland.

23938. Talise Island, north of  
Celebes, November 9, 1909. Length 71 mm.

23532 and 23577. Tidore Island,  
south of Ternate November 25, 1909.  
Length 85 mm.

A. N. S. P., no. 47478. Philippines.  
Commercial Museum of Philadelphia.  
Length 240 mm. Type of Mugil  
ruthveni.

A. N. S. P., no. 47481. Philippines.  
Commercial Museum of Philadelphia.  
Length 237 mm. Type of Mugil  
philippinus.

A. N. S. P., no. 47482. Philippines.  
Commercial Museum of Philadelphia.  
Length 242 mm. Paratype of Mugil  
philippinus.

21125. Cape Kait, Libani Bay, Celebes.  
December 29, 1909. Length 78 mm.

9503 and 23597. Dodepo and Pasejogo  
Islands, Gulf of Boni, Celebes.

November 16, 1909. Length 53 to 67 mm.

24037. Labuandata Bay, Gulf of  
Boni, Celebes. December 18, 1909. Length  
90 mm.

23981. Limbe Strait, Celebes.

November 11, 1909. Length 66 mm.

23445. Dowarra Island, Gillolo.

December 2, 1909. Length 83 mm.

23104. Powati Harbor, Makiyan Island.

November 28, 1909. Length 70 mm.

23694 and 23695. Gamomo Island.

December 3, 1909. Length 60 to 62 mm.

2286

Mugil trichilus Vaillant and Sauvage

Mugil trichilus Vaillant and  
Sauvage, Rev. Mag. Zool., ser. 3,  
vol. 3, p. 287, 1875 (type locality,  
Hawaiian Islands). — Fowler,  
Bull. Bishop Mus., no. 22, p. 32,  
1925 (Samoa); Mem. Bishop  
Mus., vol. 10, p. 123, 1928 (type  
of Mugil caldwelli; Hawaiian  
Islands; Tongatabu; Fiji;  
Tahiti).

Preopercle serrated, with strong  
antrorse spines on lower edge.  
Opercle with strong spine. Gill  
membranes separate. Pseudobranchiae  
present. Gill rakers very short.  
Branchiostegals 7. Lower pharyngeals  
united. Vertebral 25, of which 14  
caudal. Scales rather large, strongly  
ciliated. Head scaly, maxillary and  
mandible naked. Lateral line complete,  
tubes with ascending tubule extending  
to end of scale. Dorsal with 13 or 14  
spines, rays 9 to 11, spinous part  
much longer than soft, which scaly  
basally. Anal with 3 spines and 5  
rays, scaly basally. Caudal rounded.  
Pectoral with 13 or 14 rays, rounded,  
subspherical. Ventral with strong  
spine, placed behind pectoral base.



2287

Mugil caldwelli Fowler, Proc.  
Acad. Nat. Sci. Philadelphia,  
1900, p. 524, pl. 19, fig. 4 (type  
locality, Samoa). — Jordan and  
Seale, Bull. Bur. Fisher., vol.  
25, p. 217, 1905 (note).

Mugil belcartii (not Günther)  
Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, 1900, p. 500 (Hawaii);  
1903, p. 743 (same materials).

Eastern Indian and Western Pacific Oceans. This genus and its genotype have so great a superficial resemblance to certain small scorpaenoids that they have repeatedly been referred to them.

Depth  $3\frac{3}{5}$  to  $4\frac{1}{5}$ ; head  $3\frac{1}{4}$  to  $3\frac{3}{4}$ , width  $1\frac{1}{2}$  to  $1\frac{3}{4}$ . Snout  $3\frac{3}{4}$  to  $3\frac{2}{3}$  in head; eye 4 to  $4\frac{1}{8}$ , with moderately broad adipose lids, scarcely or not developed in young; maxillary concealed, exposed in young,  $3\frac{1}{2}$  to  $3\frac{3}{4}$  in head; mouth as viewed below would form obtuse angle; interorbital  $2\frac{1}{3}$  to  $2\frac{2}{3}$ , broadly convex; lower preorbital edge finely denticulate. Gill rakers 32 to 37 + 44 to 65, fine,  $\frac{3}{4}$  gill filaments, which equal eye.

Scales 32 to 35 in lateral series to caudal base; 10 or 11 transversely, 13 to 16 predorsal forward to head. Soft dorsal and anal scaly. Pectoral with pointed axillary basal scale. Scales

with 5 to 10 marginal basal striae.  
 D. IV - I, I, 7, first spine  $1\frac{1}{2}$  to  $1\frac{3}{5}$  in head, first branched ray  $1\frac{1}{5}$  to  $1\frac{3}{5}$ ; A. III, I, 8, first branched ray  $1\frac{9}{10}$  to  $2\frac{1}{10}$ ; caudal equals head, deeply emarginate; least depth of caudal peduncle  $2\frac{1}{3}$  to  $2\frac{1}{2}$ ; pectoral  $1\frac{1}{8}$  to  $1\frac{1}{4}$ ; ventral  $1\frac{1}{2}$  to  $1\frac{3}{5}$ .

Dull olivaceous brown, scarcely paler below. No dark spot at pectoral origin.

Polynesia, Hawaii. In my "Fishes of Oceania" the distribution is given wrongly as "India, East Indies, Melanesia." This statement applies to the species following or Mugil speigleri.

U. S. N. M., no. 82810. Fiji. 2290  
Wilkes Exploring Expedition.  
Length 160 mm.

U. S. N. M., no. 82959. Tahiti.  
Wilkes Exploring Expedition.  
Length 90 to 95 mm. Three  
examples.

U. S. N. M., no. 83230. Tongatabu.  
Wilkes Exploring Expedition.  
Length 145 mm.

A. N. S. P., no. 9841. Samoa.  
Dr. H. C. Caldwell. Length 132 mm.  
Type of Kingil caldwelli.

or lowest dark longitudinal band extended along the cheek and lower side of the head, a dark blotch subbasal to basal on dorsal posteriorly, also first or uppermost band continuous at humeral region.

(For Siam.)

Red Sea  
Arabia  
Suez  
Cape  
Bangkok  
Siam  
E. I. Indochina  
Phu  
Chama  
Singapore

Trichopodus trichopterus (Pallas).

Thirteen, 53 to 78 mm., Kratt;  
seven, 71 to 90 mm., Bangkok.

Trichopodus pectoralis Regan.

One, 145 mm., Bangkok.

Ophicephalidae

Ophicephalus gachua Buchanan-

Hamilton.

One, 124 mm., Ban Thung Luang.

Scales 44 in lateral line, 4 above. d. 34. a. 21, 7. Head and body above gray brown, obscurely and diffusely clouded with  
surfaces paler.

2291

Mugil cephalus Linnaeus

Mugil cephalus Linnaeus, Syst. Nat.,  
ed. 10, pt. 1, p. 316, 1758 (type locality,  
European Ocean); ed. 12, pt. 1, p. 520,  
1766. — Bloch, Naturg. ausl. Fische,  
vol. 8, p. 165, 1794 ("allen vier Welt-  
theilen"); vol. 9, p. 114, 1795 (Tranquebar).  
~~Mugil cephalus, Bloch, Naturg. ausl. Fische, vol. 8, p. 165, 1794~~  
~~Mugil cephalus, Bloch, Naturg. ausl. Fische, vol. 9, p. 114, 1795~~  
~~Mugil cephalus, Bloch, Naturg. ausl. Fische, vol. 9, p. 114, 1795~~ — Lacepede, Hist. Nat.  
Poiss., vol. 5, pp. 384, 386, 1803 ("toutes  
les mers").

— Kittlitz, Denkw. Reise Mikrones.,  
vol. 2, p. 20, 1858 (Ualan).

— Günther, Cat. Fish. Brit. Mus., vol.  
3, p. 417, 1861 (Mediterranean; Madeira;  
Nile; fresh water lakes Tunis; West  
Africa). — Schmeltz, Cat. Mus. Godeffroy, no.  
7, p. 50, 1879 (Gayndah, Tonga Islands).

Depth  $2\frac{3}{4}$  to  $2\frac{4}{5}$ , head  $2\frac{1}{3}$  to  $2\frac{3}{4}$ , width  
 $2\frac{1}{4}$  to  $2\frac{1}{3}$ . Snout  $4\frac{1}{4}$  to  $4\frac{2}{5}$  in head  
 from snout tip; eye  $2\frac{1}{3}$  to 3, much  
 greater than snout or interorbital;  
 maxillary reaches  $\frac{1}{5}$  in eye, expansion  
 5, length  $2\frac{2}{3}$  to  $2\frac{7}{8}$  in head from  
 snout tip; teeth very minute, in <sup>narrow</sup> bands  
 in jaws, on vomer and palatines and  
 narrow median band on tongue; interorbital  
 $4\frac{1}{3}$  to  $4\frac{2}{5}$ , slightly convex; postero-  
 supraorbital ridge with 1 or 2 serrae;  
 lower preorbital edge with 7 or 8 serrae  
 and nearly same number of less  
 distinct ones on preorbital beel; lower  
 preopercle edge and beel finely serrate,  
 though serrae usually more numerous  
 on former and broad triangular  
 spine at angle of ridge usually  
 moderate. Gill rakers 9 or 10 + 18 to 20,  
 finely lanceolate, 2 to  $2\frac{1}{5}$  in eye; gill



— Macleay, Proc. Linn. Soc. New South  
 Wales, vol. 8, p. , 1883 (Burdabin  
 and Mary Rivers). — Saville-Kent,  
 Great Barrier Reef, p. , 1892  
 (Moreton Bay; Cooktown). — Jenkins,  
 Bull. U. S. Fish Comm., vol. 22, p. 438,  
 1902 (1903) (Honolulu). — Jordan and  
Evermann, Bull. U. S. Fish Comm., vol.  
 23, pt. 1, p. 139, fig. 48, 1903 (1905)  
 (Honolulu; Kailua). — Jordan and  
Seale, Proc. U. S. Nat. Mus., vol. 29, p.  
 521, 1905 (Hong Kong; Shanghai); Bull.  
 Bur. Fisher., vol. 25, ~~521~~ p. 217,  
 1905 (1906) (reference). — Seale,  
 Occas. Pap. Bishop Mus., vol. 6, no. 1, p.  
 17, 1906 (Tahiti, Raiatea, Shortland).  
 — Jordan and Starbs, Proc. U. S. Nat.  
 Mus., vol. 31, p. 516, 1906 (Port Arthur,  
 Manchuria). — Waite, Rec. Canterbury  
 Mus., vol. 1, no. 1, p. 15, April 25, 1907

Ambassis vaivasensis Jordan and Seale,  
 Bull. Bur. Fisher., vol. 25, 1905 (1906), p.  
 254, fig. 47. Vaivase River, Apia, Samoa.  
 — Fowler, Bishop Mus. Bull., no. 22, 1925,  
 p. 32 (Samoa).

(reference). — Jordan and Richardson,  
 Bull. Bur. Fisher., vol. 27, p. 244,  
 1907 (1908) (Calayan); — Snyder,  
 Proc. U. S. Nat. Mus., vol. 42, p. 410,  
 1912 (Misaki; Tokyo). — Seale,  
 Philippine Journ. Sci., vol. 9, p. 61, 1914  
 (Hong Kong). — Boulenger, Cat. Fresh  
 — Tanaka, Fishes of Japan, vol. 3,  
 p. 50, pl. 13, figs. 42 — 45, 1911; vol. 4, p. 51,  
 October 15, 1911 (Tokyo). <sup>August 15,</sup>

Water Fish. Africa, vol. 4, p. 80, fig. 47,  
 1916 (Cape of Good Hope, Port  
 Elizabeth, Durban, Natal). —  
Gilchrist and Thompson, Ann. Durban  
 Mus., vol. 1, no. 4, p. 314, 1917 (reference).  
 — Ashima, Ann. Carnegie Mus., vol.  
 12, nos. 2-4, p. 268, 1919 (Taihoku).  
 — Fowler, Copeia, no. 122, p. 82,  
 November 20, 1922 (Hawaiian Islands).  
 — Ashima, Ann. Carnegie Mus., vol. 13,  
 nos. 3-4, p. 242, April 25, 1922

Ambassis batjanensis Bleeker.

Ambassis batjanensis Bleeker, Nat. Tijds.  
 Ned. Indië, vol. 9, 1855, p. 196. Batjan,  
 in fresh water. — Günther, Cat. Fishes Brit.  
 Mus., vol. 1, 1859, p. 225 (Amboyna). —  
Bleeker, Atlas Ichth. Ind. Néerl., vol. 8,  
 1876-77, p. 138, pl. (76) 354, fig. 4 (Singapore,  
 Java, Bali, Celebes, Sumbawa, Rotti,  
 Batjan, Bura, Amboina). — Károli, Termesz.  
 Füzetek, Budapest, vol. 5, 1882, p. 151  
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 Soc. Españ. Hist. Nat. Madrid, vol. 14, 1885,  
 p. 11 (Manila Bay). — Weber, Zool. Ergebn.  
 Reise Néederl. Ost Indien, vol. 3, 1874, p.  
 409 (Koinino River, Kupang, Timor);  
 Zool. Forschungsr. Austral. Semon, vol. 5,  
 1895, p. 263 (fresh waters Amboina). — Elera,  
 Cat. Fauna Filip., 1895, p. 469 (Rio Pasig, Manila).  
 — Steindachner, Abhandl. Senckenberg. Naturf.  
 Gesell., vol. 25, 1900, p. 415 (Oba River, Halmahera).

(Taihoku; Italy). — Fowler, Bull. Bishop Mus., no. 22, p. 25, 1925 (Honolulu). — McCulloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 140, July 7, 1925 (reference). — Fowler and Ball, Bull. Bishop Mus., no. 26, p. 10, 1925 (Laysan, Lisiansky, Ocean Islands, French Frigates Shoal). — Reeves, Journ. Pan. Pac. Res. Inst., vol. 3, no. 2, p. 8, 1927 (Chingwangtao; Hong Kong). — Fowler, Bull. Bishop Mus., no. 38, p. 9, 1927 (Molokai; Ocean Island; Honolulu). — Evermann and Shaw, Proc. Cal. Acad. Sci., vol. 16, no. 4, p. 114, January 31, 1927 (Hangchow). — Fowler, Mem. Bishop Mus., vol. 10, p. 125, 1928 (Honolulu, Kailua, Molokai, Waikiki, Laysan, Lisiansky, Ocean Island, French Frigates Shoal, Oahu, Guam, Ascension Island);

815

7 examples. Manila Bay. December 11,  
1907. Length 60 to 71 mm.

7 examples. Manila Harbor. December  
30, 1907. Length 55 to 65 mm.

57 examples. Manila Harbor. December  
31, 1907. Length 52 to 70 mm.

7 examples. Manila Harbor. January  
31, 1908. Length 55 to 67 mm.

2 examples. Manila Harbor. March  
16, 1908. Length 61 to 75 mm.

19500 and 19501. Manila Market.  
December 12-18, 1909. Length 71 to 74 mm.

11 examples. Palawan. December 25,  
1908. Length 49 to 63 mm.

145 examples. Philippines. Length 55 to  
60 mm.

19728. Tacloban market. July 25, 1909.  
Length 55 to 63 mm. 2 examples.

1 example. Tara Island, Mindoro Strait.  
December 15, 1908. Length 15 mm.

2295  
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— McCulloch, Mem. Austral. Mus., vol.  
5, pt. 1, p. 114, June 29, 1929 (reference).

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Sci. U. R. S. S., p. 1138, 1930 (Suruga).

— Lowerby, Nat. Manchuria, vol.  
p. 157, 1930 (Pei tao Ho). — Jacot,

Sci. Rep. Tohoku Imp. Univ., ser.  
4, Biol. vol. 5, no. 4, p. 925, December  
1930 (Tingtao; variation). —

Schmidt, Bull. Acad. Sci. U. R. S. S.,

p. ~~925~~ ~~December~~ 107, 1931 (Nagasaki;

Alabama), p. 179 (Sumiyogawa River);

— Anonymous, Illustrat.

Jap. Aquat. Plants Animals, vol. 1,

pl. 21, fig. 1, <sup>1931</sup> — Fowler, Mem. Bishop

Mus., vol. 11, no. 5, p. 324, 1931 (Hawaii).

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p. 19, August 25, 1932 (Annam).

Proc. Acad. Nat. Sci. Philadelphia,  
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 Trans. Pac. Comm. Acad. Sci. U. S.  
 S. S. R., vol. 1, p. 27, 1930 (Kominoto;  
 Japan Sea; Bombay); Bull. Acad.  
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 — Sowerby, Nat. Manchuria, vol. ,  
 p. 157, 1930 (Pei tao Ho). — Jacot,  
 Sci. Rep. Tohoku Imp. Univ., ser.  
 4, Biol. vol. 5, no. 4, p. 925, December  
 1930 (Tingtao; variation). —  
Schmidt, Bull. Acad. Sci. U. R. S. S.,  
 p. ~~925~~ <sup>107</sup>, 1931 (Nagasaki;  
 Abama), p. 179 (Sumiogawa River).  
 — Anonymous, Illustrat.  
 Jap. Aquat. Plants Animals, vol. 1,  
 pl. 21, fig. 1, <sup>1931</sup> — Fowler, Mem. Bishop  
 Mus., vol. 11, no. 5, p. 324, 1931 (Honolulu).  
 — Chevey, Inst. Océan. Indo Chine, 19<sup>e</sup> note,  
 p. 19, August 25, 1932 (Annam).

Common  
 v. Pac. Com  
 up Kur)  
 lagen



p. 224 (Vale, ~~Monograph of the~~, ~~series~~)

Islands, Funafuti) — J. Schmidt, Trans. Pac. Com.

Grad. Sci. USSR., vol. 1, 1930, p. 52, pl. 1, fig. 1 (Kominato, Rip Kiu).

Diapterus argyreus Bleeker, Verlagen

1929, p. 60

Trans. Pa

S. S. R., v

Japan & e

814

second and third dorsal spines  
dusky with age. Lips and  
iris all pale or whitish.

Socotra, Zanzibar, Natal, Mauritius,  
Seychelles, India, Andamans,  
Cochin, Tonkin, East Indies, Philippines,  
China. Many examples we find do  
not have the second membrane of  
the spinous dorsal and the hind caudal  
edge blackish. The second and  
third dorsal spines are variably  
subequal.

22467. Cavite and San Roque markets.

June 27, 1908. Length 67 mm.

5519 and 5536. Malabon market. August 8, 1908. Length 50 to 58<sup>mm</sup>.

1 example. Manila Bay. December 6,

1907. Length 65 mm.

1 example. Manila Bay. December 7,

1907. Length 67 mm.

1 example. Manila Bay. December 8, 1909. Length 53 mm.

451<sup>60</sup> examples. Manila Bay. December 9,

1907. Length 60 to 68 mm. 4 examples.

Mugil crenilabis öur Forsk.,  
descript. Animal., pp. 14, 74, 1775  
(type locality, Red Sea, Arabia).  
Walbaum, Artedi Pisc., vol. 3, p. 227, 1792 (copied).

Mugil öur, Rüppell, Neue Wirbelth.,  
Fische, p. 131, 1835 (Red Sea).

— Klunzinger, Verh. Zool. Bot. Gesell.  
Wien, vol. 20, p. 829, 1870 (Red Sea).

~~Blanchard, Nederl. Tijds. Dierk.,  
vol. 4, pp. 1, 1873 (1874) (China)~~

— Day, Fishes of India, pt. 2, p. 353,  
pl. 75, fig. 3, 1876 (Bombay). —

Klunzinger, Fisch. Roth. Meer., p. 132,  
pl. 10, fig. 1b, 1884. — Steindachner,

and Döderlein, Denks. Akad. Wiss.  
Wien, math.-naturw. Kl., vol. 49, pt. 1,  
p. 266, 1885 (Japan). — Day, Fishes

of India, Suppl. p. 800, 1888  
(reference); Fauna British India,  
Fishes, vol. 2, p. 348, fig. 114, 1889.

above lateral line, 6 below to lower section, 13 to 15 predorsal forming median keel to occiput 2 rows on cheek and preopercular flange naked; caudal covered with small scales basally; dorsals and anals each with basal sheath of scales one row in width. Scales with 4 or 5 short basal radiating striae marginal; circuli moderate.

D. VII, I, 1, V, second spine  $1\frac{1}{5}$  to  $1\frac{1}{4}$  in total head length, first ray 2 to  $2\frac{1}{8}$ ; A. III, 1, V, third spine  $1\frac{2}{3}$  to  $1\frac{3}{4}$ ; caudal  $1\frac{1}{8}$  to  $1\frac{1}{5}$ , forked; least depth of caudal peduncle  $2\frac{1}{2}$  to  $2\frac{2}{3}$ ; pectoral  $1\frac{1}{4}$  to  $1\frac{2}{5}$ ; ventral  $1\frac{1}{2}$  to  $1\frac{2}{3}$ .

Pale brown, paler or whitish below. Median silvery lateral band. Membrane between ~~first~~

~~Ruggley, Proc. Roy. Soc. Tasmania,~~  
~~1890 (1897) (Mary River) —~~  
Rutter, Proc. Acad. Nat. Sci.  
 Philadelphia, p. 70, 1897 (Swatow).  
 — Jordan and Snyder, Annot.  
 Zool. Japon., vol. 3, p. 62, 1901.  
 (reference). — Jordan and Evermann,  
 Proc. U. S. Nat. Mus., vol. 25, p. 332,  
 1903 (Taihoku). — Jordan and Richardson,  
 Mem. Carnegie Mus., vol. 4, no. 4, p.  
 176, 1909 (Yeran, Keelung, Taihoku).  
 — Franz, Abhandl. Kon. Bayer.  
 Akad. Wiss., vol. 4, Suppl. Band  
 1, p. 25, 1910 (Yokohama; Fukuura).  
 — Zugmayer, Abhandl. Kon.  
 Bayer. Akad. Wiss., vol. 26, pt. 6,  
 p. 19, 1913 (Dascht River 100 km.  
 from mouth, Basol River,  
 Balutschistan). — Pellegrin,  
 Bull. Soc. Zool. France, vol. 39,

Depth  $2\frac{1}{2}$  to  $2\frac{2}{3}$ ; head  $2\frac{2}{3}$  to  $2\frac{3}{4}$ ,  
 width  $2\frac{1}{2}$  to  $2\frac{3}{5}$ . Snout  $4\frac{1}{2}$  to 5 in  
 head measured from upper jaw tip; eye  
 3 to  $3\frac{1}{8}$ , greater than snout or  
 interorbital; maxillary reaches  
 opposite front eye edge, expansion 4  
 in eye, length  $2\frac{4}{5}$  to 3 in head from  
 snout tip; teeth extremely minute,  
 barely evident in jaws and on vomer,  
 apparently none on palatines or tongue;  
 interorbital  $\frac{4}{5}$  to  $4\frac{1}{8}$ , slightly  
 convex; usually 5 supraocular serrae,  
 last largest; 5 or 6 serrae on each  
 lower preorbital edge; lower preopercle  
 ridge and edge serrate, hind edges  
 of both entire. Gill rakers 10 + 21,  
 finely lanceolate,  $1\frac{4}{5}$  in eye; gill  
 filaments  $\frac{2}{5}$  gill rakers.

Scales 13 or 14 + 14 to caudal  
 base and 3 more on latter; 4 scales

p. 224, 1914 (Fort Dauphin, Madagascar).  
 — Boulenger, Cat. Fresh Water Fish.  
 Brit. Mus., vol. 4, p. 48 (copied),  
 1916 (Soctro, East Madagascar,  
 Rodriguez). — Oshima, Ann.  
 Carnegie Mus., vol. 12, nos. 2-4, p.  
 270, 1919 (Formosa). — Wu, Contrib.  
 Biol. Lab. Sci. Soc. China, vol. 5,  
 no. 4, p. 78, fig. 62, 1929 (Amoy).  
 — Chu, Biol. Bull. St. John's  
 Univ., vol. no. 1, p. 104, 1931 (reference).  
 — Borodin, Bull. Vanderbilt  
 Marine Mus., vol. 1, art. 3, p. 76,  
 1932 (Papeete, Tahiti).

Mungil deur Pellegrin, Mem. Acad.  
 Malgache, vol. 14, p. 170, fig. 93,  
 1933 (compiled).

Malabar, 1867, p. 16; Proc. Zool. Soc. London, 1870, p. 681 (Andamans). —

Károli, Termesz. Füzetek, Budapest, vol. 5, 1882, p. 151 (Singapore). — Elera, Cat. Fauna Filip., 1875, p. 467 (Cebu).

— Beaufort, Bijdr. Dierk., Amsterdam, 1913, p. 113 (Njanjef and Majalibit Bay, Waigiu).

Chanda dussumieri Cantor, Cat. Malayan Fishes, 1850, p. 6 (Sea of Pinang).

Ambassis vachellii (non Richardson) Peters, Monatsb. Akad. Wiss. Berlin, 1868, p. 255 (Pulo Brani, Singapore).

{ Priopis argyrozona (Kuhl) Valenciennes, Hist. Nat. Poiss., vol. 6, 1833, p. 503. No locality [Java].



Mugil tang Bloch, Naturges. Ausl.  
 Fische, vol. 8, p. 171, pl. 395, 1794  
 (type locality, "guineischen Küste");  
 vol. 9, p. 114, 1795 ("Malayen). —  
Schneider, Syst. Ichth. Bloch,  
 p. 115, pl. 33, fig. 1, 1801 (copied).

Chrysophrys unicolor Duoy and Gaimard,  
Voy. Uranie, Zool., — 1824, p. 229.

~~Chrysophrys unicolor~~ "Isle Birch-Hatchis" (Dick  
Hartog Island, Australia). (Not China  
Sea reference.)

Pagrus unicolor Valenciennes, Hist. Nat.  
Poiss., vol. 6, 1830, p. 162 (types). — <sup>1</sup>/<sub>m</sub>

Richardson, Ichth. China Japan, 1846, p.  
242 (King George's Sound, West Australia).

<sup>1</sup>/<sub>m</sub> Günther, Cat. Fishes Brit. Mus., vol. 1,  
1859, p. 468 (Cape?, New Zealand, Australia).

<sup>1</sup>/<sub>m</sub> Bleeker, Verlagen Kon. Akad. Wetensch.

Amsterdam, vol. 15, 1863, p. 445 (Port  
<sup>1</sup>/<sub>m</sub> Schmeltz, Cat. Mus. Godeffroy, no. 1, 1864, p. 8 (South Seas); no. 2, 1865, p. 6

Jackson) ; <sup>1</sup>/<sub>m</sub> Kner, Reise Novara, Fische,  
1865, p. 85 (New Zealand). <sup>1</sup>/<sub>m</sub> Steindachner,

Sitz. Ber. Akad. Wiss. Wien, math. —

Naturw. Klasse, vol. 53, pt. 1, 1866, p. 432

(Port Jackson). <sup>1</sup>/<sub>m</sub> Schmeltz, Cat. Mus.

Godeffroy, no. 4, 1869, p. 14 (Port Macleay).

<sup>1</sup>/<sub>m</sub> Castelnau, Proc. Zool. Acclimat. Soc.

(South Seas)

Mugil constanciae Valenciennes, Hist.  
Nat. Poiss., vol. 11, p. 107, 1836 (type  
locality, fresh waters Cape of Good  
Hope). — A. Smith, Zool. South Africa,  
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48, 1861 (Cape of Good Hope). —  
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vol. 3, p. 418, fig. (head), 1861  
(Cape of Good Hope). — Weber,  
Zool. Jahrb., vol. 10, pt. 2, p.  
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Cat. Fish. South Africa, vol. 1, p. 136,  
1902 (reference). — Regan, Ann.  
Natal Mus., vol. 1, no. 3, p. 243,  
1908 (Durban Bay).

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(Benkoelen, Sumatra). — Fowler, Proc.  
Acad. Nat. Sci. Phila., 1927, p. 75 (Vigan  
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South Afr. Mus., vol. 21, 1927, p. 644 ( Natal coast).

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(Negros). — Seale, Philippine Journ. Sci., vol. 5, no. 4,  
1910, p. 274 (Sandakan, Borneo).  
Ambassis dussumieri Cuvier, Hist. Nat. Poiss.,  
vol. 2, 1829, p. 181. Malabar. — Valenciennes,  
Hist. Nat. Poiss., vol. 6, 1830, p. 503 (Moluccas);  
vol. 9, 1833, p. 43 (Mauritius and Seychelles).  
— Duoy and Gaimard, Voy. Astralabe, Zool.,  
1834, p. 650, pl. 1, fig. 3 (Amboina and  
Celebes). — Günther, Cat. Fishes Brit. Mus.,  
vol. 1, 1859, p. 225 (China). — Kner, Reise  
Novara, Zool., vol. 1, pt. 5, 1865, p. 41  
(Madras). — Playfair, Fishes of Zanzibar,  
1866, p. 19 (Zanzibar). — Day, Fishes of

Mugil borbonicus Valenciennes, Hist. Nat. Poiss., vol. 11, p. 113, 1836 (type locality, Bourbon). — Günther, Cat. Fish. Brit. Mus., vol. 3, p. 410, 1861 (reference). — Guichenot, notes Ile Réunion, vol. 2, p. 27, 1862. — Martens, Reise Ost Afrika, Decker, vol. 3, pt. 1, p. 141, 1869 (Réunion). — Sauvage, Hist. Nat. Madagascar, Poiss., p. 395, pl. 42, figs. 3-a, 1891 (Madagascar).

Ambassis gymnocephalus (Lacépède).

Lutjanus gymnocephalus Lacépède, Hist. nat. Poiss., vol. 4, 1802, pp. 181, 216. Great Equinoxial Ocean [Indo-Pacific]; vol. 3, 1801, pl. 23, fig. 3.

Ambassis gymnocephalus Bleeker, Atlas Ichth. Ind. Néerl., vol. 8, 1876-77, p. 138, pl. (74) 352, fig. 3 (Sumatra, Pinang, Singapore, Bintang, Banca, Java, Madura, Bali, Celebes, Timor, Batjan, Borneo, Amboina). — Day, Fishes of India, pt. 1, 1875, p. 54, pl. 15, fig. 6 (Cochin); Fauna Brit. India, vol. 1, 1889, p. 489. — Fowler, Proc. Acad. Nat. Sci. Phila., 1905, p. 501 (Baram, Borneo). — Pellegrin, Bull. Soc. Zool. France, vol. 30, 1905, p. 85 (Tonkin). — Steindachner, Denks. Akad. Wiss. Wien, vol. 71, 1907, p. 129 (Tamarida, Sobotra). — Weber, Siboga Exped., vol. 65, 1913, p. 217 (Aljanbar, north Java). <sup>57. Fische,</sup> Fowler and Bean,

Mugil cephalotus Valenciennes, Hist. Nat. Poiss., vol. 11, p. 110, <sup>July</sup> 1836 (type locality, Pondicherry).

— Eydoux and Soleyret, Voy. Bonite, Zool., vol. 1, p. 175, pl. 4, fig. 4, 1841 (Hawaiian Islands). — Cantor, Ann. Mag. Nat. Hist., vol. 9, p. 484, 1844 (Chusan).

— Bleeker, Verh. Batavia. Genoot. (Madura), vol. 22, p. 5, 1849 (Bangcallang, Kammal, Sumanap);

Nat. Tijds. Ned. Indië, vol. 16, p. 277, 1858 (East Indies; diagnosis in bey).

— Günther, Cat. Fish. Brit. Mus., vol. 3, p. 419, fig. (head), 1861 (Amoy, China, Chusan). — Kner, Reise Novara, Fische, p. 224, 1865 (Java, Manila, Australia).

— Bleeker, Ned. Tijds. Dierk., vol. 4, p. 100, 1873 (1874) (~~reference~~) Rossi Zool. Madagascar, p. 143 (reference);

167 examples. Dip net off Kowloon  
Dock (ship's side). September 12, 1908.  
Length 15 to 25 mm.


185 examples. Electric light Kowloon  
Dock. September 14, 1908. Length 15 to 40 mm.



Poiss. Madagascar, p. 45, pl. 2, fig. 1,  
 1874. — ~~Streets~~ Streets, Bull. U. S. Nat.  
 Mus., no. 7, p. 73, 1877 (Honolulu). —  
Peters, Monatsb. Akad. Wiss. Berlin,  
 p. 923, 1880 (Ningpo). — Günther,  
 Rep. Voy. Challenger, vol. 1, pt. 6, p. 33,  
 1880 (Mary River, Tiaro). — Sauvage,  
 Bull. Soc. Philom., Paris, ser. 7, vol. 5,  
 p. 106, 1881 (Swatow). — Macleay,  
 Proc. Linn. Soc. New South Wales, vol.  
 4, p. 416, 1880 (copied); vol. 5, pt. 2,  
 p. 47, 1881 (reference); vol. 7, p. 362,  
 1882 (New Guinea) ✓ — Sauvage.

— Johnston, Proc. Roy. Soc. Tasmania, 1882,  
 p. 122.

— Elera, Cat. Fauna  
 Filipinas, vol. 1, p. 536, 1895 (Luzon,  
 Cavite).

Poiss. Madagascar, p. 45, pl. 2, fig. 1,  
1874. —  Streets, Bull. U. S. Nat.

Mus., no. 7, p. 73, 1877 (Honolulu). —

Peters, Monatsb. Akad. Wiss. Berlin,  
p. 923, 1880 (Ningpo). — Günther,

Rep. Voy. Challenger, vol. 1, pt. 6, p. 33,  
1880 (Mary River, Tiaro). — Sauvage,

Bull. Soc. Philom., Paris, ser. 7, vol. 5,  
p. 106, 1881 (Swatow). — Macleay,

Proc. Linn. Soc. New South Wales, vol.  
4, p. 416, 1880 (copied); vol. 5, pt. 2,

p. 47, 1881 (reference); vol. 7, p. 362,  
1882 (New Guinea). — Sauvage,

*Long* Hist. Nat. Madagascar, Poiss., p. 402,  
pl. 49 B, figs. 2-a, 3-a, 1891

(Madagascar). — Elera, Cat. Fauna  
Filipinas, vol. 1, p. 536, 1895 (Luzon,  
Cavite).

5521. Catbalogan. April 15, 1908.

Length 218 mm.

807

1 example. Gomonno Island, Pitt  
Passage. December 3, 1909. Length 38  
mm.

1 example. Near [D. 5300] in sea weed,  
 $20^{\circ}31'N$ ,  $115^{\circ}49'E$ , China Sea. August  
8, 1908. Length 16 mm.

1 example. Dip net off Kowloon Dock,  
vicinity Hong Kong, China. August 19, 1908.  
Length 23 mm.

6 examples. Dip net off Kowloon Dock  
(ship's side). August 22, 1908. Length  
31 to 35 mm.

3 examples. Electric light off Kowloon  
Dock. September 8, 1908. Length 20 to  
23 mm.

74 examples. Dip net off Kowloon  
Dock (ship's side). September 9, 1908.  
Length 11 to 25 mm.

Mugil cephalotes Martens, Preuss.

Expéd. Ost Asien, vol. 1, p. 395, 1876

(Yokohama). — Schmeltz, Cat. Mus. Godeffroy,  
No. 7, p. 50, 1879 (Gayndah, Tonga Islands).

Mugil gymnocephalus Swainson, Nat.

Hist. Animals, vol. 2, p. 234, 1839

(on Boontah Russell, Fishes of

Coromandel, vol. 2, p. 64, pl. 180, 1803,

type locality, Vizagapatam).

5400, 5402, 5403. Ragay River, Ragay Gulf, Luzon. March 10, 1909. Length 45 to 86 mm. 19 examples.

15 examples. River at Pasacao, Ragay Gulf, Luzon. March 9, 1909. Length 41 to 69 mm.

18 examples. River at Port Dupon, Leyte. March 17, 1909. Length 46 to 62 mm.

24 examples. Santiago River, Pagapas Bay, Luzon. February 20, 1909. Length 45 to 92 mm.

5858. Small stream, San Roque, Leyte. July 29, 1909. Length 35 mm.

2 examples. Tara Island, Mindoro Strait. December 15, 1908. Length 23 mm.

5 examples. Ambonia stream, Ambonia, Dutch East Indies. December 5, 1909. Length 30 to 47 mm.

4 examples. Sabatik Island, Borneo. October 1, 1909. Length 49 to 59 mm.

Mugil japonicus Schlegel, Fauna  
 Japonica, Poiss., pts. 7-9, p. 134, pl.  
 72, fig. 1 ~~numbered~~, 1845 (type locality,  
 Nagasaki). — Richardson, Ichth.  
 China Japan, p. 247, 1846 (seas of  
 China). — Bleeker, Verh. Batavia.  
 Genoot. (hal. Ichth. Japan), vol. 25,  
 p. (15) 41, 1853 (Nagasaki); (hal.  
 Ichth. Japan), vol. 26, p. 5 (Nagasaki);  
 Act. Soc. Sci. Ind. Néerl., vol. 3, no.  
 3, p. 6, 1857-58 (Japan); Ned. Tijds.  
 Dierk., vol. 4, p. 143, 1873 (1874) (reference).  
 — Ashima, Ann. Carnegie Mus., vol.  
 13, nos. 3-4, p. 243, April 25, 1922  
 (Inzampo, Ritabekkan, Ioi,  
 Tamusi, Kwaren River, Anpin,  
 Takao, Toke).

1 example. Nats River. June 18, 1909.  
Length 25 mm.

10 examples. Nanjan River, east Mindoro.  
June 5, 1908. Length 19 to 88 mm.

11935, Nonucan River, Camp Overton,  
Mindanao. August 6, 1909. Length 39 to  
67 mm. 14 examples.

1 example. North end Endeavor Strait,  
Palawan Island. December 22, 1908. Length  
72 mm.

2 examples. Port Jamelo, Luzon. July 13,  
1908. Length 19 to 26 mm.

7 examples. Port Jamelo, two miles up river,  
Luzon. July 13, 1908. Length 20 to 35 mm.

14 examples. Port San Pio Quinto, Camiguin  
Island. November 11, 1908. Length 39 to 53 mm.

1 example. Port San Vicente. November 14,  
1908. Length 48 mm.

6 examples. Pucot River, Mariveles, Manila  
Bay. January 29, 1909. Length 53 to 93 mm.



Mugil macrolepidotus (not Rüppell)  
Richardson, Ichth. China Japan,  
 p. 249, 1846 (China Seas?). —  
Jouan, Mém. Soc. Sci. Nat. Cherbourg,  
 vol. 13 (ser. 2, vol. 3), p. 244, 1866  
 (1868) (Hong Kong).

Mugil bantah Bleeker, Verh. Batavia.  
 Genoots. (Nal. Ichth. Bengal), vol. 25,  
 p. 48, 1853 (on Bantah Russell, Fishes of  
 Coromandel, vol. 2, p. 64, pl. 180, 1803, type  
 locality, Vizagapatam);  
 Nat. Tijds. Ned. Indië, vol. 2, 1856.  
 p. 419, 1856 (Muntok, Banka); vol.  
 13, p. 336, 1857 (Batavia); vol. 16, p.  
 278, 1858 (East Indies; diagnosis  
 in key), p. 407 (Japara, Java); vol.  
 17, p. 143, 1858-59 (Boleling, Bali);  
 Act. Soc. Sci. Ind. Néerl., vol. 5,  
 no. 6, p. 3, 1858-59 (Palembang); Nat.

19359. Mahinog, Camiguin Island,  
between Leyte and Mindanao. August  
3, 1909. Length 55 to 58 mm. 2 examples.

5517, 5525, 5526, 5531, 5532, Malabon  
market. August 8, 1908. Length 53 to  
68 mm.

1 example. Malaga River, Leyte Island.  
July 30, 1909. Length 73 mm.

5558. Malatyo and Canina River,  
Palawan. April 4, 1909. Length 33 mm.

1 example. Mati, Pujada Bay, Mindanao.  
May 15, 1908. Length 53 mm.

1 example. Murcielago Bay, Mindanao.  
August 20, 1909. Length 34 mm.

118 examples. Saboda Bay, Palawan  
Island. December 31, 1908. Length 41 to 58 mm.

6 examples. Hato River, Lagonoy Gulf,  
east coast Luzon. June 17, 1909. Length 32 to  
35 mm.

Tijds. Ned. Indië, vol. 21, p. 138, 1860  
 (Muntok, Banka); vol. 22, p. 239, 1860  
 (Bali); Verslag. Akad. Wet.  
 Amsterdam, vol. 12, p. 32, 1861  
 (Singapore); Ned. Tijds. Dierk.,  
 vol. 2, p. 34, 1865 (Siam), p. 174  
 (reference).

Mugil dobula Günther, Cat. Fish.  
 Brit. Mus., vol. 3, p. 420, fig. (head),  
 1861 (type locality, Perth Water,  
 Western Australia; fresh waters  
 Anceitum). — Kner, Reise Novara,  
 Fische, p. 224, 1865 (Hong Kong). —  
Bleeker, Ned. Tijds. Dierk., vol. 4, p. 143, 1873 (1874) (reference). —  
Günther, Journ. Mus. Godeffroy, vol.  
 6, pt. 11, p. 214, pl. 120, fig. a (text fig.  
 of head), 1877 (Anceitum; Hawaiian  
 Islands). — Castelnau, Proc. Linn.  
 Soc. New South Wales, vol. 3, p. 387, 1878 (Koromoran River)  
 387, 1879 (Port Jackson). — Günther,

6 examples. Barat River, Caniao Pass, Luzon June 15, 1909. Length 25 to 51 mm.

19 examples. Batangas River, Luzon. June 7, 1908. Length 20 to 35 mm.

2 examples. Butuanan Island, east coast Luzon. June 12, 1909. Length 35 to 38 mm.

7 examples. Cuiholo River, Palawan Island. December 29, 1908. Length 28 to 32 mm.

11 examples. Capinuyjungan, Generale Island, east coast Mindanao Island. May 9, 1908. Length 38 to 55 mm.

22 examples. Catbalogan, Samar. April 16, 1908. Length 15 to 25 mm.

46 examples. Cebu dock, Cebu. September 5, 1909. Length 35 to 60 mm.

4 examples. Estero, Sillayan Bay, Pandan Island, Mindoro Strait. December 13, 1908. Length 40 to 42 mm.

Rep. Voy. Challenger, vol. 1, pt. 6, p. 61,  
1880 (Hilo; Hawaii). — Macleay,  
Proc. Linn. Soc. New South Wales,  
vol. 4, p. 414, 1880 (rivers of East Coast;  
Hawkesbury River); vol. 5, pt. 2, p. 47,  
1881 (reference) <sup>— Ogilby, Edible Fish. New South Wales, p. 118, pl. 31, 1893.</sup> Waite, Prelim. Rep.

Pap. Proc. Roy. Soc. Tasmania, 1896 (1897), p.  
74 (Tasmania).

Wien, math.-naturw. Kl., vol. 70, p. 501,  
1901 (Honolulu). — Waite, Rec.  
Austral. Mus., vol. 5, pt. 3, p. 197,  
March 11, 1904 (reference). — Chew,  
Biol. Bull. St. John's Univ., no. 1, p.  
104, January 1931 (reference).

? Mugil camptosiensis Castelnau,  
Mém. Poiss. Afrique Australe, p. 48,  
1861 (type locality, Gamptos River near  
Algoa Bay). — Gilchrist, Cat. Fish.  
South Africa, vol. 1, p. 137, 1902 (reference).

Rep. Voy. Challenger, vol. 1, pt. 6, p. 61,  
 1880 (Hilo; Hawaii). — Macleay,  
 Proc. Linn. Soc. New South Wales,  
 vol. 4, p. 414, 1880 (rivers of East Coast;  
 Hawkesbury River); vol. 5, pt. 2, p. 47,  
 1881 (reference). — Ogilby, Edible Fish. New South Wales, p. 118, pl. 31, 1893,  
 — Waite, Prelim. Rep.  
Thetis, p. 60, 1898 (Lord Howe Island).  
 — Steindachner, Denks. Akad. Wiss.  
 Wien, math.-naturw. Kl., vol. 70, p. 1,  
 501, 1901 (Honolulu). — Waite, Rec.  
 Austral. Mus., vol. 5, pt. 3, p. 197,  
 March 11, 1904 (reference). — Chew,  
 Biol. Bull. St. John's Univ., no. 1, p.  
 104, January 1931 (reference).

name

? Mugil camptosiensis Castelnau,  
 Mem. Poiss. Afrique Australe, p. 48,  
 1861 (type locality, Gamptos River near  
 Algoa Bay). — Gilchrist, Cat. Fish.  
 South Africa, vol. 1, p. 137, 1902 (reference).

~~December 15, 1901. Length 363 mm~~

1881 (refe  
Thetis, p  
— Steind  
Wien, Ma

forked, slender lobes sharply pointed; least depth of caudal peduncle  $2\frac{1}{2}$  to  $2\frac{2}{3}$ ; pectoral  $1\frac{1}{4}$  to  $1\frac{1}{2}$ ; ventral  $1\frac{1}{2}$  to  $1\frac{3}{5}$ .

Pale brown generally, scales on back and upper surfaces dusted with dark brown dots marginally. Sides and lower surfaces with bright silvery white reflections. Median diffuse silvery white band from eye to caudal. Fins all pale or immaculate, except membrane between second and third dorsal spines which dusted with dusky behind second spine, but not black. Iris silvery white.

East Indies, Philippines. Very closely related to Ambassis interrupta, though distinguished by the pale second membrane of the spinous dorsal.



Mugil cunnesius (not Valenciennes)  
Day, Fishes of Malabar, p. 136, 1865.

Mugil waigiensis (not Duoy and Garnard)  
Castelnau, Proc. Zool. Acclimat. Soc.  
Victoria, vol. 1, 1872, p. 140.

~~Myxus caecutiens Günther~~

Myxus caecutiens Günther, Ann.  
Mag. Nat. Hist., ser. 4, vol. 17, p.  
397, 1876 (type locality, Fresh  
water in Rodriguez). — Sauvage,  
Hist. Nat. Madagascar, Poiss.,  
p. 522, 1891 (reference).

# Myxil caecutiens

# Myxil coecutiens Sauvage, Hist. Nat.  
Madagascar, Poiss., pl. 42, figs. 2-2a,  
1891 (type).

# Myxus coecutiens Sauvage, Hist. Nat.  
Madagascar, Poiss., p. 404, 1891  
(reference) (type).

Sparus robinsoni Fowler, Proc. Acad.  
Nat. Sci. Philadelphia, 1925, p. 236  
(Delagoa Bay; <sup>not</sup> Natal).

Inuigil grandis Castelnau, Proc. Linn.  
Soc. New South Wales, vol. 3, p. (353)  
386, 1879 (type locality, Port Jackson).  
— Macleay, Proc. Linn. Soc. New  
South Wales, vol. 4, p. 412, 1880 (East  
coast Australia); vol. 5, pt. 2, p.  
47, 1881 (reference); vol. 6, p. 47,  
1882 (Brisbane to Gipps Land  
Lakes).

~~Mugil hypselosoma Ogilby~~

Mugil hypselosoma Ogilby, Proc.  
Linn. Soc. New South Wales, vol. 22,  
p. 74, <sup>September 17,</sup> 1897 (type locality, ~~New South~~  
~~Wales~~ Port Jackson and Botany  
Bay, New South Wales).

Dules malo Lesson, Voyage Cognille, Zool.,  
vol. 2, pt. 1, June 18, 1830, p. 223. Matawai  
River, Venus Point, Tahiti. — Humbon  
and Jacquinet, Voyage Astrolabe et Zélée,  
Zool., vol. 3, 1853, p. 43, pl. 3, fig. 4 (type).  
— Fowler, Proc. Acad. Nat. Sci. Phila., 1906,  
p. 512 (<sup>part</sup> ~~Asian Islands; Tahiti~~).  
Dules malo Valenciennes, Hist. Nat. Poiss.,  
vol. 7, 1831, p. 479 (type). — Günther, Cat.  
Fishes Brit. Mus., vol. 1, 1859, p. 270 (copied).  
— Gilchrist, Marine Invest. South Afr., vol. 1, 1902,  
p. 705 (copied).

Kuhlia malo Boulenger, Cat. Fishes Brit.  
Mus., vol. 1, 1895, p. 40 (South Africa; Viti  
Levu; Tahiti). — Jordan and Evermann,  
Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903  
(1905), p. 207 (<sup>part</sup> ~~Honduras; Roanoke; Horta;  
Waialua; Hilo; Kailua~~) — Seale and

~~1871 (not Linnaeus) Snyder,  
Bull. U. S. Fish Comm., vol. 22, p. 523,  
1902 (1904) (Waimoa, Huleia,  
Hanapepe Rivers, Kauai, Honolulu,  
Molokai).~~

Mugil albula (not Linnaeus) Snyder,  
Bull. U. S. Fish Comm., vol. 22, p. 523,  
1902 (1904) (Waimoa, Huleia,  
Hanapepe Rivers, Kauai, Honolulu,  
Molokai).

Depth  $2 \frac{2}{5}$  to  $2 \frac{3}{5}$ ; head  $2 \frac{2}{5}$  to  $2 \frac{3}{5}$ , width  $2 \frac{1}{5}$  to  $2 \frac{1}{2}$ . Snout  $4 \frac{3}{4}$  to 5 in head from snout tip; eye  $2 \frac{7}{8}$  to  $3 \frac{1}{8}$ , greater than snout or interorbital; maxillary reaches slightly beyond front eye edge but not to pupil, expansion 4 in eye, length  $2 \frac{1}{2}$  to  $2 \frac{2}{3}$  in head from snout tip; teeth villiform, minute, in narrow bands in jaws, on vomer and palatines and narrow band on tongue medially; interorbital  $3 \frac{4}{5}$  to 4, slightly convex; single postero-supraorbital spine, none below; preorbital edge with 6 spines, ridge with smaller serrae; lower ridge and edge of preopercle denticulate, upper edge and edge entire, spine at angle of ridge little enlarged. Gill rakers 8 + 22,



2314

Depth  $3\frac{1}{2}$  to  $4\frac{2}{3}$ ; head 3 to 4,  
width  $1\frac{1}{2}$  to  $1\frac{3}{5}$ . Snout  $3\frac{3}{4}$  to  $4\frac{1}{8}$   
in head; eye  $3\frac{1}{5}$  to  $4\frac{4}{5}$ , subequal  
with snout, larger in young,  
 $1\frac{2}{5}$  to  $1\frac{3}{4}$  in interorbital, adipose  
lid absent in young, greatly  
developed with age; mouth wide,  
would form obtuse angle, jaws  
about angle; maxillary  $3\frac{1}{8}$  to  $4\frac{1}{8}$   
in head; interorbital  $2$  to  $2\frac{2}{3}$ ,  
broadly convex; preorbital edge  
denticulate in young, serrae  
minute with age. Gill rakers  
 $21$  to  $40 + 45$  to  $83$ , slender,  $2\frac{1}{2}$  to  
 $2\frac{3}{5}$  in eye, fewer in young.

Scales 36 to 40 in median  
lateral series to caudal base;  
13 or 14 transversely, 17 to 28  
predorsal. Soft dorsal and anal  
mostly naked, only very few

minute scales basally; caudal covered densely with small scales; paired fins largely with small scales. Scales with 4 parallel close set basal striae; circuli very fine.

D. IV - I, 8, first spine  $1\frac{7}{8}$  to 2 in head, first branched ray  $1\frac{2}{3}$  to 2; A. III, 8, young II, 9, second spine  $2\frac{1}{2}$  to  $2\frac{4}{5}$ , first branched ray  $1\frac{2}{3}$  to  $1\frac{5}{6}$ ; caudal little longer than head, broadly emarginate behind; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$  in head; ventral  $1\frac{1}{2}$  to  $1\frac{3}{4}$ .

Dark olive or bluish dusky on back, sides and below silvery white. Each row of scales on sides above with darker longitudinal streak. Iris whitish. Dorsal and caudal grayish, other fins whitish. Ventral yellowish.

Circumtropical. In very young the pectoral axillary scale is absent and in rather large examples is quite large.

Besides the material listed below I have also examined a series of American and Mediterranean specimens.

at caudal base median lateral band broken to off set black spot at middle of caudal base, which little less than pupil. Iris whitish or silvered except as crossed by median dark lateral band. Fins all more or less pale or light brownish to whitish; front edge of spinous dorsal dark brown or dusky; upper and lower caudal edges narrowly bordered with dusky, variably rather pale. Very small examples without lowest dark lateral band and ventral median dark band not complete on chest; caudal spot also larger; lower teeth better developed than adult, or with more canines.

Red Sea, Zanzibar, Mozambique, Seychelles, India, Andamans, East Indies, Philippines, Japan, Queensland, Melanesia, Polynesia.

2317

Mugil occidentalis Castelnau

Mugil occidentalis Castelnau, Proc.  
Zool. Acclimat. Soc. Victoria, vol.  
2, p. 135, <sup>May 10,</sup> 1873 (type locality,  
Fremantle, Western Australia).  
— Macleay, Proc. Linn. Soc. New  
South Wales, vol. 4, p. 418, 1880  
(copied); vol. 5, pt. 2, p. 47, 1881  
(reference). — McCulloch, Mem.  
Austral. Mus., vol. 5, pt. 1, p. 114,  
June 29, 1929 (reference).

also muzzle and front of interorbital. Scales with 9 or 10 basal radiating striae; 75 to 118 apical denticles, with 6 or 7 transverse series; circuli fine.

D. VII, I, 12, I, third spine  $1\frac{7}{8}$  to  $2\frac{1}{3}$  in total head length, seventh ray  $1\frac{7}{8}$  to 2; A. III, 8, I, third spine  $3\frac{1}{2}$  to 4, fourth ray  $1\frac{7}{8}$  to  $2\frac{1}{10}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{3}$ , convex behind; least depth of caudal peduncle  $2\frac{1}{3}$  to  $2\frac{1}{2}$ ; pectoral 2 to  $2\frac{1}{8}$ ; ventral  $1\frac{2}{3}$  to  $1\frac{4}{5}$ .

Back brown, below pale or at least under surface usually little lighter in small examples. Fins all uniform brownish. Lateral line little darker than general color.

Iris brown. Young with dark horizontal streak along lower edge of infraorbitals and back along

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

Snout 4 in head, longer than eye; eyes with adipose lids, <sup>maxillary exposed;</sup> interorbital little over 2 in head; teeth above and below very numerous, rather large;

Scales 40 in lateral series to caudal base; 15 transversely, 20 predorsal forward opposite eye center. Each scale with short keel. Soft dorsal and caudal scaly. Pectoral with large axillary scale.

D. IV - I, 8, first spine equals interorbital, opposite eleventh lateral scale, second dorsal origin opposite 23rd lateral scale; A. III, 8, opposite second dorsal; caudal strongly forked; pectoral  $1\frac{1}{2}$  in head, reach tenth lateral scale; ventral origin midway between pectoral base and first dorsal origin.

Silvery, upper parts obscure  
gray. Longitudinal lines well  
marked in preserved examples.  
Large golden blotch behind eye.  
Length 356 mm. (Castelnau.)  
Western Australia.



2320

Mugil perussii Valenciennes

Mugil perussii Valenciennes, Hist.  
Nat. Poiss., vol. 11, p. 116, 1836

(type locality, Vanicolo).

Günther, <sup>Cat. Fish. Brit. Mus., vol. 3, p. 422, 18</sup> Journ. Mus. Godeffroy,  
vol. 5, pt. 1, p. 215, 1876 (copied).

— Jordan and Seale, Bull. Bur.  
Fisher., vol. 25, p. 217, 1905 (1906)  
(reference). — Fowler, Mem. Bishop  
Mus., vol. 10, p. 128, 1928 (compiled).

— Whitley, Journ. Pan. Pac. Res. Inst.,  
vol. 3, No. 1, p. 12, January-March 1928  
(Santa Cruz Islands). — Fowler, Mem.  
Bishop Mus., vol. 11, p. 324, 1931  
(reference).

Mugil perussi Hector, Handbook  
New Zealand, p. 16, 1879.

9709. Una Una Road, Binang Unang,  
Gulf of Tomini, Celebes. November 17,  
1909. Length 148 mm. (Type, Cat.  
no. , U. S. N. M. ) [2047]

13627. Birabirakan Island, off  
Borneo. December 31, 1909. Length  
148 mm. (Paratype.)

(For Paul Chabonard, of the  
Muséum national d'histoire naturelle  
Paris.)

2321

Depth  $4\frac{1}{2}$  in total, body broad and robust. Eyes with broad adipose lids; upper lip thick, without teeth or cilia, appears obliquely truncated below snout; forehead convex.

Scales very large, each with small keel. Soft dorsal and anal scaly. Axillary pectoral scale long, pointed.

D. IV - I, 8; A. III, 8, caudal emarginate; pectoral shorter than head.

Uniform silvery, with golden reflections, but without longitudinal brown lines. Pectoral blackish. Length 161 mm.

(Valenciennes.)

Melanesia. Only known from the original account and Whitley's record.

2322

Mugil ophuysseni Bleeker

Mugil ophuysseni Bleeker, Nat.  
Tijds. Ned. Indië, vol. 16, p. 279,  
1858 (type locality, East Indies;  
diagnosis in key); Act. Soc. Sci.  
Ind. Néerl., vol. 8 (Sumatra), p.  
82, 1859 (Benculen). — Günther,  
Cat. Fish. Brit. Mus., vol. 3, p. 434,  
1861 (copied). — Kner, Reise Novara,  
Fische, p. 226, pl. 9, fig. 2, 1865  
(Java). — Fowler, Journ. Bombay Nat. Hist.  
Soc., vol. 33, no. 1, p. 107, September 30, 1928  
(Bombay).

Mugil ophuysseni Bleeker, Act.  
Soc. Sci. Ind. Néerl., vol. 8 (Sumatra),  
→ p. 12, 1859 (Benculen).

↑ — Weber and Beaufort, Fish. Indo Austral. Archip.,  
vol. 4, p. 240, 1922 (~~East Indies~~).  
(Bengkulu; Salibabu material).  
(Sarevau).

2322

Mugil ophuysseni Bleeker

Mugil ophuysseni Bleeker, Nat.  
Tijds. Ned. Indië, vol. 16, p. 279,  
1858 (type locality, East Indies;  
diagnosis in key); Act. Soc. Sci.  
Ind. Néerl., vol. 8 (Sumatra), p.  
82, 1859 (Benculen). — Günther,  
Cat. Fish. Brit. Mus., vol. 3, p. 434,  
1861 (copied). — Kner, Reise Novara,  
Fische, p. 226, pl. 9, fig. 2, 1865  
(Java). — Fowler, Journ. Bombay Nat. Hist.  
Soc., vol. 33, no. 1, p. 107, September 30, 1928  
(Bombay).

Mugil ophuysseni Bleeker, Act.  
Soc. Sci. Ind. Néerl., vol. 8 (Sumatra),  
p. 12, 1859 (Benculen).

→ Mugil ophuysseni Weber, Siboga Exp.,  
vol. 57, Fische, p. 140, 1913  
(Salibabu).

(Vahlb.)  
A. 25, 57, 58  
Museum of Science  
p. 12, 1859

Batav. Genootsch. (Perc.), vol. 22, 18  
p. 29. Batavia, Java.  
Paramia octolineata Bleeker, Atlas

Sitzungsber. Akad. Wiss. Wien, vol. 80,  
 pt. 1, 1879, p. 343 (Enteavour River,  
 Queensland). — Macleay, Proc. Linn. Soc.  
 New South Wales, vol. 5, 1880, p. 307  
 (North Australia). — Day, Fauna Brit.  
 India, vol. 1, 1889, p. 445 (Madras). —  
Kent, Great Barrier Reef, 1893, pp. 281, 369  
 (Queensland). — Weser, Zool. Forschungen,  
 Austral. Semon, vol. 5, 1895, p. 262  
 (Thursday Island, Queensland). —  
Elera, Cat. Fauna Filip., vol. 1, 1895, p. 457  
 (Luzon, Calapan, Marinduque, Samar). —  
Jordan and Evermann, Proc. U. S. Nat. Mus.,  
 vol. 25, 1903, p. 340 (Formosa). —  
Pellegrin, Bull. Soc. Zool. France, vol. 30,  
 1905, p. 83 (Baie d'Along, Tonkin). —  
Evermann and Seale, Bull. Bur. Fisher.,  
 vol. 26, 1906 (1907), p. 78 (Bulan). —  
Seale, Philippine Journ. Sci., vol. 5, no. 4,  
 1910, p. 275 (Sandakan, Borneo). —

2323

Depth  $3\frac{4}{5}$  to 4; head  $3\frac{4}{5}$  to 4, width  $1\frac{1}{2}$  to  $1\frac{3}{5}$ . Snout  $3\frac{7}{8}$  to 4 in head; eye  $3\frac{4}{5}$  to 4, equals snout,  $1\frac{7}{8}$  to 2 in interorbital, broad adipose lids cover iris  $\frac{1}{3}$  in front and behind; mouth width 3 in head, as seen below would form obtuse angle; upper lips rather broad, width  $3\frac{1}{5}$  in eye; maxillary slightly visible when mouth closes; interorbital 2 to  $2\frac{1}{5}$  in head, broadly convex; lower preorbital edge minutely serrated. Gill rakers 31 + 43, finely lanceolate,  $1\frac{3}{5}$  in gill filaments or  $1\frac{3}{4}$  in eye.

Scales 32 to 34 in axial lateral series to caudal base; 12 transversely, 17 or 18 predorsal. Axillary pectoral scale  $2\frac{4}{5}$  in fin. Soft vertical fins densely covered with minute



2324

scales. Scales with 6 basal radiating striae; apical borders finely fringed; circuli minute.

D. IV - I, 7, I, first spine  $1\frac{4}{5}$  in head, first branched ray  $1\frac{4}{5}$ , soft dorsal origin over first third of anal base; A. III, 8, I, first branched ray  $1\frac{3}{5}$  to  $1\frac{2}{3}$ ; least depth of caudal peduncle 2; caudal  $3\frac{2}{5}$  to  $3\frac{1}{2}$  in rest of fish; large, emarginate behind; pectoral  $3\frac{4}{5}$  to  $4\frac{1}{8}$ , reaches slightly beyond first dorsal origin; ventral  $1\frac{1}{2}$  to  $1\frac{3}{5}$  in head.

Back olive brown, sides and below whitish. Iris gray. Fins pale brown, edges of dorsal and caudal dusky, others paler. Pectoral with small neutral dusky spot at origin.

Though until recently only known from the East Indies the two Bombay examples seem to differ from Weber and Beaufort's description only in a few less lateral scales, possibly due to their rather small size.

A. N. S. P., two examples.  
Bombay, Prof. F. Hallberg.  
Length 158 to 160 mm.

Genus Synagrops Günther.

Synagrops Günther, Rep. Voy. Challenger, vol. 22, 1887, p. 16. Type Melanostoma japonicum Steindachner and Döderlein, monotypic.

Melanostoma (non Schiner 1860, Stål 1872) (Döderlein) Steindachner and Döderlein, denkschr. Akad. Wiss. Wien, vol. 48, 1884, p. 5. Type Melanostoma japonicum Steindachner and Döderlein, monotypic.

Parascombrops Alecock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, 1889, p. 296. Type Parascombrops pellicatus Alecock, monotypic.

→ Macullochina (Jordan) Jordan and Jordan, Mem. Carnegie Mus., vol. 10, no. 1, 1922, p. 44. Type Synagrops serratospinosa Smith and Radcliffe, orthotypic.

{ Hypoclydonia Goode and Bean, Ocean. Ichth., 1895, p. 236. Type Hypoclydonia bella Goode and Bean, monotypic.

One example. Basud River in  
fresh water, Luzon. January 15,  
1909. Length 104 mm. Adipose eyelids  
rather narrow. Scales 37. Pectoral  
 $1\frac{1}{10}$  in head, axillary scale  $2\frac{1}{5}$  in  
fin. A. III, 9, V.

23487. Kayoa Island. November 29, 1909.  
Length 95 mm.

9773 and 23468. Maitara Island.  
November 26, 1909. Length 100 to 107 mm.

23153 to 23156, 23348. Makyau Island.  
November 29, 1909. Length 105 to 112 mm.  
(23156 male with buccal organ.)

24012. Tara Island. December 15, 1909.  
Length 95 mm.

Mugil tongae Günther

2328

Mugil tongae Günther, Rep. Voy.  
Challenger, vol. 1, pt. 6, p. 58,  
1880 (type locality, Tongatabu);  
Journ. Mus. Godeffroy, vol. 7,  
pt. 15, p. 217, 1881 (type). —  
Jordan and Seale, Bull. Bur.  
Fishes, vol. 25, p. 217, 1905  
(reference). — Fowler, Mem.  
Bishop Mus., vol. 10, p. 126, 1928  
(compiled).

Genus Centrogenys Richardson.

Centrogenys Richardson, Ann. Mag. Nat. Hist. London, vol. 9, 1842, p. 120. Type Centropristis scorpinoidea Cuvier, monotypic.

Myriodon Barneville, Rev. Zool. Soc. Cuv., 1847, p. 133. Type Scorpaena vaigiensis Duoy and Gaimard, monotypic.

Gennadius Jordan and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 37.

Type Sebastes stoliczkae Day, monotypic.

Rhabdosebastes Fowler and Bean, Proc. U.S. Nat. Mus., vol. 62, 1922, p. 60.

Type Sebastes stoliczkae Day, orthotypic.

Body compressed. Mouth large and protractile. Maxillary exposed, with supplemental bone. Jaws with bands of villiform teeth; vomer and palatines with teeth; tongue smooth. Front nostril with fringed tentacle.



2329

Depth 4; head  $3\frac{1}{2}$ . Snout very broad; eye with broad adipose lids; maxillary narrowly exposed; lips thin; mouth cleft nearly 2 in width; mouth angle as seen below slightly more than right one; interorbital little over  $2\frac{1}{2}$  in head.

Scales 45 in lateral series; 16 transversely, 26 predorsal forward to snout.

D. IV - I, 8, origin of spinous fin midway between snout tip and caudal base, origin over thirteenth lateral scale, soft dorsal origin over 27th lateral scale; A. III, 8; pectoral fin reaches eleventh lateral scale.

Coloration uniform. Length 165 mm. (Günther.)

Polynesia.

Mugil dussumieri Valenciennes

Mugil dussumieri Valenciennes, Hist. Nat. Poiss., vol. 11, p. 147, 1836 (type locality, Bombay; Coromandel). — Bleeker, Journ. Ind. Archip., vol. 2, p. (633) 637, 1848 (Bima, Sumbawa); Verh. Batavia. Genoot. (Madura), vol. 22, p. 5, 1849 (Bangcallang); (hal. Ich. Bengal), vol. 25, p. 48, 1853 (reference); Nat. Tijds. Ned. Indië, vol. 13, p. 339, 1857 (Batavia; Bima, Sumbawa). — Day, Fishes of India, pt. 2, p. 352, pl. 74, fig. 4, 1876; Fauna British India, Fishes, vol. 2, p. 347, 1889. — Stead, Proc. Linn. Soc. New South Wales, vol. 31, p. 60, 1906 ( ); Add. Fauna New South Wales, p. ~~42~~<sup>7</sup>, 1908<sup>7</sup>; Edible Fishes of New South Wales, p. 42, 1908. — Weber, Nova Guinea,

— Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 55 (Aparri).

— Beaufort, Bijdr. Dierk. Amsterdam, 1913, p. 113 (Mirdika River, Batu Merah River, Amboina; Kauli, Buru).

~~Ambassis vachelli (non Richardson) Peters, Monatsb. Akad. Wiss. Berlin, 1868, p. 255 (Pulo Bruni, Singapore).~~

vol. 5, pt. 2, p. 243, 1908 (Tawarin  
River and Merauks River mouth,  
North New Guinea); vol. 9, pt. 4, p. 569,  
1913 (Sermowai River mouth). —  
McCulloch, Rec. Austral. Mus.,  
vol. 13, no. 4, p. 126, fig. 1, April 12,  
1921 (type of Mugil stevensi; Madras).

↑ — Weber and Beaufort, Fishes Indo Austral.  
Archip., vol. 4, p. 235, 1922 (Singapore; Bagan api api,  
Seli; Stagen, Balikpapan, Kota Bharu, Java Sea, Batavia,  
Amurang; Kamboh; Loui; Butan; Celebes; Sammer; New Guinea).  
141, July 1, 1925 (reference). —

Fowler, Bull. Bishop Mus., no. 22,  
p. 7, 1925 (Guam); Mem. Bishop

Mus., vol. 10, p. 122, 1928 (New  
Guinea) ✓ Handoubera Treubia,

— McCulloch, Mem. Austral. Mus., vol. 5,  
pt. 1, p. 115, June 29, 1929 (reference).

{ Proc. Acad. Nat. Sci. Philadelphia, vol.  
79, p. 263, 1927 (Orani; type of Mugil  
lepidopterus); Journ. Bombay Nat. Hist. Soc.,  
vol. 33, no. 1, p. 57, September 30, 1928 (Bombay);

vol. 5, pt. 2, p. 243, 1908 (Tawarin River and Merauks River mouth, North New Guinea); vol. 9, pt. 4, p. 569, 1913 (Sermowai River mouth). —

McCulloch, Rec. Austral. Mus., vol. 13, no. 4, p. 126, fig. 1, April 12, 1921 (type of Mugil stevensi; Madras).

— McCulloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 141, July 7, 1925 (reference). —

Fowler, Bull. Bishop Mus., no. 22, p. 7, 1925 (Guam); Mem. Bishop

Mus., vol. 10, p. 122, 1928 (New Guinea). — Hardenberg, Treubia, vol. 13, livr. 1, p. 124, July 1931 (Rokan River mouth, Sumatra).

{ Proc. Acad. Nat. Sci. Philadelphia, vol. 79, p. 263, 1927 (Orani; type of Mugil lepidopterus); Journ. Bombay Nat. Hist. Soc., vol. 33, no. 1, p. 57, September 30, 1928 (Bombay);

round  
5 row  
4

Pearson, Ceylon Administrat. Rep., 1922, p. Fl. <sup>↑</sup>

→ 1921 (type  
— McCull  
Queenstan

141, July  
Fowler,  
p. 7, 1925

[ Mus., no  
Guinea )

h. Upper outer row of teeth round  
obtuse molars, of which 4 or 5 row

vol. 13, t  
(Robson  
Proc. Acad.

820

depth of caudal peduncle  $2\frac{3}{5}$  to  $2\frac{2}{3}$ ;  
pectoral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ ; ventral  $1\frac{2}{5}$  to  $1\frac{2}{3}$ .

Pale brown, scales on back all dusted broadly marginally with dusky. Median axial silvery white band from head to caudal base. Iris silvery white. Fins pale, rays of soft verticals more or less dusted with dull dusky terminally and membrane between second and third dorsal spines terminally dusky to blackish. Often preserved examples show each caudal lobe slightly darker medially.

East Indies, Philippines, Polynesia.  
We have united Ambassis vaiwasesis Jordan and Seale with this species. Bleeker given the predorsal scales as 17, a number usually a little greater than most of our specimens. Bleeker

Mugil albula (not Linnaeus)  
Buchanan-Hamilton, Fishes of Ganges,  
p. 147, 1822.

~~Mugil subviridis (not Valenciennes?)  
Günther, Cat. Fish. Brit. Mus., vol.  
3, p. 423, fig. (head), 1861 (Madras).~~

Mugil ventricosus Richardson, Ichth.  
China Japan, p. 249, 1846 (type  
locality, Chinese Sea; Canton Low  
figure). — Günther, Cat. Fish.  
Brit. Mus., vol. 3, p. 410, 1861  
(reference). — Bleeker, Ned. Tijds.  
Dierk., vol. 4, p. 143, 1873 (1874).  
(reference). — Macleay, Proc. Linn.  
Soc. New South Wales, vol. 5, pt. 2, p.  
48, 1881 (reference). — Chu, Biol.  
Bull. St. John's Univ., no. 1, p. 105,  
January 1931 (reference).



had, however, but 2 specimens 73 to 79  
mm. long.

Mugil parmatius Cantor

2333

Mugil parmatius Cantor, Journ.  
Asiatic Soc. Bengal, vol. 18, pt. 2,  
p. 1076, 1849 (1850) (type locality,  
Sea of Pinang).

— Bleeker, Nat. Tijds. Ned. Indië,  
vol. 16, p. 275, 1858 (~~East Indies~~  
diagnosis in key). — Günther,  
Cat. Fish. Brit. Mus., vol. 3, p.  
410, 1861 (reference). — Duncker,  
Mitteil. Naturh. Mus. Hamburg,  
vol. 21, p. 166, 1903 (1904) (reference).

strong spine at angle and lower edge entire. Opercle ends in spine. Gill membranes separate. Pseudobranchiae very small or absent. Gill rakers long. Branchiostegals 7. Vertebral 25, of which 14 caudal. Scales moderate, denticulated. Head scaly. Dorsals and anals move in scaly sheath, soft fins covered with scales. Lateral line complete, extends nearly to end of caudal fin; tubes straight and confined to basal half of exposed part of scale. Dorsal with 7 spines, soft fin with spine and 12 to 15 rays, spinous fin shorter than soft fin. Anal with 3 spines and 9 to 13 rays. Caudal rounded. Pectoral rays 16, subsymmetrical, rounded. Ventral with strong spine and scaly pointed flap at base, below pectoral base,

Tringil subviridis (not Valenciennes)  
Günther, Cat. Fish. Brit. Mus.,  
vol. 3, p. 423, fig. (head), 1861  
(Madras).

565

Depth  $2\frac{2}{5}$  to  $2\frac{1}{2}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{4}$ ,  
width 2 to  $2\frac{1}{8}$ . Snout  $2\frac{1}{4}$  to  $2\frac{2}{5}$   
in head; eye 3 to 4,  $1\frac{2}{5}$  to  $1\frac{3}{4}$  in  
snout, 1 to  $1\frac{1}{5}$  in interorbital; maxillary  
reaches  $\frac{4}{5}$  to eye or  $\frac{1}{5}$  in eye, expansion  
 $1\frac{4}{5}$  to 2 in eye, length  $2\frac{3}{5}$  to  $2\frac{3}{4}$  in  
head; 4 front upper and 6 front lower  
canines, rather small or moderate molars  
biserial in each jaw; interorbital  $3\frac{1}{4}$   
to  $3\frac{2}{5}$ , well convex; narrowest preorbital  
width less than or nearly equals eye.

Gill rakers 7+11, short, lanceolate,  
 $\frac{1}{2}$  of gill filaments, which  $1\frac{3}{4}$  in eye.

Scales 54 to 56 in lateral line to  
caudal base and 6 to 8 more on latter;

Mugil javanicus Bleeker, Nat.  
Tijds. Ned. Indië, vol. 3, p. 701,  
1857 (nomen nudum) (type locality  
evidently Batavia).

Genus Argyrops Swainson Cu 130

Argyrops Swainson, Nat. Hist. <sup>unala</sup> Cu, vol. 2, 1839, p. 221. Type Sparus spinifer Forskäl, monotypic.

Paragyrops Tanaka, ~~Fishes of Japan~~, <sup>Zool. Magazine Tokyo,</sup> vol. 24, no. 330, - 111, p. 141. ~~In~~ ~~vol. 24, no. 24, 1916, p. 425, pt. 117, fig. 343.~~

Type Paragyrops edita Tanaka, monotypic.

Jaws with front row of teeth conic incisors and laterally 2 or 3 rows of rounded teeth immediately follow; 2 rows of teeth with rounded crowns along sides of each jaw, most interior small and above biserial. Pseudobranchiae present.

Branchiostegals 6. Air bladder simple. Pyloric appendages 5. Scales moderate, present on cheeks. Dorsal with 11 or 12 spines of which 4 greatly elongated and filamentous. Anal spines 3.

Mugil sundanensis Bleeker <sup>2336</sup>

Mugil sundanensis Bleeker, Nat.  
Tijds. Ned. Indië, vol. 4, p. 265,  
1853 (type locality, Benculan,  
Sumatra; Batavia); vol. 7, p. 313,  
1854 (Bantem); vol. 10, p. 347,  
1856 (Rio, Bintang); vol. 11, p. 419,  
1856 (Muntok, Bangka); vol. 12,  
p. 293, 1856 (Boleling, Bali); vol.  
16, p. 275, 1858 (East Indies; diagnosis  
in key); Act. Soc. Sci. Ind.  
Néerl., vol. 3, no. 6, p. 2, 1857-58  
(Sinkawang, Borneo). — Günther,  
Cat. Fish. Brit. Mus., vol. 3, p.  
425, 1861 (copied). — Day, Fishes  
of Malabar, p. 381, 1865. —  
Bleeker, Verslag. Akad. Wet.  
Amsterdam, ser. 2, vol. 2, p. 293,  
1868 (Rio, Bintang). — Martens,



Lateolabrax japonicus (Cuvier).

Labrax japonicus Cuvier, Hist. Nat. Poiss.,  
vol. 2, 1828, p. 85. Japan. — Richardson,  
Ichth. China Jap., 1846, p. 222 (Hong Kong,  
Canton, Peiho, Chusan, Japan). — Bleeker,  
Verh. Batav. Genootsch., no. 7, vol. 26, 1857, p. 23 (Nagasaki).  
Percalabrax japonicus Schlegel, Fauna  
Japon., Poiss., pt. 1, 1842, p. 2, pl. 2, fig. 1  
(Japan).

Percalabrax japonicus Günther, Cat. Fishes  
Brit. Mus., vol. 1, 1859, p. 71 (China, Japan).  
— Kner, Reise Novara, Zool., vol. 1, pt. 5,  
1845, p. 13 (Shanghai). — Günther, Ann.  
Mag. Nat. Hist. London, ser. 4, vol. 12, 1873,  
p. 240 (Shanghai). — Martens, Preuss.  
Exp. Ost-Asien, vol. 1, 1876, p. 385 (Yokohama,  
Nagasaki, Shanghai). — Günther, Rep. Voy. Challenger, vol. 1, 1880, p. 63 (Inosima; Inland Sea).  
— Steindachner and  
Döderlein, Denks. Akad. Wiss. Wien, vol.  
47, pt. 1, 1883, p. 228, pl. 4, fig. 3 (Tokyo).  
— Elera, Cat. Fauna Filip., vol. 1, 1895, p. 458

Preuss. Exped. Ost Asien, vol. 1,  
p. 395, 1876 (Singapore). ✓ —

— Macleay, Proc. Linn. Soc. New South Wales,  
vol. 7, p. 362, 1882 (New Guinea).

(Banka, Sumatra, Java, Bali,  
Timor). — Elera, Cat. Fauna  
Filipinas, vol. 1, p. 537, 1895  
(Luzon, Pasig, Laguna de Bay).

— Jordan and Seale, Bull. Bur.  
Fishes, vol. 25, p. 217, 1905 (1906)  
(reference); vol. 26, p. 11, 1906 (1907)  
(Cavite). — Evermann and Seale,

Bull. Bur. Fishes, vol. 26, p.  
59, 1906 (1907) (Bacau); Proc.  
U. S. Nat. Mus., vol. 31, p.  
1906 (Manila). — Weber, Siboga

Exped., vol. 57, Fische, p. 138, 1913  
(Macassar; Hammer Island).

Preuss. Exped. Ost Asien, vol. 1,  
 p. 395, 1876 (Singapore). ✓ —  
Weber, Zool. Ergebn. Ned. Ost  
 Ind., vol. 3, p. 451, 1894 (Borneo,  
 Banka, Sumatra, Java, Bali,  
 Timor). — Elera, Cat. Fauna  
 Filipinas, vol. 1, p. 537, 1895  
 (Luzon, Pasig, Laguna de Bay).  
 — Jordan and Seale, Bull. Bur.  
 Fisher., vol. 25, p. 217, 1905 (1906)  
 (reference); vol. 26, p. 11, 1906 (1907)  
 (Cavite). — Evermann and Seale,  
 Bull. Bur. Fisher., vol. 26, p.  
 59, 1906 (1907) (Bacau); Proc.  
 U. S. Nat. Mus., vol. 31, p. ,  
 1906 (Manila). — Weber, Siboga  
 Exped., vol. 57, Fische, p. 138, 1913  
 (Macassar; Hammer Island).

<sup>T</sup>  
Bamber, Journ. Lin. Soc. London, Zool., vol.  
1915, p. 480 (Sudanese Red Sea).

p. 395,  
Weber,  
Ind., v.  
Bambaa

(Luzon, Butuan, Orion). — Ishikawa  
and Matsuura, Prelim. Cat. Fishes  
Mus. Tokyo, 1897, p. 57 (Hokkaido). —  
Fowler, Proc. Acad. Nat. Sci. Phila., 1907,  
p. 249 (Iwuyga, Japan).

~~Lateolabrax japonicus~~ Bleeker, Verh. Batavi-  
sche Genootsch. (Japan), vol. 76, 1857, p. 53 (Nagasaki).

Lateolabrax japonicus Boulenger, Cat. Fishes  
Brit. Mus., vol. 1, 1895, p. 123 (Chefoo,  
Shanghai, Hae-yoe, China, Amoy,  
Chusan, Formosa). — Jordan and Snyder,  
Proc. U. S. Nat. Mus., vol. 23, 1901, p. 353  
(Tokyo); Annot. Zool. Japon., vol. 3, 1901,  
p. 72 (Yokohama, Nagasaki, Shimoda).

— Jordan and Seale, Proc. U. S. Nat. Mus.,  
vol. 29, 1905, p. 521 (Shanghai). — Jordan  
and Starks, Proc. U. S. Nat. Mus., vol. 31,  
1906, p. 517 (Port Arthur, Manchuria).

Jordan and Richardson, Mem. Carnegie

Mugil brachysoma Bleeker, Nat.  
Tijds. Ned. Indië, vol. 9, p. (392)  
 399, 1855 (type locality, Gambung  
 River, Pasuruan, Java); vol. 17  
 18, p. 388, 1857 (Timor deli);  
Ned. Soc. Sci. Ind. Néerl., vol. 3,  
 no. 9, p. 4, 1857-58 (Trussan,  
 Sumatra).

Mus., vol. 4, no. 4, 1909, p. 183 (Keerun);  
Proc. U. S. Nat. Mus., vol. 37, 1910, p. 429  
(Yokohama, Tokyo, Wakanoura, Kurume,  
Chikugo River, Matsushima, Kagoshima,  
Nagasaki, Hiroshima, Onomichi,  
Tsuyama, Hakodate, Kobe). — Snyder,  
Proc. U. S. Nat. Mus., vol. 42, 1912, p. 413  
(Tokyo, Misaki, Kagoshima). — Jordan  
and Metz, Mem. Carnegie Mus., vol. 6,  
no. 1, 1913, p. 30 (Fusan, Korea). —  
Jordan and Thompson, Mem. Carnegie  
Mus., vol. 6, no. 4, 1914, p. 248 (Shimonoseki  
and Shinabara). — Izuka and  
Matsuura, Cat. Zool. Spec. Tokyo Mus.,  
1920, p. 154 (Hokkaido). — Jordan and  
Hubbs, Mem. Carnegie Mus., vol. 10, no. 2,  
1925, p. 234 (Sapporo, Tokyo, Kobe,  
Kagoshima Bay, Mikawa Bay, Miyazu,  
Fukuoka, Lake Kasumigaura).

~~Mugil valenciennesii Bleeker~~

Mugil valenciennesii Bleeker,  
Nat. Tijds. Ned. Indië, vol. 16,  
p. 277, 1858 (type locality,  
East Indies; diagnosis in key).  
— Günther, Cat. Fish. Brit.  
Mus., vol. 3, p. 410, 1861 (name).



Centrogenys vaigiensis (Duroy and Yainard).

Scorpaena vaigiensis Duroy and Yainard,  
 Voy. Uranie, Zool., 1824, p. 324, pl. 58,  
 fig. 1. Vaigie.

Myriodon vaigiensis Günther, Cat. Fishes  
 Brit. Mus., vol. 1, 1859, p. 175 (Port Essington,  
 Freycinet's Harbor, Australia). — Kner,  
 Reise Novara, Zool., vol. 1, pt. 5, 1865, p.  
 38 (Singapore). — Bleeker, Atlas Ichth.  
 Ind. Néerl., vol. 7, 1873-76, pl. (49) 297,  
 fig. 1. — Günther, Rep. Voy. Challenger,  
 vol. 1, 1880, p. 38 (between New Guinea and  
 Australia). — Károli, Termesz. Füzetek,  
 Budapest, vol. 5, 1882, p. 150 (Singapore).  
 — Meyer, Ann. Soc. Españ. Hist. Nat.  
 Madrid, vol. 14, 1885, p. 10 (Cebu). —  
Day, Fishes of India, Suppl., 1888, p. 747  
 (correction); Fauna Brit. India, vol. 1,  
 1889, p. 461, fig. 145. — Elera, Cat. Fauna  
 Filip., vol. 1, 1895, p. 464 (Cebu).

Mugil nepalensis Günther, Cat. Fish.  
Brit. Mus., vol. 3, p. 424, 1861 (type  
locality, Nepal). — Oshima, Annot.  
Zool. Japon., vol. 11, no. 1, p. 19, March  
31, 1926 (Haihō, Haman). — Chu,  
Biol. Bull. St. John's Univ., no. 1, p.  
104, January 1931 (reference).

Mugil planiceps (part) Günther,  
Cat. Fish. Brit. Mus., vol. 3, p. 428,  
1861.

Füzetek, Budapest, vol. 5, 1881, p. 155  
 (Java; Sarangoon). <sup>1</sup>/<sub>m</sub> Klunzinger,  
 Fische Roth. Meer., 1884, p. 48, pl. 5 fig. 1  
 b (premaxillary groove), pl. 13, fig. 3.  
<sup>1</sup>/<sub>m</sub> Sauvage, Hist. Nat. Madagascar,  
 Poiss., 1891, p. 242 (Red Sea, Seychelles,  
 Malabar, Vanicolo, Waigiu, Oualan). <sup>1</sup>/<sub>m</sub>  
Kent, Great Barrier Reef, 1893, p. 369  
 (Queensland). <sup>1</sup>/<sub>m</sub> Weber, Siboga Exped.,  
 vol. 57, 1913, p. 272 (Salibabu Island). <sup>1</sup>/<sub>m</sub>  
Fowler, Mem. Bishop Mus., vol. 10, 1928,  
 p. 147. <sup>1</sup>/<sub>m</sub> Exempte. Cotabato, Mindanao.  
 no date. Length 8 mm.

59 examples. Duwasa River, Luzon.

February 25, 1909. Length 58 to 120 mm.

22085. Isabela, Basilan Island.

September 11, 1909. Length 74 mm.

32 examples. Iwahig River and tributary,

Puerta Princesa, eastern Palawan Island.

April 4, 1909. Length 45 to 93 mm.

~~Mugil meyeri Günther~~

Mugil meyeri Günther, Ann. Mag.  
Nat. Hist., ser. 4, vol. 9, p. 439,  
1872 (type locality, Macassar, Celebes).  
— Weber, Zool. Ergebn. Ned. Ost  
Ind., vol. 3, p. 451, 1894 (Celebes).  
— Elera, Cat. Fauna Filipinas, vol.  
1, p. 537, 1895 (Luzon, Laguna de  
Bay).

Mugil laevis (Buchanan-Hamilton)  
Day, Fishes of India, pt. 2, p. 352,  
1875 (name in synonymy) (type  
locality, Hooghly at Calcutta).

1411. Jan. Keke Island, Flores Sea.  
December 21, 1909. Length 243 mm.

<sup>4788</sup>  
(D. 5517).  $10^{\circ}36'N.$ ,  $117^{\circ}27'E.$ , China  
Sea, vicinity Formosa. Length 240  
mm. [Though the record book gives  
D. 5317, as we find D. 5517 between  
D. 5316 and D. 5318 in dredging  
and Hydrographic Records of the  
U. S. Fisheries Steamer Albatross,  
Bur. Fisher. Document, No. 741, 1910,  
p. 44, we assume D. 5517 to have  
been intended.]

Mugil stevensi Ogilby, Ann.  
Queensland Mus., no. 9, p. 19, 1908  
(type locality, Gold Island,  
Rockingham Bay).

Mugil lepidopterus Fowler, Proc.  
Acad. Nat. Sci. Philadelphia, vol. ,  
p. 9, fig. 4, 1918 (type locality,  
Philippines).

Mugil anpinensis Ashima, Ann. Carnegie  
Mus., vol. 12, nos. 3-4, p. 245, pl. 11, fig. 1,  
April 25, 1922 (type locality, Anpin  
near Tainan, Formosa; Kwaren River  
at Kada, Kwarenko).

12309. 5635, Maagnas, Lagonoy Gulf, Luzon. 823  
June 17, 1909. Length 65 to 98 mm.

9 examples.

1575. 9 examples. Mahinog River, Camiguin  
Island, between Leyte and Mindanao.  
August 3, 1909. Length 50 to 95 mm. ←

64 examples. Malaga River, Leyte.  
July 30, 1909. Length 58 to 105 mm.

4 examples. Malinao River, Palawan.  
April 2, 1909. Length 57 to 79 mm.

17 examples. Saboda Bay, Palawan.  
December 1908. Length 56 to 72 mm.

1 example. Saboda Bay. December 31,  
1908. Length 67 mm.

23595. Lato River, Lagonoy Gulf, east  
coast Luzon. June 15, 1909. Length 47 to 79  
mm. 7 examples.

21790. Nonusan River, Camp Oberton,  
Mindanao Island. August 6, 1909. Length  
40 to 70 mm. 37 examples.

Depth  $3\frac{3}{5}$  to 4; head  $3\frac{1}{4}$  to 4,  
width  $1\frac{2}{5}$  to  $1\frac{3}{4}$ . Snout  $3\frac{1}{5}$  to  
 $3\frac{1}{2}$  in head; eye  $3\frac{3}{5}$  to 4, broad  
adipose lids cover  $\frac{1}{4}$  of iris in  
front and behind; mouth width  
3 to  $3\frac{1}{5}$  in head; upper lip  
rather broad, width  $\frac{1}{3}$  of eye;  
maxillary exposed, reaches eye;  
interorbital  $2\frac{1}{6}$  to  $2\frac{1}{2}$  in head,  
nearly level; lower preorbital  
edge finely serrated. Gill rakers  
27 to 30 + 45 to 48, finely  
lanceolate,  $1\frac{1}{4}$  in gill filaments.

Scales <sup>27 to</sup> 30 in lateral axial  
series to caudal base; 10 or 11  
transversely, 20 to 23 predorsal.  
Axillary pectoral scaly flap  
rudimentary or absent. Soft  
vertical fins finely scaled. Scales



with 6 to 9 basal radiating striae;  
74 to 86 weak apical denticles  
with 8 to 10 transverse series of  
basal elements; circuli fine.

D. IV - I, 8, I, first spine  
 $1\frac{2}{5}$  to  $1\frac{4}{5}$  in head, first branched  
ray  $1\frac{1}{2}$  to  $1\frac{7}{8}$ , soft dorsal  
origin over middle of anal  
base; A. III, 9, I, third spine  $2\frac{1}{2}$ ,  
first ray  $1\frac{3}{5}$  to  $1\frac{4}{5}$ ; caudal 1 to  
 $1\frac{1}{10}$ , well emarginate behind;  
least depth of caudal peduncle  
2 to  $2\frac{1}{3}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{3}{5}$ ,  
rays I, 12; ventral rays I, 5,  
fin  $1\frac{1}{3}$  to  $1\frac{1}{2}$  in head.

Back olive brown, below  
whitish. Iris slate gray. Fins  
brownish, lower whitish and  
no dark spot at pectoral origin.

2345

India, Ceylon, Andamans, Singapore,  
East Indies, Philippines, China,  
Queensland, New South Wales,  
Micronesia. Mugil parmatius  
Cantor seems to be the present  
species, as may be seen from  
the following condensed from  
the original description:

2346

Depth 4; head 4. Snout 4 in head; orbit 4, subequal with snout,  $1\frac{1}{2}$  in interorbital, with adipose eyelids; mouth very small; above and below minute setaceous teeth; preorbital truncate, denticulate below.

Scales 27 in lateral series; 10 transversely. Soft vertical fins half covered with small scales. Pectoral without elongated axillary scale.

D. IV - I, 8, first spine strong, about  $1\frac{2}{3}$  in head; A. III, 9; two central caudal rays but slightly shorter than rest; least depth of caudal peduncle 2 in head; pectoral rays 14; ventral I, 5.

Head above and back brownish olive. Cheek and upper half of sides silvery greenish gray. Lower half of sides and abdomen

silvery white. On upper part of  
 preopercle triangular bluish  
 black spot, behind which  
 indistinct amber-colored spot.  
 Rest of preopercle and opercle  
 pale silvery blue, faintly  
 vermiculated with brown. Iris  
 silvery gray. Dorsal and caudal  
 membranes pale gray, minutely  
 dotted with brown. Length  
 121 mm. (Cantor.)

2348

Four examples. Basud River, Luzon,  
in fresh water. January 15, 1909.  
Length 153 to 165 mm.

One example. Buena Vista, Guimaras  
Island. January 14, 1909. Length 195 mm.

6702. Manila market. August 4, 1908.  
Length 242 mm. Depth 4. Scales 28.

6627 to 6631. Hakoda Bay in river,  
Palawan. December 31, 1908. Length 181  
to 194 mm. Adipose eyelids well developed.  
Scales 31, ~~no~~ no axillary pectoral scale.  
Pectoral  $1\frac{1}{4}$  in head. A. III, 9, I.

Seven examples. Tayjan, Mindoro.  
June 5, 1908. Length 32 to 36 mm.  
No adipose eyelids. Scales 28. Pectoral  
with axillary scale.

20 examples. Sandakan Bay, Borneo.  
March 2, 1908. Length 43 to 54 mm.

9248. Nonucan River, Mindanao. 2349

August 6, 1909. Length 280 mm.

Depth  $3\frac{1}{2}$ . Scales 28.

Six examples. Puot River,

Mariveles, Luzon. January 29, 1909.

Length 56 to 118 mm. Adipose eyelids  
well developed, hardly developed  
in smallest. No axillary pectoral  
scale. Scales 28 to 31.

caudal base. In thin band row of circular silvery spots, 9 from opercle to postanal and then continued as solid line to caudal base. Below yellow band another of silvery and median line of belly yellow. Under side of head and throat white. Entire body and head golden orange. Lips blackish. Iris black and gold. Side of jaws silvery. Purple line of back continued to snout. Dorsals orange, membranes crimson, spinous dorsal with crimson line at base, remainder pale yellow. Anal with crimson basal line, rest pink. Caudal and pectoral hyaline. Ventral crimson.



A. N. S. P., no. 47483. Philippine  
Islands. Commercial Museums of  
Philadelphia. Length 206 mm.  
Type of Mugil lepidopterus.

A. N. S. P., two examples. Bombay.  
Prof. F. Hallberg: Length 100 to 110  
mm.

Body rather elongate, compressed. Eyes large. Jaws with bands of villiform teeth and strong canines in front; small or villiform teeth on vomer and palatines. Preopercle with angle produced, edge and ridge serrate or entire. Gill rakers 10 to 12 on lower branch of first arch. Scales rather large, cycloid, deciduous, about 30 in lateral line to caudal base. Scales on head very small. Dorsal with 9 spines, soft fin with spine and 8 or 9 rays. Anal with 2 spines and 6 or 7 rays. Caudal forked. Vent normal.

Bathypelagic.

2351

Mugil poecilus Day

Mugil poecilus Day, Proc. Zool. Soc.  
London, p. 33, 1865 (type locality,  
Cochin, India); Fishes of Malabar,  
p. 140, pl. 9, 1865; Fishes of India,  
pt. 2, p. 351, pl. 75, fig. 4, 1876.

Mugil poecilus Day, Fauna British  
India, Fishes, vol. 2, p. 345, 1889.

Mugil cunnambo Day, Fishes of  
Malabar, p. 141, fig. (head), 1865  
(type locality, Malabar).

which 13 caudal. Scales small, 100 or more in lateral line. Cheeks and opercles scaled, rest of head, jaws and chin bare. Opercle, preopercle, infraorbitals and suborbital regions more or less rugose. Dorsal spines 8, <sup>strong,</sup> rays 14 to 16. Anal spines 2 or 3, rays 12 to 14. Caudal rounded. Pectoral rounded. Ventral with strong spine, below pectoral base and fins close together.

East Indies, China, Japan.

Depth  $4\frac{1}{5}$ ; head  $4\frac{1}{8}$ , width  $1\frac{2}{5}$ .  
 Snout 5 in head; eye 4, greater than snout,  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in interorbital, with moderately broad adipose lids; maxillary exposed; upper lip thin, forms front part of snout; mouth cleft equals half mouth width; fine teeth above, minute ones below; interorbital low, nearly flat; preorbital angularly bent, serrated.

Scales 30 to 33 in lateral series; 10 or 11 transversely, 20 to 20 predorsal forward to front of snout. Soft vertical fins finely scaled. Pectoral without elongated axillary scale. Scales slightly stenoid.

D. IV - I, 8, first spine  $1\frac{3}{4}$  in head, first branched ray  $1\frac{1}{2}$ ;  
 A. III, 9, first branched ray  $1\frac{3}{4}$ ;  
 least depth of caudal peduncle  $1\frac{7}{8}$ ;

2352

pectoral  $1\frac{2}{5}$ , rays 15; ventral rays  
I, 5, fin  $1\frac{3}{5}$  in head; caudal  $3\frac{7}{8}$   
in rest of fish, emarginate  
behind.

Grayish, shot with purple  
and silver, becoming lighter on  
sides and below, each scale  
usually with deep central black  
spot. Fins stained with gray.  
Length 610 mm. (Day)

Western coast of India.

Mugil jerdoni Day

2353

Mugil jerdoni Day, Fishes of India,  
pt. 2, p. 352, 1875 (type locality,  
India; Fauna British India,  
Fishes, vol. 2, p. 346, 1889.

Mugil sundanensis (not Bleeker)  
Day, Fishes of Malabar, p. 138,  
1865.

p. 525 (Kotosho, Apia, Mindoro). —  
Beaufort, Bijdr. Dierk., Amsterdam,  
 1913, p. 110 (Kajeli, Bouru; Batjan;  
 Buli, Halmahera; Lam-lam, north  
 Waigiu; Eme and Tuba Rivers, West  
 Ceram). — Regan, Proc. Zool. Soc. London,  
 1913, p. 378 (Malay Archipelago and South  
 Pacific; types of Dules leuciscus Jenyns).  
 — Weber, Siboga Exped., vol. <sup>57, Fische</sup> 65, 1913, p.  
 194 (Dammer Island). — Fowler, Bishop  
 Mus. Bull., no. 22, 1925, p. 32 (Samoa), p.  
 37 (Tahiti); — Fowler and Bean, Proc.  
 U. S. Nat. Mus., vol. 71, 1927, p. 14 (Tahiti).



Depth 4; head  $4\frac{1}{2}$ . Snout 7 in head; eye  $3\frac{1}{2}$ , greatly exceeds snout,  $1\frac{1}{2}$  in interorbital, with broad posterior adipose lid; maxillary end exposed; mouth cleft equals half mouth width, which would form somewhat obtuse angle; upper lip moderately thick, forms end of snout; upper teeth distinct; interorbital  $2\frac{1}{4}$  in head, slightly convex; preorbital strongly bent, serrated.

Scales 31 or 32 in lateral line, 10 transversely, 18 predorsal forward to snout. Soft vertical fins densely scaled. Pectoral with <sup>out</sup> elongated axillary scale.

D. IV - I, 8, origin of first fin slightly nearer snout tip than caudal base, stout spines  $1\frac{1}{2}$  in body depth or slightly higher

2355

than second dorsal; A. III, 9, front half before soft dorsal origin, third spine  $2\frac{1}{5}$  to  $2\frac{1}{2}$  in head; caudal rays 15; pectoral rays 16, origin suprmedian in body depth, fin long as head without snout; ventral rays I, 5; least depth of caudal peduncle equals postorbital.

Steel blue along back, silvery white on sides and below. Black spot over eye center. Cheek tinged yellow. Sometimes diffuse dark blue spot on opercle. Dorsals with ends gray. Caudal and pectoral with dark edges. Pectoral with rather indistinct gray spot in axil. Ventral and anal white. Length 153 mm. (Day.)

India. Said to differ from Mugil engelii in the absence of the axillary pectoral scale and stout dorsal spines.

Mugil strongylocephalus Richardson

Mugil strongylocephalus Richardson,  
 Ichth. China Japan, p. 249, 1846  
 (type locality, Hong Kong; Sea of  
 China). — Günther, Cat. Fish.  
 Brit. Mus., vol. 3, p. 425, text fig.  
 (head), 1861 (types; China). —  
Bleeker, Nederl. Tijds. Dierk.,  
 vol. 4, p. 143, 1873 (1874) (reference).  
 — Sauvage, Bull. Soc. Philomath.  
 Paris, ser. 5, vol. 7, p. 106, 1881  
 (Swatow). — Rutter, Proc. Acad.  
 Nat. Sci. Philadelphia, 1897, p. 70  
 (compiled). — Tirant, Serv.  
 Océanogr. Pech. Indo Chine,  
 p. 171, 1929 (Hue). — Chu, Biol.  
 Bull. St. John's Univ., no. 1, p. 104,  
 January 1931 (reference). — Chevey,  
 Inst. Océanogr. Indo Chine,

1 example [D. 5393]. Pangmalan Point, Talajit Island, S. 59° E., 14.8 miles (12° 03' 30" N., 124° 03' 36" E.), between Samar and Masbate. In 136 fathoms.

March 13, 1909. Length 80 mm.

4561 to 4563 [D. 5394]. Panalangan Point, Talajit Island, S. 68° E., 8.1 miles (12° 00' 30" N., 124° 05' 36" E.), between Samar and Masbate. In 153 fathoms.

March 13, 1909. Length 82 to 112 mm.

2325 to 2335, 2437 and 2438 [D. 5396].

Panalangan Point, Talajit Island, S. 78° E., 4.5 miles (11° 57' N., 124° 12' 24" E.), between Samar and Masbate. In 137

fathoms, <sup>March 15, 1909.</sup> length 83 to 213 mm.

31 examples [D. 5397]. Panalangan Point, Talajit Island, S. 78° E., 6 miles (11° 57' 27" N., 124° 10' 42" E.), between Samar and Masbate. In 134 fathoms.

March 15, 1909. Length 80 to 125 mm.

19<sup>e</sup> note, p. 20, August 25, 1932<sup>2357</sup>  
(Annam).

Mugil stronglylocephalus Reeves,  
Journ. Pan Pac. Res. Inst.,  
vol. 3, no. 2, p. 8, 1927 (reference)  
(error).

5 examples [D. 5516]. Point Jagolo.  
Light, S. 80° W., 9.7 miles (8° 46' N., 123°  
32' 30" E.), Mindanao. In 175 fathoms.  
August 9, 1909. Length 105 to 150 mm.

4262 to 4264 [D. 5517]. Point Jagolo.  
Light, S. 83° W., 10.5 miles (8° 45' 30" N.,  
123° 33' 45" E.), Mindanao. In 169 fathoms.  
August 9, 1909. Length 134 to 180 mm.

2215 to 2218 [D. 5519]. Point Jagolo Light,  
S. 71° W., 8.7 miles (8° 47' N., 123° 31' 15" E.),  
Mindanao. In 182 fathoms. August 9,  
1909. Length 142 to 160 mm.

3678 [D. 5441]. San Fernando Point  
Light, S. 87° E., 18.7 miles (16° 38' N., 119°  
57' 18" E.), west coast Luzon. In 186  
fathoms. May 10, 1909. Length 170 mm.

3440 [D. 5542]. Jagolo Light, S. 70° W.,  
13.2 miles (8° 48' 30" N., 123° 35' 30" E.),  
northern Mindanao. In 200 fathoms.  
August 20, 1909. Length 152 mm.

Depth  $4\frac{2}{3}$ ; head  $5\frac{1}{2}$  <sup>width  $1\frac{1}{2}$ .</sup> Snout  $4\frac{9}{10}$

in head; eye 3, greater than snout, about  $1\frac{1}{3}$  in interorbital, with broad adipose lids;

maxillary narrowly exposed; upper lip moderately thick, oblique below snout end; mouth cleft  $2\frac{5}{5}$  in mouth

<sup>1</sup> width, which would nearly form right angle; interorbital  $2\frac{1}{2}$  in head, very convex; preorbital bent, not notched.

Scales 33 in lateral series; 11 transversely; 18 predorsal scales forward to snout.

Soft dorsal and anal scaly. Pectoral with long axillary scale.

D. IV - I, 8, spinous fin origin opposite tenth or eleventh lateral scale, soft dorsal origin opposite 21st lateral scale; A. III, 9, front third before soft dorsal origin;

caudal emarginate; least depth of caudal peduncle rather less than 2 in head; pectoral longer than head snout not included, reaches to or slightly beyond first dorsal origin, inserted somewhat above middle in body depth. (Günther.)

China. Richardson describes the species with bright scales, whole fore part of back forming trunk dark bronze colored.

No spot on pectoral base.

Length 178mm.



Mugil cunnesius Valenciennes

Mugil cunnesius Valenciennes, Hist. Nat. Poiss., vol. 11, p. 114, 1836 (type locality, Moluccas; Malabar; Bombay). — Bleeker, Verh. Batavia. Genoot. (Madura), vol. 22, p. 5, 1849 (Kammal). — Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1082, 1849 (1850) (part; not material). — Bleeker, Nat. Tijds. Ned. Indië, vol. 1, p. 160, 1850 (Banka); vol. 3, p. (445) 454, 1852 (Banka; Batavia, Tegal, Pekalongan, Samarang, Surabaja, Bezaki, Pasuruan; Kammal), p. 717 (Pankalpinang, Banka); vol. 5, p. 544, 1853 (Manuwer Bay, Java); Verh. Batavia. Genoot. (Nal. Ich. Bengal), vol. 25, p. 48, 1853 (reference). Nat. Tijds. Ned. Indië, vol. 7, p. 313,

Dules taeniurus Cuvier.

Dules taeniurus Cuvier, Hist. Nat. Poiss.;  
vol. 3, 1827, p. 114. Java. — Günther,  
Cat. Fishes Brit. Mus., vol. 1, 1859, p. 267  
(Chinese Sea). — Kner, Reise Novara,  
Zool., vol. 1, pt. 5, 1865, p. 47 (Tahiti). —  
Day, Proc. Zool. Soc. London, 1870, p. 682 (Andamans). —  
Meyer, Ann. Soc. Españ. Hist. Nat. Madrid,  
vol. 14, 1885, p. 13 (Siao, Sanga).

Gorgoza, Ann. Soc. Españ. Hist. Nat.  
Madrid, vol. 17, 1888, p. 284 (Manila Bay).

— Jatzow and Lenz, Abhandl. Senckenberg.  
Gesell., vol. 21, 1889, p. 500 (Zanzibar). —  
*Natural*

Elera, Cat. Fauna Filip., 1895, p. 471  
(Luzon, Manila Bay).

Doules taeniurus Quichenot, Notes Ile  
Réunion, vol. 2, 1862, p. 24.

Mormopsis taeniurus Bleeker, Atlas Ichth.  
Ind. Néerl., vol. 7, 1873-76, p. 119 (Java,  
Sumatra, Borneo); vol. 8, 1876-77, pl.  
(67) 345, fig. 5.

1854 (Bantem); vol. 11, p. 385,  
 1856 (Kajeli, Buru), p. 419  
 (Muntok, Banka); Act. Soc. Sci.  
 Ind. Néerl., vol. 1, no. 3, p. 5, 1856  
 (Manado); vol. 1, no. 5, p. 6, 1856  
 (Amboina); vol. 2, no. 7, p. 5, 1857  
 (Amboina); Nat. Tijds. Ned. Indië,  
 vol. 13, p. 56, 1857 (Kajeli, Buru);  
 Act. Soc. Sci. Ind. Néerl., vol. 3, no.  
 9, p. 4, 1857-58 (Trussan, Sumatra);  
 Nat. Tijds. Ned. Indië, vol. 16, p.  
 27, 1858 (East Indies; diagnosis  
 in key); Act. Soc. Sci. Ind.  
 Néerl., vol. 8 (Sumatra), p. 12, 1859  
 (Benculen); vol. 8 (Sumatra 9), p. 8,  
 1860 (Telokbetang, Benculen, Padang);  
 Nat. Tijds. Ned. Indië, vol. 21, p. 138,  
 1860 (Muntok, Banka); Verslagen.  
 Akad. Wet. Amsterdam, vol. 12, p. 64,  
 1861 (Pinang). — Günther, Cat. Fish.

13560, 13562 to 13561; 13901 to 13905,  
 13908 to 13911, 18120, 18122 to 18125, 18127  
 to 18129, 18237 and 18238, 18241, 18243  
 to 18245. Umbona Stream, Umbona,  
 Dutch East Indies. December <sup>5<sup>th</sup></sup> 7, 1909.

Length 62 to 196 mm.

9736 to 9738, 15493, 21217. River  
 Uki, Bouro Island. December 9, 1909.

Length 73 to 212 mm. 17 examples.

19903. Tawao River, Sibuko Bay,  
 Borneo. September 30, 1909. Length 111  
 mm.

Brit. Mus., vol. 3, p. 434, 1861  
 (~~Malay Peninsula~~, Amboyna). —  
~~Day, Fishes of Malabar, p. 136, 1865.~~  
 — Klunzinger, Verh. Zool. Bot.  
 Gesell. Wien, vol. 20, p. 830, 1870  
 (Red Sea). — Day, Fishes of India,  
 pt. 2, p. 349, pl. 74, fig. 3, 1876  
 (Orissa; Bombay). — Klunzinger,  
 Fische Roth. Meer., p. 132, 1884<sup>(part)</sup>.  
Day, Fauna British India, Fishes,  
 vol. 2, p. 342, 1889. — Weber,  
 Zool. Forschungen Austral. Vemon,  
 vol. 5, p. , 1895 ( ).  
 — Duncker, Mitteil. Naturh. Mus.  
 Hamburg, vol. 21, p. 166, 1903 (1904)  
 (Singapore). — Zugmayer, Abhandl.  
 Kon. Bayer. Akad. Wiss., vol. 26,  
 Suppl. Band 6, p. 20, 1913 (Gwadar).  
 — Regan, Trans. Zool. Soc. London,  
 vol. 20, pt. 6, p. 276, 1914 (Mimika)

Mindanao. August 6, 1909. Length 69 to 212 mm. 37 examples.

11438. Pucot River, Mariveles Bay, Manila Bay. January 29, 1909. Length 65 to 184 mm.

5870 to 5876, 5878 to 79. Small stream at San Roque, Leyte Island. July 29, 1909. Length 95 to 175 mm. 20 examples.

~~5636~~, 7266 to 7268, 12308, 12315 and 12316.

Stream at Magnas, Lagonoy Gulf, Luzon. June 17, 1909. Length 38 to 202 mm. 32 examples.

5636. Stream at Magnas. April 4, 1909. Length 98 mm.

7645 to 7648, 1701, 17222, 17224 to 17226,

~~21591, 21592, 22117, 2120, 22121.~~ Juma River, Legaspi. June 7, 1909. Length 70 to 215 mm. 15 examples.

9231 to 9233, 21006. Zamboango River. October 9, 1909. Length 130 to 200 mm.

River, New Guinea). — Pellegrin,  
Bull. Soc. Zool. France, vol. 39,  
p. 224, 1914 (Diego Suarez and  
Mahambo, Madagascar). ✓ Mc

— Barnard, Ann. South Afric. Mus., vol.  
21, pt. 1, p. 304, June 1925 (Delagoa Bay).

(reference). — Fowler, Mem. Bishop  
Mus., vol. 10, p. 123, 1928 (compiled).

— Tirant, Serv. Océanogr. Pêch.  
Indo Chine, p. 171, 1929 (Saigon).

— Hardenburgh, Treubia, <sup>vol. 13</sup> <sup>livr. 13</sup>,  
p. 125, July 1931 (Rokan River mouth,  
Sumatra). — Chevey, Inst. Océan.

Indo Chine, 19<sup>e</sup> note, p. 19, August  
25, 1932 (Cochin China; Tonkin).

— Pellegrin, Mém. Mus. Malgache,  
vol. 14, p. 172, fig. 94, 1933 (Nosy Bé).

River, New Guinea). — Pellegrin,  
 Bull. Soc. Zool. France, vol. 39,  
 p. 224, 1914 (Diego Suarez and  
 Mahambo, Madagascar). — McCulloch and Whitley, Mem. Queensland  
 Mus., vol. 8, pt. 2, p. 141, July 7, 1925  
 (reference). — Fowler, Mem. Bishop  
 Mus., vol. 10, p. 123, 1928 (compiled).  
 — Tirant, Serv. Océanogr. Pêch.  
 Indo Chine, p. 171, 1929 (Saigon).  
 — Hardenbourg, Treubia, <sup>vol. 13</sup> livr. 13,  
 p. 125, July 1931 (Rokan River mouth,  
 Sumatra). — Chevey, Inst. Océan.  
 Indo Chine, 19<sup>e</sup> note, p. 19, August  
 25, 1932 (Cochin China; Tonkin).  
 — Pellegrin, Mém. Mus. Malgache,  
 vol. 14, p. 172, fig. 94, 1933 (Hosi Bé).



9036. Kabalat Pomt, Samar.

July 24, 1909.

A 1357. Great Tobea Island.

Inaha  
Culloch

Trus., v.

(referen

9576, 9578 to 9580. Mahunog River,  
Camiagin Island. August 3, 1909.  
Length 65 to 167 mm. 40 examples.

5552, 5553, 5555, ~~5556~~ 5561.

Malatgas and Cannia Rivers, Puerta  
Princesa, Palawan. April 4, 1909.  
Length 111 to 185 mm.

4906 and 4907. Malinao River,  
Palawan Island. April 21, 1909.  
Length 38 to 170 mm. 5 examples.

<sup>14460, 17938,</sup>  
19262, 19263, 19266, <sup>19267,</sup> Manauya River,

Cebu. August 25, 1909. Length 30 to 200 mm.  
8 examples.

11678 [1111]. Mariveles Bay, Manila Bay.  
January 30, 1909. Length 175 mm.

22137. Murcielagos Bay, Cascade River,  
Mindanao. August 20, 1909. Length  
135 mm.

<sup>6348,</sup>  
5342 to 5346, 11925 to 11934, 11968, 11969,

21155, 21789. Nonucan River, Camp Overton,

Mugil cuneatus Klunzinger, Verh.  
 Zool. Bot. Ges. Wien, vol. 20, p.  
 830, 1870 (Red Sea). — Borodin,  
 Bull. Vanderbilt Marine Mus.,  
 vol. 1, art. 3, p. 76, 1932 (Brisbane,  
 Australia).

Mugil squamipinnis Swainson,  
 Nat. Hist. Animals, vol. 2, p. <sup>234</sup>~~114~~,  
 1839 (name only).

~~Mugil engelii (not Bleeker) Day,  
 Fishes of Malabar, p. 139, 1865.~~

Mugil squamopennis Swainson, Nat.  
 Hist. Animals, vol. 2, p. 413, 1839  
 (type locality, Ganges River).

864  
10661 and 10662. Basud River, Luzon,  
fresh water. June 15, 1909. Length **210**  
to **220** mm.

5563. Batangas market. June 7, 1908.  
Length 186 mm.

19264. Busbus Point, Siasi Island,  
between Jolo and Tawi Tawi. September 20,  
1909. Length 160 mm.

2 examples, Calugan River, 3 miles  
from mouth near Paluan Bay,  
Mindoro. December 11, 1908. Length 32 to 47 mm.

23737 to 23739. Dumaco River, Luzon.  
February 25, 1909. Length 90 to 100 mm.

5813 to 5815, 5817 to 5823, Iwahig  
River and tributaries, Puerta Princesa,  
Palawan. April 4, 1907. Length 80 to  
139 mm. 16 examples.

11385, 11388, 11389. Joni River, Jayabas  
Island. February 25, 1909. Length 129  
to 144 mm.

~~Mugil longimanus~~

Mugil longimanus Günther, Cat. Fish. Brit. Mus., vol. 3, p. 428,

1861 (type locality, East Indies).

— Klunzinger, Sitzb. Ber. Akad. Wiss. Wien, math.-naturw. Kl.,

vol. 80, pt. 1, p. 395, 1879 (1880)

(Cleveland Bay); Denks. Akad. Wiss. Wien, math.-naturw. Kl., vol.

41, pt. 1, p. 5, 1879 (Cleveland Bay).

— Macleay, Proc. Linn. Soc. New

South Wales, vol. 9, p. 41, 1884 (copied).

— De Vis, Proc. Linn. Soc. New

South Wales, vol. 9, p. 870, 1885

(Brisbane). — Ogilby, Cat. Fish. New

South Wales, p. 41, 1886. — Saville-

Kent, Great Barrier Reef, pp. 294,

370, 1893. — Jordan and Seale, Bull.

Bur. Fisher., vol. 26, p. 10, 1906 (1907)

e.<sup>1</sup> Head more or less rugose striate above and on muzzle; soft dorsal and anal fins scaleless; pectoral shorter than ventral.

f.<sup>1</sup> Belonoperca. Head attenuated, pike like; scales about 50; D.

VI - I, 10; A. I, 8. Belonoperca

f.<sup>2</sup> Diploprion. Head deep, blunt in profile; scales over 100;

D. VIII - 15; A. III, 13. Diploprion

e.<sup>2</sup> Head without rugose striae on cranium or muzzle; soft dorsal and anal fins more or less scaly basally; paired fins subequal or pectoral longer than ventral.

g.<sup>1</sup> Dorsal spines 5 to 9; preopercle edge entire or minutely or irregularly serrate; maxillary with supplemental bone; scales 45 to 50; anal rays 7 or 8.

(Cavite), — Ogilby, Ann. Queensland Mus., no. 9, p. 26, 1908<sup>part</sup> (compiled).

— Seale, Philippine Journ. Sci., vol. 9, p. 61, 1914 (Hong Kong). —

McCulloch, Rec. Austral. Mus., vol. 13, no. 4, p. 130, April 12, 1921 (Bombay; Philippines). — McC

— Weber and Beaufort, Fish. Indo Austral. Archip., vol. 4, p. 239, 1922 (Java Sea, Java, Puger, Makassar).

McCulloch, Rec. Austral. Mus., no. 13, p. 9, 1927 (Christmas and Palmyra Islands); Proc. Acad. Nat. Sci. Philadelphia, vol. 79, p. 263, 1927 (Orani; Orion); Mem. Bishop Mus., vol. 10, p. 123, 1928 (Christmas and Palmyra materials). — Chu,

Biol. Bull. St. John's Univ., no. 1, p. 104, January 1931 (reference).

— McCulloch, Mem. Austral. Mus., vol. 5, pt. 1, p. 115, June 29, 1929 (reference).

(Cavite), — Ogilby, Ann. Queensland Mus., no. 9, p. 26, 1908<sup>part</sup> (compiled).

— Seale, Philippine Journ. Sci., vol. 9, p. 61, 1914 (Hong Kong). —

McCulloch, Rec. Austral. Mus., vol. 13, no. 4, p. 130, April 12, 1921

(Bombay; Philippines). — McCulloch and Whitley, Mem.

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

141, July 7, 1925 (reference). — Proc. Acad. Nat. Sci. Philadelphia, vol. 77, 1925, p. 208 (Delagoa Bay);

Fowler, Bull. Bishop Mus., no. 38, p. 9, 1927 (Christmas and Palmyra

Islands); Proc. Acad. Nat. Sci.

Philadelphia, vol. 79, p. 263, 1927

(Orani; Orion); Mem. Bishop Mus.,

vol. 10, p. 123, 1928 (Christmas and

Palmyra materials). — Chu,

Biol. Bull. St. John's Univ., no. 1, p.

104, January 1931 (reference).

— McCulloch, Mem. Austral. Mus., vol. 5, pt. 1, p. 115, June 29, 1929 (reference).

scale  
asutus

series of



g.<sup>2</sup> Brownish, 16 series of cheek scales

f.<sup>2</sup> Molars triserial or more than 3 series of

h.<sup>1</sup> Five to 7 series of scales

nasutus

(Bomba

Culloch

queensla

41, July

Proc. Acad. Nat. Sci. Philad.

Fowler

h. 1. Chorististinae. Two separate dorsals, not joined at base; lower jaw without 2 forward projecting denticles at tip; lower gill rakers 13; caudal peduncle deep.

Chorististium

h. 2. Malakichthyinae. Two dorsals, joined narrowly at their basal intersection; lower jaw with 2 forward projecting denticles at tip; lower gill rakers 23; caudal peduncle slender.

Malakichthys

g. 2. Moroninae. Dorsal spines 11 or 12; body elongated; preopercle edge minutely serrate; scales small, 100 or more (larger in extralimital genera).

Mugil engeli (not Bleeker 1858)  
Day, Proc. Zool. Soc. London, 1865,  
p. 33 (Cochin, India); Fishes  
of Malabar, p. 139, 1865.

Mugil banksii Seale, Philippine  
Journ. Sci., vol. 4, no. 6, p. 501, pl.  
5, November 1909 (type locality,  
Siquijor Island, Philippines).

Com<sup>79</sup>

Sparus latus Houttuyn

Sparus latus Houttuyn, Verhandel.  
Holland. Maatsch. Haarlem, vol. 20,  
 1782, p. 322. Japan.  $\frac{1}{m}$  Bonnaterre,  
Tabl. Ichth., 1788, p. 102 (seas of Japan).  
 $\frac{1}{m}$  Gmelin, Syst. Nat. Linn., <sup>vol. 1,</sup> 1789, p. 1276  
 (Japanese Seas).  $\frac{1}{m}$  Walbaum, Artedi  
Pisc., vol. 3, 1792, p. 300 (on Gmelin).  
 $\frac{1}{m}$  Forster, Fauna Indica, 1795, p. 15.  $\frac{1}{m}$   
Schneider, Syst. Ichth. Bloch, 1801, p.  
 284 (Japan).  $\frac{1}{m}$  Jordan and Thompson,  
Proc. U. S. Nat. Mus., vol. 41, 1912, p. 583,  
 fig. 10 (Kobe and Wakanoura).  $\frac{1}{m}$  Snyder,  
Proc. U. S. Nat. Mus., vol. 42, 1912, p. 415  
 (Tokyo and Kagoshima).  $\frac{1}{m}$  Jordan and  
Thompson, Mem. Carnegie Mus., vol. 6,  
 no. 4, 1914, p. 256 (Osaka).  $\frac{1}{m}$  Jordan and  
Hubbs, Mem. Carnegie Mus., vol. 10, no. 2,  
 1925, p. 240 (Bay of Miikawa).  $\frac{1}{m}$  Oshima,  
Jap. Journ. Zool. Trans. Abstracts, vol. 1,

Depth  $3\frac{2}{5}$  to 4; head  $3\frac{2}{5}$  to 4,  
width  $1\frac{1}{2}$  to  $1\frac{3}{4}$ . Snout  $3\frac{4}{5}$  to 4  
in head; eye  $3\frac{1}{2}$  to 4, subequal  
with snout,  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in  
interorbital, adipose lids covering  
 $\frac{1}{4}$  to  $\frac{1}{3}$  of iris; maxillary concealed,  
reaches eye; upper lip width  
half of pupil; mandibular angle  
would form broadly obtuse;  
mouth width 3 to  $3\frac{1}{5}$  in head;  
interorbital  $2\frac{1}{3}$  to  $2\frac{1}{2}$ , broadly  
convex; lower preorbital edge  
finely dentate. Gill rakers <sup>20 to</sup> 40 + 50,  
fine, slender, setiform,  $1\frac{1}{4}$  in  
gill filaments which equal eye.

Scales 30 to 33 in lateral  
axial series to caudal base; 12  
transversely, 19 or 20 predorsal.  
Most of soft vertical fins finely  
scaled, at least basally. Axillary

Chilodipterus macrodon Klunzinger,  
~~Fische~~ Roth. Meer., 1884, p. 23. — Day,  
Fauna Brit. India, vol. 1, 1889, p. 501.

— Zugmayer, Abhandl. Bayer. Akad. Wiss.,  
 vol. 26, pt. 6, 1913, p. 10 (Oman).

Cheilodipterus macrodon McCulloch, Proc.  
Lin. Soc. New South Wales, vol. 46, no. 4,  
 1921, p. (Palm Island, Queensland).

Cheilodipterus octovittatus Cuvier, Hist.  
Nat. Poiss., vol. 2, 1828, p. 163. Mauritius.

— Guichenot, Notes Ile Reunion, vol. 2,  
 1862, p. 23. — Playfair, Fishes of Zanzibar,  
 1866, p. 21 (Zanzibar and Johanna). —

Klunzinger, Verh. zool. bot. Gesell. Wien,  
 vol. 20, 1870, p. 717 (Koseir, Red Sea). —

Peters, Monatsb. Akad. Wiss. Berlin,  
 1876, p. 436 (Mauritius). — Macleay, Proc.

Lin. Soc. New South Wales, vol. 7, 1882,  
 p. 236.

pectoral scale  $2\frac{1}{3}$  in fin. Scales with 4 to 6 basal radiating striae, apical fringe of 35 points; Circuli fine.

D. IV - I, I, 7, I or I, 8, I, first spine  $1\frac{3}{5}$  to 2 in head, first branched ray  $1\frac{3}{4}$  to 2; A. III, 9, I, first branched ray  $1\frac{3}{5}$  to 2; least depth of caudal peduncle  $2\frac{2}{3}$  to  $2\frac{3}{5}$ ; origin of soft fin at first  $\frac{2}{5}$  of anal base; pectoral 1 to  $1\frac{1}{10}$ , reaches beyond spinous dorsal origin; ventral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; caudal  $3\frac{2}{5}$  to  $3\frac{1}{2}$  in rest of fish, deeply emarginate behind.

Back gray brown, rows of scales on back and side above with gray brown line. Under surface whitish. Dorsals, caudal and pectoral grayish, last dusky

- Paramia lineata Bleeker, Ned. Tijds.  
 Dierk., vol. 1, 1863, p. 344 (Madagascar).
- Perca arabica Gmelin, Syst. Nat. Linn., vol. 1,  
 1789, p. 1312 (on Forskäl). — Schneider,  
 Syst. Ichth. Bloch, 1801, p. 85 (Arabia).
- Centropomus arabicus Lacépède, Hist. Nat.  
 Poiss., vol. 4, 1802, pp. 249, 257 (Arabia).
- Cheilodipterus arabicus Cuvier, Hist. Nat.  
 Poiss., vol. 2, 1828, p. 165, pl. 23 (Lohaja).
- Centropomus macrodon Lacépède, Hist. Nat.  
 Poiss., vol. 4, 1802, pp. 252, 273. Mauritius and  
 Reunion.
- Paramia macrodon Bleeker, Atlas Ichth.  
 Ind. Néerl., vol. 7, 1873-76, p. 105 (Batu,  
 Singapore, Java, Bawean, Celebes, Batjan,  
 Amboina). — Jordan and Seale, Bull.  
 Bur. Fisher., vol. 25, 1905 (1906), p. 252  
 (Apia and Samoa). — Weber, Siboga  
 Exped., vol. <sup>52, Fische</sup> 65, 1913, p. 239 (Saleyer).



basally. Lower fins and iris  
whitish.

2370

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

A. N. S. P., one example. Christmas  
Island, Polynesia. Bishop Museum.  
Length ~~148~~ mm.

667

Cheilodipterus lineatus Klunzinger,  
Verh. zool. bot. Ges. Wien, vol. 20, 1870,  
p. 717 (Koser, Red Sea). — Day, Fishes  
of India, pt. 1, 1875, p. 66, pl. 18, figs.  
8-9 (Gwadar). — Borsieri, Ann. Mus.  
Civ. Genova, vol. 41, 1904, p. 192 (Sciunna  
on Laalac Island). — Beaufort, Bijdr.  
Dierk., Amsterdam, 1913, p. 116 (Butan).  
— Fowler, Copeia, no. 58, June 18, 1918, p.  
63 (Philippines); Proc. Acad. Nat. Sci.  
Phila., 1927, p. 274 (Philippine materials).

One example. Cotabato, Mindanao.  
 October 26, 1903. Length 86 mm.  
 Called "Balanae".

27 examples. Iloilo River, shore  
 above Iloilo, Panay. June 2, 1908.  
 [643.] Length 67 to 198 mm. Adipose  
 eyelids broad, narrow, or absent in  
 young. Axillary pectoral scale  
 $\frac{1}{2}$  pectoral, which equals head,  
 $2\frac{2}{3}$  in pectoral in young. A. III, I, I.  
 Dark spot at pectoral origin.

Two examples. Manila Bay, Luzon.  
 December 6, 1907. Length 54 to 80 mm.

One example. Manila Harbor.  
 March 16, 1908.

Six examples. Panabutan Bay,  
 Mindanao. February 6, 1909. Length  
 38 to 110 mm. Young without adipose  
 lids. Caudal peduncle deep. Pectoral  
 $1\frac{1}{3}$  in head, axillary scale very short.

<sup>no</sup> First dorsal dusky, with first spine blackish. Second dorsal dusky, red brown bar across middle somewhat nearer base. Anal similar to soft dorsal, with brown bar nearer base, continued on lower edge of caudal peduncle. Caudal dusky. Paired fins slightly dusky. Iris dark.

1 example. Tomahu Island. December 11, 1909. Length 32 mm.

No distinct dark spot at pectoral origin in smallest.

P. 24136.

Length 82 mm.

4 examples. Rasa, Mantaguin Bay,  
Palawan Island. April 1, 1909.

Length 33 to 34 mm.

35 examples. Saboon Island, Ragay  
Bay, Ragay Gulf, Luzon. March 10, 1909.

Length 20 to 30 mm.

17 examples. Tatanan Islands, Tawi Tawi  
Group. February 21, 1908. Length 34 to 39  
mm. [274.] (Type, no. , U.S.N.M.)

Body translucent, general color dusky  
~~upper half of head blackish~~  
~~upper half of head blackish~~ above with median  
narrow black line. Axial line of  
opalescent green margined with  
blackish above, ending in a brilliant  
scarlet blotch larger than pupil at  
caudal base. Purplish stripe behind  
eye across opercle, bordered on either  
side by black. Chin and nose black.  
Top of head dusky with short silvery  
olive stripes. Lower head and breast white.

2373

Mugil engeli Bleeker

Mugil engeli Bleeker, Nat. Tijds.  
ned. Indië, vol. 16, p. 277, 1858  
(type locality, East Indies; diagnosis  
in key); vol. 15, p. 385, 1858,  
Batavia; name only); vol. 17, p. 143,  
1858-59 (Boleling, Bali); Act. Soc.  
Sci. Ind. Néerl. (Sumatra), vol. 8,  
p. (12) 78, 1859 (Benculen; Java;  
Bali). — Günther, Cat. Fish. Brit.  
Mus., vol. 3, p. 430, 1861 (copied). —  
Fowler, Bull. Bishop Mus., no. 22,  
p. 32, 1925 (Samoa); Mem. Bishop  
Mus., vol. 10, p. 122, 1928 (Strong  
Island; Ponapé); vol. 11, no. 5, p.  
324, 1931 (reference).  
— Weber and Beaufort, Fish. Indo Austral  
Archip., vol. 4, p. 238, 1922 (Pulu Weh,  
Sumatra; Simalur; Nias; Tjilatjap,  
Java).

Therapon unicolor (nom Günther) Kner,  
Sitzungsber. Akad. Wiss. Wien, vol. 58,  
1868, pt. 1, p. 300, pl. 2, fig. 4 (Kandavu,  
Fiji; <sup>Rockhampton,</sup> Queensland).

Dules marginatus (nom Cuvier) Day,  
Fishes of India, pt. 1, 1875, p. 67, pl. 18, fig.  
1; Fauna Brit. India, vol. 1, 1889, p.  
503, fig.

Dules haswellii Macleay, Proc. Linn.  
Soc. New South Wales, vol. 5, 1880, p. 350.  
Rockingham Bay, Queensland; ser. 2, vol. 1,  
1886, p. 882 (Cairns).

Dules haswellii Kent, Great Barrier  
Reef, 1893, p. 282 (Brisbane River).

Kuhlia rupestris hedleyi Ogilby, Proc.  
Linn. Soc. New South Wales, vol. 22,  
1897, p. 761. New Caledonia.



2374  
— Pellegrin, Mém. Acad. Malgache,  
vol. 14, p. 172, 1933 (Madagascar  
material).

Houttuyn is evidently synonymous with Scomber japonicus Houttuyn, printed previously in the same work. If Pagrosomus major (Schlegel) be admitted as distinct, as suggested by Jordan and Thompson in 1912, Houttuyn's Sparus auratus falls with it. In my "Fishes of Oceania" I also united Pagrosomus auratus (Schneider) with Pagrosomus major (Schlegel), as these two so called species are only slightly distinct and largely accepted on their geographical distribution. ~~Some Philippine specimens~~  
~~may have been imported from~~  
~~Japan.~~

49331 to 49333 A.N.S.P. Melbourne, Australia. Mrs. Agnes F. Kenyon. Length 286 to 293 mm.

Mugil kelaarti Günther, Cat.

Fish. Brit. Mus., vol. 3, p. 429, 1861

(type locality, Point de Galle,

Ceylon; Philippines). — Peters,

Monatsb. Akad. Wiss. Berlin, p. 263,

1868 ( ). — Day, Fishes

of India, pt. 2, p. 352, pl. 73, fig. 1,

1876. — Günther, Journ. Mus.

Godeffroy, vol. 5, p. 215, pl. 121, fig.

A, 1876 (Tahiti; Raiatea).

Schlegel, Cat. Mus. Godeffroy, no. 8, p. 6, 1881 (Ponape).

Day, Fauna British India, Fishes,

vol. 2, p. 346, 1889. — Elera, Cat.

Fauna Filipinas, vol. 1, p. 537, 1895

(Luzon, Manila, Navotas). —

Fowler, Proc. Acad. Nat. Sci.

Philadelphia, 1900, p. 500 (Hawaii);

1903, p. 743 (same material). —

Seale, Occas. Pap. Bishop Mus.,

vol. 4, no. 1, p. 15, 1906 (Tahiti). —

~~Dulus fuscus Quichenot, Prot. Id.  
Reunion, vol. 2, 1802, p. 24.~~

~~Moronopsis fuscus Steindachner, Sitzb.  
ber. Mus. Wien, vol. 82, pt. 1, 1880, p. 240  
Tobago, Madagascar.~~

Dulus guamensis Valenciennes, Hist. Nat.  
Pois., vol. 7, 1831, p. 474. Guam. —

Humboldt and Jacquinot, Voyage Astrolabe  
et Zélée, Zool., vol. 3, 1853, p. 42, pl.  
3, fig. 1 (type). — Günther, Cat. Fishes  
Brit. Mus., vol. 1, 1859, p. 269. — Macleay,  
Proc. Linn. Soc. New South Wales, vol. 8, 1883,  
p. 257 (fresh waters Hornumby Island,  
New Guinea).

Dulus vanicolensis Valenciennes, Hist. Nat.  
Pois., vol. 7, 1831, p. 478. Vanicolo. —

Humboldt and Jacquinot, Voyage Astrolabe  
et Zélée, Zool., vol. 3, 1853, p. 42, pl. 3, fig.  
2 (type).

2376

Oshima, Ann. Carnegie Mus., vol.  
~~13~~ 13, nos. 3-4, p. 248, April  
25, 1922 (Tokio, Formosa).

Mugil kelaarti Günther, Rep.  
Voy. Challenger, vol. 1, pt. 6, p. 58,  
1880 (Tongatabu). — Jordan and  
Seale, Bull. Bur. Fisher., vol. 25,  
p. 217, 1905 (reference). — Pellegrin,  
Bull. Mus. Hist. Nat. Paris, 1907, p. 202 (Tongobory,  
Madagascar).

Mugil kelaarti Steindachner,  
Sitzb. Ber. Akad. Wiss. Wien,  
math.-naturw. Kl., vol. 115, pt. 1,  
p. 1416, 1906 (Upolu).

Mugil kelaarti Pöhl, Cat. Mus.  
Godeffroy, no. 9, p. 34, 1884 (Ponapé)

- Moronopsis rupestris Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1873-76, p. 121, pl. (61) 339, fig. 2 (Timor, Batjan, Buru, Amboina).
- Percia ciliata (Kuhl and Van Hasselt) Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 52. Fresh waters of Bantam, Java.
- Percichthys ciliata Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 62 (copied).
- Dules fuscus Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 118. Bourbon. — Peters, Arch. Naturg., 1855, p. 238 (Anjoana Island, fresh water, Mozambique). — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 268 (copied). — Playfair, Fishes of Zanzibar, 1866, p. 22 (Johanna Island). — Peters, Naturw. Reise Mossambique, Zool., 1868, p. 10. — Martens, Reise Ostafri<sup>ka</sup>, von der Seeben, vol. 3, pt. 1, 1869, p. 141 (Mauritius).
- Savager Hist. Nat. Madagascar, Poiss., 1800, p. 40, pl. 1, fig. 14

2377

Depth  $3\frac{1}{2}$  to  $3\frac{7}{8}$ ; head  $3\frac{1}{3}$  to  $3\frac{3}{5}$ ,  
width  $1\frac{3}{5}$  to  $1\frac{2}{3}$ . Snout  $3\frac{4}{5}$  to  $4\frac{1}{8}$   
in head; eye  $3\frac{4}{5}$  to 4, greater than  
snout,  $1\frac{4}{5}$  in interorbital;  
maxillary concealed, length 4 to  
 $4\frac{1}{2}$  in head; mouth as seen below  
would form obtuse angle; no teeth;  
interorbital  $2\frac{1}{3}$  to  $2\frac{3}{5}$  in head;  
preorbital minutely serrated.  
Gill rakers 38 + 44, finely  
lanceolate,  $\frac{1}{2}$  of gill filaments,  
which equal eye.

Scales 32 or 33 in median  
or axial lateral series to caudal  
base; 11 transversely, 20 predorsal.  
Scales with 5 or 6 basal radiating  
striae, also 1 or 2 incomplete  
auxiliaries, edge scalloped;  
circuli fine.

D. IV I, 8, I, first spine  $1\frac{3}{4}$  to

$1\frac{4}{5}$  in head, first branched ray  
 2 to  $2\frac{1}{8}$ ; A. III, 9, I, third spine  
 $1\frac{7}{8}$  to  $2\frac{4}{5}$ , first branched ray  
 $1\frac{3}{4}$  to  $1\frac{4}{5}$ ; least depth of caudal  
 peduncle  $2\frac{2}{5}$  to  $2\frac{3}{5}$ ; caudal 1,  
 deeply emarginate behind;  
 pectoral  $1\frac{1}{8}$  to  $1\frac{1}{6}$ ; ventral  $1\frac{2}{5}$   
 to  $1\frac{1}{2}$ .

Back olivaceous. Below pale  
 to white. Iris whitish. Vertical  
 fins and pectoral dull brown.  
 Ventral pale or light brown.

Madagascar, Ceylon, East Indies,  
 Philippines, Formosa, Micronesia,  
 Polynesia, Hawaii.



One example. Atulayan Bay,  
Luzon. June 17, 1909. Length 71 mm.  
Adipose lids. Scales 34. Pectoral  
with axillary scale.  $a. \underline{\underline{III}}, 9, \underline{\underline{I}}$ .

Four examples. Balayan Bay,  
Sulu Archipelago. February 18, 1908.  
Length 13 to 22 mm.

Ten examples. Batangas, Luzon  
River. June 7, 1908. Length 36 to  
44 mm. Scales 33.  $a. \underline{\underline{III}}, 9, \underline{\underline{I}}$ .

Fifteen examples. Buena Vista,  
Guimaras Island. January 14, 1909.  
Length 53 to 104 mm. Adipose eyelids  
narrow. Maxillary concealed.

Scales 30 to 33.  $a. \underline{\underline{III}}, 9, \underline{\underline{I}}$ . Pectoral  
 $1\frac{1}{6}$  in head, axillary scale  $2\frac{3}{4}$  in  
fin.

One example. Bulan Island, Sulu  
Group. September 13, 1909. Scales 31.  
Axillary scale present. Length 54 mm.

Amia hypselonotus (Bleeker)

Apogon hypselonotus Bleeker, Nat.  
Gyda. Ned. Indië, vol. 8, 1855, p. 309.  
Batu Archipelago. — Günther, Cat.  
Fishes Brit. Mus., vol. 1, 1859, p. 232  
(copied); Journ. Mus. Godeffroy, vol.  
1, pt. 1, 1873, p. 20 (South Pacific).

Amia hypselonotus Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 7, 1873-76, p. 94,  
pl. (75) 353, fig. 4 (Batu, Nias, Banka,  
Java, Bali, Celebes, Timor, Ternate,  
Ceram, Goram, Ambonia, Amu). —  
Fowler, Proc. Acad. Nat. Sci. Phila., 1927,  
p. 274 (Philippines).

Twelve examples. Chase Head,  
mouth of stream near by in brackish  
water, Endeavour Strait, Palawan.

December 22, 1908. Length 27 to 97 mm.

No adipose lids. Scales 33. Pectoral

axillary scale present. A. III, 9, I.

Pectoral  $1\frac{1}{4}$  in head. Bright silvery,  
back drab. Fins whitish.

31 examples. Davao, Mindanao.

May 16, 1908. Length 38 to 112 mm.

Pectoral with moderate axillary scale.

Fifteen examples. Estero, Sablayan

Bay, Mindoro. December 13, 1908.

Length 40 to 68 mm. Scales 33.

71 examples. Mahinog in brackish  
water, Camiguin Island. August 3,  
1909. Length 34 to 123 mm. Adipose

16628 to 16633. Sulade Island.  
February 16, 1908. Length 68 to 81 mm.

D. 5146.

eyelid rather broad. Scales 33 to 35.  
A. III, 9, I. Pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$  in  
 head, axillary scale  $\frac{1}{3}$  of fin.

Two examples. Malabang Anchorage.  
 May 21, 1908. Length 37 to 43 mm.

Four examples. Manila Harbor,  
 Luzon. March 16, 1908. Length 39 to 61 mm.

Three examples. Manila Harbor.  
 December 30, 1907. Length 80 to 83 mm.

Fifteen examples. Paluan River,  
 Mindoro. December 11, 1908. Length  
 35 to 65 mm.

One example. Panabutan Bay,  
 Mindanao. February 5, 1908. Length  
 39 mm. Scales 32. A. III, 9, I.

Two examples. Panabutan Bay.  
 February 6, 1908. Length 110 to 124 mm.

3 examples. Batangas market.  
June 7, 1908. Length 57 to 81 mm.

4 examples. Jolo. February 14, 1908.  
Length 84 to 98 mm. D. 5136.

2 examples. Jolo. March 5, 1908.  
Length 64 to 77 mm. D. 5174.

23702. Jolo. March 6-7, 1908.  
Length 70 mm.

3 examples. Mansalay, Mindoro.  
June 4, 1908. Length 61 to 68 mm.

1180. Pagbilao Island, Capulaan Bay.  
February 24, 1909. Length 45 to 50 mm.

2035 and 2036. Sulade Island, Sulu  
Archipelago. February 16, 1908. Length  
70 to 72 mm. D. 5147.

One example. Tangauron River,  
Port Calton, Luzon. December 16, 1908.  
Length 45 mm. Scales 35.

Two examples. Pasacao in river,  
Luzon. March 9, 1909. Length 56  
to 81 mm. Scales 31.

Five examples. Port Galera, Mindoro.  
June 9, 1908. Length 20 to 74 mm.

Nine examples. Port Janelo, two  
miles up river, Luzon. July 13, 1908.  
Length 33 to 56 mm. Eye  $3\frac{1}{2}$ . Silvery,  
with light fins.

Three examples. Pucot River,  
Mariveles. January 29, 1909. Length 77  
to 115 mm.

4984 to 4986. Ragay River in fresh water,  
Ragay Gulf, Luzon. March 10, 1909.  
Length 52 to 59 mm. Eight examples.

Our specimens appear to be the same as those described by Bleeker. He makes no mention of the spot at the base of the posterior rays of the second dorsal or traces of stripes on the back and opercle.



One example. San Miguel Harbor,  
Ticao Island. April 2, 1908.

Length 49 mm.

Five examples. Santa Maria, Siquijor  
Island. August 11, 1909. Length 32  
to 41 mm.

Three examples. Silino Island  
tidal. August 10, 1909. Length 48 to  
52 mm. Scales 32. Pectoral with  
axillary scale.

One example. Taradero Bay,  
Mindoro, in small stream at head  
of bay. July 24, 1928. Length 107 mm.

One example. Kemja, Gulf of Boni,  
Celebes, Dutch East Indies. November  
13, 1909. Length 75 mm.

Seven examples. Nan Wan, Formosa.  
January 27, 1910. Length 18 to 45 mm.  
A. III, 9, I.

Depth  $2\frac{3}{5}$  to 3; head  $2\frac{2}{5}$  to  $2\frac{1}{2}$ , width  $2\frac{1}{2}$  to  $2\frac{1}{10}$ . Snout 4 to  $4\frac{1}{8}$  in head; eye 3 to  $3\frac{2}{5}$ , greater than snout or interorbital; maxillary reaches  $\frac{1}{2}$  to  $\frac{3}{5}$  in eye, expansion 2 to  $2\frac{1}{5}$ , length  $2\frac{1}{8}$  to  $2\frac{1}{4}$  in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital 5 to  $5\frac{1}{5}$ , nearly level; preopercle ridge entire, edge finely and feebly serrated. Gill rakers 6 + 16, lanceolate, little longer than gill filaments or half of eye.

Scales 22 to 24 in lateral line to caudal base and 2 to 4 more on latter, 3 above, 6 below, 6 predorsal, 2 rows on cheek; head naked, except cheeks and opercles. Lateral line of tubes well exposed, simple,

Macleay, Proc. Linn. Soc. New  
 South Wales, vol. 9, p. 40, 1884  
 (copied). — De Vis, Proc. Linn.  
 Soc. New South Wales, vol. 9, p.  
 1885 (Brisbane). — Day, Fishes of  
 India, Suppl., p. 800, 1888; Fauna  
 British India, Fishes, vol. 2,  
 p. 344, 1889. — Steindachner, Abhand.  
 Senckenberg. Gesell., vol. 25, p. 434,  
 1900 (Ternate). — McCulloch, Rec.  
 Austral. Mus., vol. 13, no. 4, p.  
 128, April 12, 1921 (India). —  
Weber and Beaufort, Fishes Indo  
 Austral. Archip., vol. 4, p. 236,  
 1922 (Pulu Weh; East Java; Java Sea; Lombok;  
 Makassar; New Guinea).  
 — McCulloch and Whitley, Mem.  
 Queensland Mus., vol. 8, pt. 2, p.  
 141, July 7, 1925 (reference). — Reeves,  
 Journ. Pan Pac. Res. Inst., vol. 3,

least depth of caudal peduncle 3 to  $4\frac{1}{8}$ ; pectoral  $1\frac{3}{5}$  to  $2\frac{1}{5}$ ; ventral  $1\frac{3}{5}$  to  $1\frac{7}{8}$ .

Silvery gray brown, lower sides and under surface silvery white. In large examples back, chiefly above lateral line, also spinous and soft dorsal marked with many irregular dark spots, not extending on head or predorsal region. Iris brown and silvery. Dorsals and caudal pale gray brown, other fins pale brownish.

China and Japan. Though listed from the Philippines by Elera no other notice of its occurrence has been given.

6834. Hong Kong market. October 18, 1909. Length 356 mm.

2386  
no. 2, p. 8, 1927 (reference). — Fowler,  
Mem. Bishop Mus., vol. 10, p. 122,  
fig. 26, 1928 (Apiang, Kingsmills;  
Guam); vol. 11, no. 5, p. 324, 1931

(Suva). — Chu, Biol. Bull. St.  
John's Univ., no. 1, p. 104, January  
1931 (reference).

— McCulloch, Mem. Austral. Mus., vol.  
5, pt. 1, p. 116, June 29, 1929 (reference).

— Fowler, Mem. Bishop Mus.,

Genus Nippon Cuvier.

Nippon Cuvier, Hist. Nat. Poiss., vol. 2, 1828,  
p. 131. Type Nippon japonicus Cuvier,  
monotypic.

Body compressed. Mouth large, protractile.  
Maxillary exposed, without supplemental  
bone. Filliciform teeth in jaws, on vomer  
and palatines; tongue smooth.  
Preopercle serrate, with very strong  
spine at angle and few small antrorse  
spines on lower edge. Opercle with 3  
strong spines. Gill membranes  
separate. Pseudobranchiae present.  
Gill rakers long and slender.  
Branchiostegals 7. Vertebrae 31, of  
which 17 caudal. Scales very small,  
ciliated. Head scale. Lateral line  
complete, tubes straight and each  
occupies whole length of scale.

Mugil cephalus (not Linnaeus)  
Buchanan - Hamilton, Fishes of  
Ganges, pp. 219, 381, 1822.

Depth  $3 \frac{2}{5}$  to  $3 \frac{3}{5}$ ; head  $2 \frac{1}{3}$  to  $2 \frac{2}{5}$ ,  
 width  $2 \frac{1}{5}$ . Snout  $2 \frac{7}{8}$  to  $3 \frac{1}{8}$  in  
 head from snout tip; eye 4 to  $5 \frac{3}{4}$ ,  
 $1 \frac{1}{4}$  to  $2 \frac{1}{8}$  in snout, much greater  
 than interorbital in young to  $4 \frac{1}{5}$   
 with age; maxillary reaches slightly  
 beyond front eye edge or opposite  
 front pupil edge, expansion  $1 \frac{2}{3}$  to  
 2 in eye, length  $2 \frac{1}{2}$  to  $2 \frac{3}{5}$  in head  
 from snout tip; teeth villiform,  
 in bands in jaws, on vomer and  
 palatines, none on tongue; interorbital  
 5 to  $5 \frac{1}{3}$ , nearly level; strong spine  
 at angle of <sup>pre</sup>opercle nearly long as  
 eye with age and edge above serrate,  
 also several large denticles on  
 lower edge; <sup>lower preorbital edge finely serrate;</sup> opercular spines  
 equidistant, lower most advanced.  
 Gill rakers 7+17, lanceolate,  
 longer than gill filaments or  $1 \frac{1}{3}$  in



Mugil planiceps Valenciennes, Hist. Nat. Poiss., vol. 11, p. 122, 1836

(type locality, Calcutta).

— Bleeker, Verh. Batavia. Genoots.

(hal. Ich. Bengal), vol. 25, p. (48) 101, 1853 (Hooghly River, Calcutta);

vol. 26, pl. 1, fig. 5, 1857. —

Günther, Cat. Fish. Brit. Mus.,

vol. 3, p. 428, 1861 (Ceylon, Calcutta, Pinang, China). — Kner, Reise

Novara, Fische, p. 225, 1865 (Java, Ceylon);

— Day, Fishes of India,

pt. 2, p. 350, fig. (stomach), 1876.

{ — Bleeker, Ned. Tijds. Dierk., vol.

{ 4, p. 143, 1873 (1874) (reference).

— Elera, Cat. Fauna Filipinas, vol.

1, p. 537, 1895 (Luzon, Manila, Cavotes).

— Josh, Parliam. Rep. Mar. Dep.

Queensland, vol. 17, p. —, 1903

Dorsal with 11 or 12 spines, soft fin with spine and 10 or 11 rays and shorter than spinous fin. Anal spines 3, rays 1, fin short. Caudal slightly emarginate. Pectoral rays 16 or 17, partly symmetrical, rounded, upper rays longest. Ventral with strong spine, below pectoral base, fins close together.

Japan, Philippines.

(Jumping Pin, Moreton Bay). —  
Duncker, Mitteil. Naturh. Mus.  
 Hamburg, vol. 21, p. 166, 1903 (1904)  
 (Kuala Selangor). — Jordan and  
Seale, Bull. Bur. Fisher., vol.  
 25, p. 217, 1905 (1906) (reference). —  
Evermann and Seale, Bull. Bur.  
 Fisher., vol. 26, p. 59, 1906 (1907)  
 (Bulan). — Tirant, Rev. Océan.

Pech. Indo Chien, p. 171, 1929  
 (Cochin China). — Chu, Biol. Bull.  
 St. John's Univ., no. 1, p. 104,  
 January 1931 (reference).  
Weber, Nova Guinea, vol. 9, Zool. pt. 4, p.  
 569, 1913 (Biwak Island and Lorentz River).  
Seale, Philippine Journ. Sci., vol.  
 9, p. 61, 1914 (Hong Kong).

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Nippon spinosus Cuvier.

- Nippon spinosus Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 131, pl. 19. Japan.
- Schlegel, Fauna Japon., Poiss., pt. 1, 1842, p. 1, pl. 1, figs. 1-2 (coasts of southern provinces, Jesso). — Richardson, Ichth. China Jap., 1846, p. 222 (Japan). —
- Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 80 (Japan); <sup>Rep. Voy. Challenger, Zool., vol. 1, 1880, p. 63 (Yokohama).</sup> — Steindachner and Döderlein, Denkschr. Akad. Wiss. Wien, vol. 47, pt. 1, 1883, p. 228 (Tokyo). —
- Boulenger, Cat. Fishes Brit. Mus., vol. 1, 1895, p. 124 (Yokohama). — Ishikawa and Matsuura, Prelim. Cat. Fishes Mus. Tokyo, 1897, p. 57 (Tokyo, Aizui, Boshu).
- Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, 1901, p. 353 (Tokyo), p. 750 (Yokohama); Annot. Zool. Japon., vol. 3, 1901, p. 72 (Yokohama and Nagasaki). —

Mugil (Liza) planiceps McCulloch  
and Whitley, Mem. Queensland  
Mus., vol. 8, pt. 2, p. 141, July 7,  
1925 (reference).

Mugil cephalus

Smith and Pope, Proc. U. S. Nat. Mus.,  
 vol. 31, 1906, p. 468 (Kochi). — Jordan  
 and Richardson, Bull. Bur. Fisher.,  
 vol. 27, 1907 (1905), p. 255 (Buyo); Proc.  
 U. S. Nat. Mus., vol. 37, 1910, p. 431 (Misaki  
 and Philippines). — Jordan and Thompson,  
 Mem. Carnegie Mus., vol. 6, no. 6, 1914, p.  
 248 (Osaka and Misaki). — Izuka and  
Watsuwra, Cat. Zool. Spec. Tokyo Mus.,  
 1920, p. 154 (Boskin). — Jordan and  
Hubbs, Mem. Carnegie Mus., vol. 10, no. 2,  
 1925, p. 254 (Tokyo, Toyama, Misaki,  
 Miyazu, Fukuin).

Mungil cephalotus (not Valenciennes  
1836) Cantor, Journ. Asiatic Soc.  
Bengal, vol. 18, pt. 2, p. 95, 1849  
(1850).

50  
perab, uniform. Vertical fins  
with narrow white edges, otherwise  
grayish. On dorsal dark gray  
oblique bars sloping down  
posteriorly. On last anal rays  
2 or 3 white oblique narrow  
lines. Caudal with 10 transverse  
pale or gray white cross lines.  
Pectoral gray, dark basally,  
and followed by 3 whitish  
and 3 dark transverse bands.  
Ventral whitish.

Ophicephalus lucius Valenciennes.  
One, 180 mm., Kratt. Scales 62  
to caudal base; 6 above. Four rows  
of alternate blackish spots, large  
as or little larger than eye, on  
side. On abdomen and lower  
side of tail 10 to 12 dark short  
bars, slightly inclined to  
vertical and well contrasted.



~~Mugil belanak Bleeker~~

Mugil belanak Bleeker, Nat. Tijds.  
red. Indië, vol. 11, p. 419, 1856  
(type locality, Muntok, Banka);  
vol. 13, p. 337, 1857 (Batavia).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 3, p. 427, 1861 (copied). —

Day, Fishes of India, pt. 2, p. 351,  
pl. 74, fig. 5, 1876 (Bombay); Fauna  
British India, <sup>Fishes,</sup> vol. 2, p. 345, 1889.

↑ Vinciguerra, Ann. Mus. Civ. Stor. Nat.  
Genova, ser. 2, vol. 9, p. 180, 1890 (Rangoon).

Java, Madura, Bali). — Towler,  
Proc. Acad. Nat. Sci. Philadelphia,  
p. 494, fig. 9, August 16, 1905 (Baram,  
Borneo). — Seale, Philippine Journ.

— Weber, Nova Guinea, vol. 5, pt. 2, p.  
244, 1908 (Moso in Tami Basin, north  
New Guinea).

~~Mugil belanak Bleeker~~

Mugil belanak Bleeker, Nat. Tijds.  
 Ned. Indië, vol. 11, p. 419, 1856  
 (type locality, Muntok, Banka);  
 vol. 13, p. 337, 1857 (Batavia).

— Günther, Cat. Fish. Brit. Mus.,  
 vol. 3, p. 427, 1861 (copied). —

Day, Fishes of India, pt. 2, p. 351,  
 pl. 74, fig. 5, 1876 (Bombay); Fauna  
 British India, <sup>Fishes,</sup> vol. 2, p. 345, 1889.

— Weber, Zool. Ergebn. Ned. Ost  
 Indië, vol. 3, p. 451, 1894 (Banka,  
 Java, Madura, Bali). — Fowler,  
 Proc. Acad. Nat. Sci. Philadelphia,

p. 494, fig. 9, August 16, 1905 (Baram,  
 Borneo). — Seale, Philippine Journ.

95  
 Sci., vol. 5, no. 4, p. 268, October  
 1910 (Sandakan). — Tirant,

Serv. Océanogr. Pech. Indo Chine,

eye; 4 or 5 above and below  
Mushroom form.

95

Scatter 1130 in lateral line to  
caudal base and 10 more on latter;  
Pores 85 in lateral line to caudal

News

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Analysis of the species.

a<sup>1</sup>. Dales. Caudal fin immaculate or with a single black blotch on each lobe in the young, becoming broad black margin with age; body usually with dark spots; 16 to 19 gill rakers on lower branch of first arch; scales 40 to 45 + 4 or 5 in lateral line.

b<sup>1</sup>. Caudal slightly emarginate, lobes rounded; anal rays 10; maxillary reaches below middle of eye, or beyond with age. rupestris

b<sup>2</sup>. Caudal more emarginate; anal rays 11 to 13; maxillary not or barely reaches middle of eye. marginatus

a<sup>2</sup>. Moronopsis. Caudal fin with median black band and 2 broad black bands on each lobe; body without dark spots; 24 to 29 gill

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f. 171, 1929 (Cochin China).

in seals. We may note that  
Momonopsis Gill was proposed with  
the genotype Oulex taeniurus Cuvier,  
thus the unnecessary Safole Jordan  
with the same genotype falls as  
an exact synonym.

Mugil bontak (part) Bleeker,  
Nat. Tijds. Ned. Indië, vol. 13,  
p. 336, 1857 (Batavia); vol. 16,  
p. 278, 1858 (diagnosis in key);  
Act. Soc. Sci. Ind. Néerl. (Bomeo),  
vol. 8, p. 49, 1860; (Ned. Tijds. Dierk.,  
vol. 4, p. 143, 1873 (1874) (Amoy).

Body well elevated. Eyes moderate. Mouth terminal, oblique. Chin moderately prominent. No canines. Preorbital and preopercle edges finely denticulate. Opercle without membranous lobe. Gill rakers 17 to 28 on lower branch of first arch. Scales 40 to 50 in longitudinal series. Lateral line complete. Dorsal and anal fins each with basal scaly sheaths. Dorsal begins well before middle in body length. Caudal emarginate or forked.

Widely distributed in the Indo Pacific. We accept Dulus Cuvier 1829 as different from Dulus Biillot 1816 in birds, thereby eventuating the family name Dulidae. This case parallels our acceptance of Halichoeres Rüppell as different from Halichoerus Milsson



Mugil decem-radiatus (not  
Günther 1861) Schmeltz, Cat. Mus.  
 Godeffroy, no. 4, p. 21, 1869 (Kandavu).  
 — Pöhl, Cat. Mus. Godeffroy, no. 9,  
 p. 34, 1884 (Kandavu).

Mugil kandavensis Günther,  
 Journ. Mus. Godeffroy, vol. 6,  
 pt. 11, p. 215, 1877 (type locality,  
 Kandavu). — Schmeltz, Cat. Mus.  
 Godeffroy, no. 7, p. 51, 1879  
 (Kandavu). — Jordan and Seale,  
 Bull. Bur. Fisher., vol. 25, p.  
 217, 1905 (1906) (reference).

ray  $2\frac{1}{5}$  to  $2\frac{3}{4}$ ; A. III, 7, I, second spine 4 to  $4\frac{1}{5}$ , second ray  $2\frac{1}{2}$  to  $2\frac{4}{5}$ ; caudal  $1\frac{4}{5}$  to 2, hind edge emarginate; least depth of caudal peduncle 4 to  $4\frac{1}{8}$ ; pectoral 2 to  $2\frac{1}{4}$ ; ventral 2 to  $2\frac{1}{8}$ .

Brown above, whitish below, color of back and lower surface contrasted by pronounced line of demarcation. In young distinct light longitudinal band extends from upper hind eye edge to below soft dorsal, obsolete with age. Fins all brown in adult. In young spinous dorsal dusky and soft dorsal with broad dusky black anterior area, apex white and rest of fin pale. Caudal in young with blackish blotch on each lobe terminally

Mugil tade Forskål

Mugil crenilabis tade Forskål,

descript. Animal., pp. 14, 74, 1775  
(type locality, Arabia).

Mugil tade Valenciennes, Hist. Nat.  
Poiss., vol. 11, p. 153, 1836 (Red Sea).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 3, p. 410, 1861 (reference). —

Klunzinger, ~~Sitzb. Ber. Akad. Wiss.~~  
~~Wien, vol. 80, math.-naturw. Kl.,~~  
~~vol. 20, p. 828, 1870 (Red Sea).~~

Verh. zool. bot. Ges. Wien, vol. 20,  
p. 828, 1870 (Red Sea); Sitzb. Ber.  
Akad. Wiss. Wien, math.-naturw.  
Kl., vol. 80, pt. 1, p. 394, 1879 (1880)  
(Cleveland Bay); Fische Roth. Meer,  
p. 133, pl. 10, figs. 3-a, 1884. —

950

Depth  $3\frac{1}{3}$  to  $3\frac{3}{4}$ ; head 3 to  $3\frac{1}{8}$ , width  $2\frac{2}{3}$  to  $2\frac{4}{5}$ . Snout  $3\frac{7}{8}$  to  $4\frac{1}{3}$  in head from snout tip; eye  $3\frac{1}{4}$  to  $6\frac{1}{8}$ , greater than snout or interorbital; maxillary reaches  $\frac{3}{5}$  in eye to little beyond with age; expansion  $1\frac{1}{6}$  to  $2\frac{1}{2}$  in eye, length  $2\frac{1}{6}$  to  $2\frac{1}{3}$  in head from snout tip; teeth villiform, in bands in jaws, outer laterals scarcely enlarged; interorbital 5 to  $5\frac{1}{3}$ , flattened, frontal ridges conspicuous; hind preopercle edge minutely serrated and several serrae conspicuously enlarged; 3 spines along lower preopercle edge directed downward; lower opercular spine longest and most posterior. Gill rakers 7 to 9 + 15 to 17, lanceolate,  $\frac{3}{5}$  of eye; 3 upper sometimes rudimentary.

Depth, <sup>3 1/4 to</sup> 3 3/4; head <sup>to 3 3/4</sup> 3 1/2, width <sup>3 3/5 to</sup> 1 1/5  
 Snout <sup>3 3/8 to 4</sup> 3 7/8 in head; eye <sup>3 3/5 to</sup> 4, little  
<sup>or greater</sup> less than snout, <sup>1 1/3 in interorbital</sup> adipose lids  
 well developed; maxillary about  
 reaches eye, exposed, length <sup>to 4 1/5</sup> 4 in  
<sup>upper lip width 1/2 of pupil;</sup>  
 head; mandible with broad obtuse  
 angle; interorbital <sup>to 2 7/8</sup> 2 1/2, broad,  
 flat or slightly convex. Gill rakers  
<sup>15 to 20 + 38 to</sup>  
 62?, slender, fine, 3/5 of gill  
 filaments, which little less than  
 orbit.

<sup>30 to 35</sup>  
 Scales in lateral axial series to  
 caudal base; <sup>to 12</sup> 10, <sup>18 to</sup> transversely, 20?  
 predorsal. Soft vertical fins largely  
 with fine scales. Axial pectoral  
 scale <sup>2</sup> 7 of fin. Scales with 5 or 6 basal  
 radiating striae, edge scalloped, with fringe of  
 cutaneous flaps; circuli very fine.

11842, ~~22647~~, 23648. Caracaran, Batan  
Island. June 8, 1909. Length 79 to 154 mm.

6 examples. Cataingan Bay, Masbate  
Island. April 18, 1908. Length 46 to 83 mm.

24055. Cataingan Bay. April 17, 1908.  
Length 62 mm.

7982 to 8008, 8497. Catbalogan, Samar.  
April 16, 1908. Length 84 to 160 mm.

12257. Caxisigan Island, north Balabac  
Strait. January 2, 1909. Length 165 mm.

17723 and 17725. Cuyo, Cuyo Island. April 9,  
1909. Length 160 to 192 mm.

23493 to 23495, 23074 to 23076. Endeavor Strait,  
north-west coast of Palawan. December 22,  
1908. Length 66 to 108 mm. 15 examples.

to  $1\frac{2}{3}$  (2396)

D. IV - I, 8, first spine  $1\frac{1}{2}$ , in  
 head, first ray  $1\frac{1}{3}$ , <sup>to  $1\frac{7}{8}$</sup>   
 third spine <sup>3 to</sup>  $3\frac{1}{2}$ , first III, 9, <sup>I,</sup>  
 first ray  <sup>$1\frac{1}{2}$  to  $1\frac{3}{4}$</sup>   $1\frac{3}{4}$ ;  
 least depth of caudal peduncle  
<sup>to  $2\frac{1}{5}$</sup>   $2\frac{1}{5}$ , pectoral  <sup>$1\frac{1}{8}$  to</sup>  $1\frac{1}{2}$ , rays II, 14;  
 ventral rays I, 5, fin  <sup>$1\frac{2}{5}$  to</sup>  $1\frac{1}{2}$  in  
 head; caudal 3 in rest of fish,  
 emarginate behind.

Back and head above dark  
 brown, paler on sides and under  
 surfaces whitish. Fins pale brown  
 no dark spot at pectoral origin.

Red Sea, Arabia, India, Ceylon,  
 Andamans, Burma, Singapore, Pinang,  
 East Indies, Indo China, Philippines,  
 China, Queensland, Melanesia,  
 Micronesia.

208. Busin Harbor, Burias Island.  
March 8, 1909. Length 90 mm.

16776 and 16803. Busin Harbor. March  
7, 1909. Length 75 to 95 mm.

7485, 23571, 23574. Busin Harbor.  
April 22, 1908. Length 90 to 140 mm.

16411. Cagayan Island, Jolo Sea.  
March 31, 1909. Length 203 mm.

14249. Candaraman Island, North Balabac  
Strait. January 4, 1909. Length 63 mm.

17068, 23090 to 23092, 24093. Canmahala  
Bay, Ragay Gulf, Luzon. March 11, 1909  
Length 73 to 132 mm. 6 examples.

15078, 15088, 15090, 15093, 15095, 15097. Capulaan  
Bay, Pagbilao Island. February 24, 1909.  
Length 61 to 86 mm.



One example. Panabutan Bay, <sup>(2397)</sup>  
Mindanao. February 6, 1908. Length 39 mm.  
Scales 34. Pectoral with axillary scale.  
Maxillary visible. A. III, 9, I.

One example. Pasacao, Pasacao  
River, Luzon. March 9, 1909. ~~A~~ Length  
133 mm. Adipose eyelids present.  
Maxillary exposed. Scales 33. Axillary  
pectoral scale  $2\frac{3}{4}$  in fin. A. III, 9, I.  
Pectoral  $1\frac{1}{4}$  in head.

Two examples. Ragay River, Ragay  
Gulf, Luzon. March 10, 1909. Length 31  
to 58 mm. No adipose eyelids. Maxillary  
exposed. Scales 33. Axillary pectoral  
scale moderate. A. III, 9, I.

23534 to 23536, 23875, 23876, 23878.

Tidore Island, south of Ternate. November

25, 1909. Length 53 to 105 mm.

One example. No data. Length 98 mm.

A. N. S. P., one example. Baram.

Mr. William H. Furness 3rd. 1898.

Weitar Inst. Anat. Length 115 mm.

15158 and 16293. Alibijaban Island,  
Raga Gulf, Luzon Island. March 6, 1909.  
Length 78 to 83 mm.

23491. Balibias Bay, Lubang, southern  
Luzon. July 14, 1908. Length 90 mm.

17028. Bisucay Island, near Cuyo, Cuyo  
Islands. April 9, 1909. Length 163 mm.

8875. Buang Bay, Talajit Island.  
March 15, 1909. Length 145 mm.

14804, 15557 to 15559. Bugsak Island,  
Balabac. January 5, 1909. Length 92 to  
104 mm.

17849 and 17850. Bumbum Island,  
vicinity of Jolo. September 15, 1909.  
Length 101 to 103 mm.

{ 7489. Bolalo Bay, Palawan. April 22, 1908. Length 128 mm.  
23061, 24095, 24096. Bolalo Bay. December 21, 1908. Length 58 to 92 mm.

2399

Mugil robustus Günther

- Mugil robustus Günther, Cat. Fish. Brit. Mus., vol. 3, p. 432, 1861 (type locality, Madagascar). — Bleeker, Nederl. Tijds. Dierk., vol. 1, p. 345, 1863 (Madagascar). — Sauvage, Hist. Nat. Madagascar, Poiss., p. 400, pl. 413, figs. 6-a, 1891 (Madagascar). — Regan, Ann. Natal Mus., p. 243, 1908 (Kosi Bay). — Boulenger, Cat. Fresh Water Fish. Africa, vol. 4, p. 92, fig. 54, 92 (Madagascar; Zululand). — Gilchrist and Thompson, Ann. Durban Mus., vol. 1, no. 4, p. 317, 1917 (reference). — Barnard, Ann. South Afric. Mus., vol. 21, pt. 1, p. 305, June 1925 (Zululand).

22863. Jogan Bay, Gulf of  
Tomini, Celebes. <sup>November?</sup> 1909. Length 130 mm.

19946 and 22684. Gane Road, Gillolo  
Island. December 1, 1909. Length 125 to  
136 mm.

15353. Hokuro, Formosa. January 29,  
1910. Length 183 mm.

— Pellegrin, mém. Acad. Malgache,  
vol. 14, p. 176, fig. 96, 1933 (Madagascar).

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Parapriacanthus güntheri (Klunzinger)

Pempherichthys güntheri Klunzinger,  
Verh. zool. bot. Gesell. Wien, vol. 21,  
1871, p. 470, Red Sea.

Parapriacanthus güntheri Klunzinger,  
Fische Roth. Meer., 1884, p. 81, pl. 5,  
fig. 4.

Depth 3; head 3. Snout 5 in head  
from upper jaw tip; eye  $3\frac{1}{8}$ , greater  
than snout; maxillary reaches opposite  
eye center, expansion  $1\frac{1}{2}$  in eye, length  
 $1\frac{3}{5}$  in head from snout tip; teeth  
small, uniform, (shown as) uniserial in  
jaws, on vomer and palatines; interorbital  
but little elevated. Scales 70 in lateral  
line (figure shows about 50). D. V, 9,  
first ray  $1\frac{1}{4}$  in total head; A. III, 22  
(figure shows 21 branched rays), first  
ray 3; caudal  $1\frac{1}{4}$ , well emarginate;  
least depth of caudal peduncle 3;



Depth  $4\frac{1}{5}$ ; head 4, width  $1\frac{2}{3}$ .

Snout  $3\frac{1}{2}$  in head; eye  $4\frac{4}{5}$ ,  $1\frac{2}{5}$  in snout,  $1\frac{3}{4}$  in interorbital, adipose lids anterior and posterior to eye and not extending on iris; mouth terminally inferior, mandible forming obtuse angle; maxillary exposed, reaches  $\frac{7}{8}$  to eye; lower preorbital edge serrate; upper lip rather wide, width  $\frac{1}{3}$  of eye; interorbital  $2\frac{2}{5}$  in head, low, broad, but slightly convex. Gill rakers 31 + 43, short, fine, slender, flexible points,  $\frac{1}{2}$  of gill filaments, which equal eye.

Scales 35 in lateral axial series to caudal base; 13 transversely between soft dorsal origin and anal; 28 predorsal, of which 18 forward to occiput. Pectoral scaly axillary flap  $4\frac{1}{2}$

in fin, ventral flap 2 in fin.  
 Soft dorsal with small scales anteriorly, caudal and anal nearly entirely scaly. Scales with 7 to 11 basal radiating striae; 37 to 55 short low apical points, with 2 to 6 series transversely; circuli fine, basal.

D. IV - I, I, 7, I, second spine  $1\frac{4}{5}$  in head, first branched ray  $1\frac{2}{3}$ ; A. III, 9, I, first branched ray  $1\frac{7}{8}$ ; least depth of caudal peduncle  $2\frac{1}{8}$ ; pectoral  $1\frac{1}{4}$ ; ventral  $1\frac{3}{5}$ , spine  $1\frac{1}{2}$  in fin; caudal  $3\frac{2}{5}$  in rest of fish.

Back dark brown, sides and below pale brown, evidently whitish. Iris gray-mandible pale. Dorsals and caudal brownish, other fins paler to whitish with

slight dusky tinge on pectoral  
above and front of anal.  
Inside pectoral base with  
dark or blackish brown blotch.

Natal, Zululand, Madagascar.

A. N. S. P., one example. Durban,  
Natal. H. W. Bell Marley. Length  
157 mm.

Mugil georgii Ogilby

Mugil georgii Ogilby, Proc. Linn. Soc. (1898)  
 New South Wales, vol. 22, p. 77, 1897,  
 (type locality, Estuary of George River).  
 — Stead, Edible Fishes New South  
 Wales, p. 43, 1908. — Cokerell,  
 Mem. Queensland Mus., vol. 2, p.  
 53, 1913 (scales). — McCulloch,  
 Rec. Austral. Mus., vol. 13, no. 4,  
 p. 129, pl. 22, fig. 1 (cotype of  
Mugil nortoni?; Port Hacking  
 and Port Stephens, New South  
 Wales). — McCulloch and Whitley,  
 Mem. Queensland Mus., vol. 8,  
 pt. 2, p. 141, July 7, 1925 (reference).  
 — McCulloch, Mem. Austral. Mus.,  
 vol. 5, pt. 1, p. 114, June 29, 1929  
 (reference).

(Zamboanga). — Fowler, Proc. Acad. Nat. Sci. Phila., 1907, p. 264 (name only). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 254 (Mindoro Island). — Gilchrist and Thompson, Ann. South Afr. Mus., vol. 6, 1908-10, p. 214 (Umbilo River tidal, Durban). — Regan, Proc. Zool. Soc. London, 1913, p. 375 (Indo Pacific to Tuamotus). — Beaufort, Bijdr. Dierk. Amsterdam, 1913, p. 110 (Kajeli, Borneo). — Boulenger, Cat. Fresh Water Fishes Afric<sup>a</sup>, vol. 3, 1915, p. 93, fig. 76 (Zanzibar, Mauritius, Rodrigues). — Gilchrist and Thompson, Ann. Durban Mus., vol. 1, 1917, p. 321 (compiled). — Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, 1925, p. 232 (Chatan, Ryubyeu). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 8 (Guam), p. 32 (Hawaii), p. 37 (Tahiti).

Mugil nortoni Ogilby, Ann.  
Queensland Mus., no. 9, p. 22,<sup>(4)</sup>  
1908 (type locality, "Eastern  
Australia" [= Queensland]).

<sup>1891</sup> Gesell., vol. 21, 1889, p. 500 (Kobotoni, Zanzibar). — Sauvage, Hist. Nat. Madagascar, Poiss., 1891, p. 150, pl. 41 B, fig. 3. — Weber, Zool. Forschungen Austral. Semon, vol. 5, 1895, p. 262 (Amboina, fresh water). — Fowler, Proc. Acad. Nat. Sci. Phila., 1906, p. 512 (Samoa and Tahiti).

Boules rupestris Guichenot, Notes Ile Réunion, vol. 2, 1862, p. 24.

Kuhlia rupestris Boulenger, Cat. Fishes Brit. Mus., vol. 1, 1895, p. 36 (Zanzibar, Mauritius, Rodriguez, Palau Islands, Ponapé, Amboina, Solomon, New Hebrides, Fiji, Tonga). — Pfeffer, Thierw. Ost Afr., Fische, 1896, p. 3, fig.

— Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 255 (Vaisigano River above Tipia). — Seale and Bean, Proc. U. S. Nat. Mus., vol. 30, 1907, p. 242

Depth  $3\frac{2}{5}$ ; head 4. Snout 6 in head; eye  $3\frac{3}{5}$ , greatly exceeds snout,  $1\frac{2}{5}$  in interorbital, with broad adipose lids; maxillary concealed, reaches eye; very few fine ciliae on premaxillaries, none on mandible; upper lip broad, width about  $2\frac{1}{5}$  in eye, vertical; mouth seen below would form obtuse angle; interorbital  $2\frac{4}{5}$  in head, low; preorbital slightly notched, denticulated.

Scales 31 or 32 in lateral series to caudal base; 12 transversely. Caudal and pectoral bases completely scaly, also soft dorsal and anal bases scaly. Pectoral with axillary scale  $\frac{1}{3}$  of fin length. Scales obscurely ciliated, nearly cycloid, ctenoid on breast.



D. IV - I, 8, first spine  $1\frac{7}{8}$  in head, first branched ray 2; A. III, 9, first branched ray  $1\frac{7}{8}$ ; least depth of caudal peduncle  $1\frac{4}{5}$ ; pectoral rays I, 15; ventral rays I, 5, fin  $1\frac{1}{3}$  in head; caudal  $3\frac{4}{5}$  in rest of fish, hind edge concave.

Brownish, paler below. Blackish spot at pectoral origin. Length 23 mm. (McCulloch.)

New South Wales, Queensland.

Mugil tadopsis Ogilby

Mugil tadopsis Ogilby, Ann.  
 Queensland Mus., No. 9, <sup>pt. 1, (4)</sup> p. 27, 1908  
 (type locality, Moreton Bay, Queensland).  
 — McCulloch, Rec. Austral. Mus.,  
 vol. 13, no. 4, p. 127, pl. 22, fig. 2,  
 1921 (type; Burdekin and  
 Endeavour Rivers). — McCulloch  
 and Whitley, Mem. Australian  
 Mus., vol. 8, pt. 2, p. 141, July 7,  
 1925 (reference). — McCulloch,  
 Mem. Austral. Mus., vol. 5, pt. 1, p.  
 116, June 29, 1929 (reference).

and each blotch well separated with distinct whitish edges.

Japan and Philippines, from which latter locality we have no examples. The above description from Japanese examples in the U. S. National Museum received from Dr. H. M. Smith and the Japanese Government, 153 to 392 mm.

Depth  $3\frac{1}{2}$  to  $3\frac{3}{5}$ ; head  $4\frac{2}{5}$

Snout  $3\frac{7}{8}$  to  $4\frac{1}{4}$  in head; eye  $3\frac{7}{8}$  to  $4\frac{1}{4}$ , subequal with snout, adipose lids broad; maxillary exposed, extends behind hind nostril; mouth as seen below would form obtuse angle; upper lip thin, width  $\frac{2}{3}$  pupil; each jaw with single row of minute cilia; interorbital 2 to  $2\frac{1}{5}$  in head; preorbital with front edge concave, denticulate below. Lower gill rakers 50,  $\frac{2}{7}$  of eye.

Scales 32 or 33 in lateral series; 11 transversely, 20 predorsal. Pectoral with vestigial axillary scale. Scales on cheeks and lower surfaces finely ciliated.

D. VIII I, 8, spinous dorsal origin above tenth lateral scale, second spine  $1\frac{1}{2}$  to  $1\frac{3}{5}$  in head, soft

dorsal origin over twentieth lateral scale, higher than spinous dorsal; A. III, 9, origin below nineteenth lateral scale; caudal deeply emarginate, branched rays  $1\frac{1}{2}$ , 6 to  $6\frac{1}{4}$  in body; least depth of caudal peduncle 7 to  $7\frac{1}{4}$ ; pectoral rays 12, reaches seventh lateral scale,  $4\frac{3}{5}$  to 5 in body; ventral  $1\frac{2}{5}$  to  $1\frac{1}{2}$  in head.

Dark blue above, silvery washed with bronze on sides, pearl white below. Each scale of back and sides with golden brown median bar, forming together longitudinal bands. Opercle with cloudy spot. Dorsal and caudal dull greenish. Obscure black blotch in pectoral axil. Iris lead blue, with narrow gold rim above. Length 325 mm. (Ogilby.)  
Queensland.

Mugil carinatus Valenciennes

Mugil carinatus (Ehrenberg)

Valenciennes, Hist. Nat. Poiss.,

vol. 11, p. 148, 1836 (type locality,  
Red Sea; Seychelles; Guam).

— Günther, Cat. Fish. Brit. Mus.,

vol. 3, p. 410, 1861 (reference). —

Day, Fishes of Malabar, p. 145,

1865; Fishes of India, pt. 2, p.

349, pl. 74, fig. 2, 1876 (Bombay);

Suppl., p. 800, 1888; Fauna

British India, Fishes, vol. 2,

p. 344, 1889. — Sauvage, Hist.

Nat. Madagascar, Poiss., p. 396,

pl. 42, figs. 1-a, 1891. — Oshima,

Ann. Carnegie Mus., vol. 12, nos.

2-4, p. 272, 1919 (Shimo-Tanusi

River; Taihoku); vol. 13, nos. 3-4,

p. 247, April 25, 1922 (Tavian),

Ambassis wolffi Bleeker.

Ambassis wolffi Bleeker, Nat. Tijds.  
Ned. Indië, vol. 1, 1850, pp. 3, 9.

Bandjermassing, Borneo. — Günther,  
Cat. Fishes Brit. Mus., vol. 1, 1859, p.

226 (copied). — Bleeker, Atlas Ichth.

Ind. Néerl., vol. 8, 1876-77, p. 133, pl.

(47) 325, fig. 2 (Sumatra, Borneo,

Celebes). — Fowler, Proc. Acad. Nat.

Sci. Phila., 1905, p. 500 (Baram, Borneo).

Ambassis wolffii Elera, Cat. Fauna  
Filip., 1895, p. 469 (Samar, Borongan).

Ambassis robustus (Schlegel) Günther,

Cat. Fishes Brit. Mus., vol. 1, 1859, p. 222.

Borneo. — Steindachner, Arch. Zool.

anat. Zool., vol. 3, 1864, p. 197, pl. 4,

fig. 1 (Celebes). — Elera, Cat. Fauna

Filip., 1895, p. 467 (Samar and Cebu).

Ujvon, Shimo-Tamusui River,  
Taihoku); Annot. Zool. Japon.,  
vol. 11, no. 1, p. 19, March 31, 1926  
(Hainan, Hainan). — Wu, Contrib.

Biol. Lab. Sci. Soc. China, vol.  
5, no. 4, p. 79, fig. 63, 1929 (Amoy).

— Chu, Biol. Bull. St. John's  
Univ., no. 1, p. 104, January 1931

(reference). — Pellegrin, Mém. Acad. Malgache,  
vol. 14, p. 177, 1933 (Madagascar).

— Fowler, Journ. Bombay Nat. Hist. Soc., vol. 30,  
no. 2, p. 315, January 25, 1925 (Calicut).

Mugil blunzingeri Day, Proc. Zool.  
Soc. London, 1888, p. 264 (~~type~~

~~on~~ Mugil carinatus Day 1876).

Fishes of India, Suppl., p. 800,  
1888 (reference); Fauna British

India, Fishes, vol. 2, p. 343,  
1889.



Whitleyia new subgenus

Type Amibassia wolfii Bleeker.

Scales small, about 40 to 46 in lateral line to caudal base. Cheek with 7 rows of scales. Second erect dorsal and anal spines enlarged and prominent, former higher than soft dorsal.

( For Mr. Gilbert F. Whitley,  
Zoologist of the Australian  
Museum )

2413

Depth  $3\frac{7}{8}$ ; head  $3\frac{1}{2}$ , width  $1\frac{3}{4}$ .

Snout 4 to  $4\frac{1}{5}$  in head; eye  $4\frac{1}{5}$  to  $4\frac{2}{3}$ , adipose lid moderate or covers  $\frac{1}{4}$  to  $\frac{1}{3}$  of iris; mouth inferior, angle obtuse, width  $3\frac{1}{5}$  to 4 in head; maxillary reaches eye; very narrow, exposed; upper lip moderate; interorbital  $2\frac{1}{4}$  to  $2\frac{2}{5}$  in head, broadly convex; preorbital narrow, edge finely serrated. Gill rakers 26 + 40, finely lanceolate,  $1\frac{2}{3}$  in eye, equal gill filaments.

Scales 37 or 38 in lateral axial series to caudal base; 11 or 12 transversely, 22 to 24 predorsal. Axillary pectoral scale 3 in fin. Soft vertical fins finely scaled. Scales with 5 or 6 basal radiating striae; 30 to 33 apical

lobules, with as many radiating weak striae; circuli fine.

D. IV - I, 8, I, first spine 2 in head, first branched ray 2; A. III, 9, third spine  $3\frac{1}{3}$  to 4, first branched ray 2; caudal 1, deeply emarginate, lobes pointed; least depth of caudal peduncle  $2\frac{1}{3}$  to  $2\frac{1}{2}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , reaches slightly beyond spenous dorsal origin; ventral  $1\frac{2}{3}$  to  $1\frac{3}{4}$ .

Back brownish, pale to whitish below. Fins paler, narrow dusky edges on ends of dorsals and caudal behind. Slight slaty blotch at bases of uppermost pectoral rays, also inner axillary bases, at least of upper, dusky.

A. N. S. P., three examples. Calicut.  
1922. James Hornell. Length  
126 to 134 mm.

13671. Limbe Strait, November 10, 1909.  
Length 95 mm.

14418. Talisse Island, north of Celebes.  
November 9, 1909. Length 116 mm.

20670. Sadaa, Gulf of Tomini, Celebes.  
November 17, 1909. Length 76 mm.

23859. Tugian Bay, Tugian Island,  
Gulf of Tomini, Celebes. November 19, 1909.  
Length 87 mm.

9711. Una Una Road, Binang Unang  
Island, Gulf of Tomini, Celebes.  
November 17, 1909. Length 186 mm.

23609 to 23612, Gane Road, Gillolo  
Island. December 1, 1909. Length 73 to  
113 mm.

Mugil sordidus Duncker and Mohr

Mugil sordidus Duncker and Mohr,  
Mitteil. Naturh. Mus. Hamburg,  
vol. 42, p. 132, fig. 6 (dorsal fins),  
1926 (type locality, Liebliche  
Island and Mowe Harbor, New  
Pommerania; Saba, Admiralty  
Islands; Langemak Bay, New  
Guinea). — Fowler, Mem. Bishop  
Mus., vol. 10, p. 123, 1928 (compiled).

maxillary scaled, 5 rows across expansion. Scales with 7 or 8 basal radiating striae; apical denticles 24 to 65 in single row; circuli fine.

D. VII or IX - I, 10, I, fourth spine  $2\frac{1}{2}$  to  $3\frac{1}{10}$  in total head length; first branched ray  $2\frac{3}{5}$  to  $2\frac{4}{5}$ ; A. III, 7, I, third spine  $2\frac{7}{8}$  to 3, first ray  $2\frac{2}{3}$  to  $2\frac{7}{8}$ ; caudal  $1\frac{2}{5}$  to  $1\frac{1}{2}$ , deeply forked, slender lobes sharply pointed; least depth of caudal peduncle  $3\frac{4}{5}$  to  $4\frac{2}{5}$ ; pectoral  $1\frac{1}{2}$ ; ventral 2 to  $2\frac{1}{2}$ .

Back brown, sides and below silvery white. Iris silvery white. Fins all pale, slightly dusky on spinous dorsal terminally.

Japan, Formosa, China, Philippines.

Depth 5 in total; head 4. Eye equals snout, adipose lids broader in front than behind; maxillary scarcely visible; lips narrow, without papillae; no teeth; preorbital strongly denticulate.

Scales 39 or 40 in lateral series; 12 transversely. First dorsal and paired fins with beveled scales. Second dorsal, anal, caudal and pectoral bases scaled.

D. IV - I, 8 to 10, first dorsal origin midway between front eye edge and caudal base, second dorsal inserted over middle of anal; A. III, 9; caudal well forked; pectoral rays 17 or 18; ventral rays 6.

Back brown, sides and belly silvery. First dorsal with black



pigment. Second dorsal with  
 black pigment on membranes,  
 lobe reaches half fin length.  
 Caudal lightly pigmented in  
 terminal half, base dark.  
 Pectoral with dark spot at  
 upper axil. Length 46 mm.  
 (Dencker and Mohr.)

East Indies, Melanesia.

Mugil affinis Günther

Mugil affinis Günther, Cat. Fish. Brit. Mus., vol. 3, p. 433, text fig. (head below), 1861 (type locality, Amoy, China). — Bleeker, Ned. Tijds. Dierk., vol. 4, p. 143, 1873 (1874) (reference). — Martens, Preuss. Exped. Ost Asien, vol. 1, p. 395, 1876 (Shanghai). — Elera, Cat. Fauna Filipinas, vol. 1, p. 537, 1895 (Iloilo, Manila, Navotas). — Reeves, Journ. Pan Pac. Res. Inst., vol. 5, no. 1, p. 8, 1927 (reference). — Wu, Contrib. Biol. Lab. Sci. Soc. China, vol. 5, no. 4, p. 81, 1929 (Amoy). — Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 1, p. 27, fig. 1 (head), 1930 (Itoyan, Okinawa). — Chu, Biol. Bull. St. John's Univ., no. 1, p. 103, January 1931 (reference).

2 examples. Laguna de Bay.

June 21, 1908. Length 70 to 76 mm.

5516, 5518, 5520 to 5524, 5526, 5527,

5529, 5534 to 5538. Malabon market.

August 8, 1908. Length 50 to 76 mm.

18 examples.

30 examples. Matampaya River,  
Palawan. December 26, 1908. Length 31 to  
92 mm.

1 example. Balochin Harbor, Linapacan  
Island, Linapacan Strait. December 18,  
1908. Length 31 mm.

9075 to 9078, 13683, 13684. Manila market.

June 24, 1908. Length 83 to 105 mm.

11 examples. Hato River, Luzon. June 17,  
1909. Length 22 to 31 mm.

7 examples. Hato River. June 18, 1909.  
Length 25 to 45 mm.

3 examples. Paluan River, Mindoro.  
December 11, 1908. Length 43 to 70 mm.

Mungil affinis Wu, Contrib. Biol.  
Lab. Sci. Soc. China, vol. 5, no. 4,  
fig. 64, 1929 (error).

5 examples. Alimango River,  
Alimango Bay, Burias Island.  
March 5, 1909. Length 70 to 92 mm.

15 examples. Camp Overton, Dligan Bay,  
Mindanao. August 6, 1909. Length 63 to  
83 mm.

12831. Cavite and San Roque markets.  
June 27, 1908. Length 92 mm.

4 examples. Chase Head, Palawan Island.  
December 22, 1908. Length 30 to 58 mm.

3 examples. Sampagit, Mollabon, August 10, 1908. Length <sup>46 to 51 mm.</sup>

32 examples. Dumara River. February  
25, 1909. Length 50 to 82 mm.

1 example. Estero, Sablayan, Mindoro.  
December 13, 1908. Length 42 mm.

5 examples. Guimaras Island, vicinity  
Buena Vista, Iloilo Strait. January 14,  
1909. Length 55 to 75 mm.

7751. Jolo market, Jolo. February 12,  
1908. Length 65 mm.

Depth  $5\frac{1}{3}$ ; head 5. Snout long as eye, moderately broad, somewhat pointed; <sup>adipose eyelids well developed;</sup> mouth angle as seen below obtuse, mouth cleft more than twice broad as deep; <sup>upper lip rather wide;</sup> maxillary exposed at end; interorbital  $2\frac{3}{4}$  in head, slightly convex; preorbital emarginate, denticulated.

Scales 38 in lateral series; 13 transversely, 24 predorsal scales forward to snout. <sup>soft dorsal</sup> ~~caudal~~ not scaly. Pectoral with very short obtuse scale in axil.

D. IV - I, 8, spinous fin origin little nearer snout than caudal base, above tenth lateral scale, front spines over 2 in head, soft dorsal origin over 24th lateral scale or first soft anal ray, high as spinous dorsal;

2422

A. III, 9, high as but rather longer than III soft dorsal; caudal little over 6 in total, short, emarginate; least depth of caudal peduncle 2 in head; pectoral inserted above middle in body depth, much shorter than head, reaches eighth lateral scale; ventral origin midway between pectoral origin and first dorsal origin.

Greenish, shining silvery.  
Length not given. (Günther.)  
China.

Mugil speigleri Bleeker

Mugil speigleri Bleeker, Nat. Tijds.  
Ned. Indië, vol. 16, p. 196, 1858  
(type locality, Singsawang, Borneo),  
p. 279 (East Indies; diagnosis in key),  
p. 386 (Batavia); Act. Soc. Sci.  
Ind. Néerl., vol. 5, no. 7, p. 2, 1858-  
59 (Singsawang); vol. 6 (Borneo), p.  
58, 1860 (Borneo).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 3, p. 435, 1860 (copied). — Day,  
Fishes of India, pt. 2, p. 348, pl.  
74, fig. 1, 1876 (Bombay); Fauna  
British India, vol. 2, p. 342, 1889.

— Duncker, Mitteil. Naturh. Mus.  
Hamburg, vol. 21, p. 166, 1903 (1904)  
(Klang, Kuala Lumpur). — Zugmayer,  
Abhandl. Kon. Bayer. Akad. Wiss.,  
vol. 26, pt. 6, p. 19, 1913 (Baluchistan).  
math. - physik. Kl.,



2785 [D. 5260]. Balanja Point, h.  
 $28^{\circ}$  W., 7.20 miles ( $12^{\circ}25'35''$  h.,  $121^{\circ}31'35''$  E.), off southeastern Mindoro.  
 In 234 fathoms. June 3, 1908. Length  
 174 mm.

24 examples [D. 5353]. Cape Melville  
 Light,  $5.85^{\circ}$  E., 16.8 miles ( $7^{\circ}50'45''$   
 N.,  $116^{\circ}43'15''$  E.), Balabac Strait.  
 In 148 fathoms. January 1, 1909.  
 Length 65 to 78 mm.

2858 to 2861 [D. 5403]. Capitancillo  
 Island. Light,  $3.46^{\circ}$  W., 15.7 miles  
 ( $11^{\circ}10'$  N.,  $124^{\circ}17'15''$  E.), between Leyte  
 and Cebu. In 182 fathoms. March  
 16, 1909. Length 137 to 161 mm.

2669 [D. 5272]. Corregidor Light,  
 N.  $26^{\circ}$  E., 25.50 miles ( $14^{\circ}$  N.,  $120^{\circ}22'30''$   
 E.), China Sea, vicinity southern Luzon.  
 In 118 fathoms. July 14, 1908. Length  
 82 mm.

— Duncker and Mohr, Mitteil. Naturh. Mus. Hamburg, vol. 42, p. 131, 1926 (Liebliche Island, New Pommernia). — Fowler, New. Bishop Mus., vol. 10, p. 123, 1928 (compiled).

— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 4, p. 241, 1922 (Java Sea). — Barnard, Ann. South Afric. Mus., vol. 21, pt. 1, p. 303, June 1925 (Delagoa Bay).

Mugil axillaris (not Valenciennes)  
Kner, Reise Novara, Fische, p. 227, 1865.

Mugil suppositus (not Günther)  
Day, Fishes of Malabar, p. 143, 1865.

16 examples [D. 5273]. Corregidor Light, N. 27° E., 27.25 miles (13° 58' 45" N., 120° 21' 35" E.), China Sea, vicinity southern Luzon. In 114 fathoms.

July 14, 1908. Length 37 to 78 mm.

10129, 10130, 10248 [D. 5501]. Macabalan Point Light, S. 35° E., 8.2 miles (8° 37' 37" N., 124° 35' E.), northern Mindanao. In 214 fathoms. August 4, 1909. Length 164 to 238 mm. 10 examples.

10131, 10195 [D. 5502]. Macabalan Point Light, S. 35° E., 8.2 miles (8° 37' 37" N., 124° 35' E.), northern Mindanao. In 214 fathoms. August 4, 1909. Length 178 to 210 mm. 8 examples.

4238 and 4239 [D. 5503]. Macabalan Point Light, S. 31° E., 6.6 miles (8° 36' 26" N., 124° 36' 08" E.), northern Mindanao. In 226 fathoms. August 4, 1909. Length 185 to 196 mm.

2425

Depth  $3\frac{3}{4}$ ; head  $3\frac{3}{4}$ , <sup>width  $1\frac{1}{2}$ .</sup> Snout  $4\frac{3}{4}$  in head; eye  $3\frac{4}{5}$ , greater than snout,  $1\frac{3}{4}$  in interorbital, with broad adipose lids; maxillary exposed at end; upper lip rather thick, oblique, forms part of snout end; mandibles meet at acute angle; teeth minute, few, below; interorbital 2 in head, rather convex; preorbital curved, not emarginate, finely denticulate.

Scales 40 to 42 in lateral series; 11 or 12 transversely, 22 predorsal forward to snout.

Soft dorsal, <sup>anal and caudal</sup> covered with fine scales, <sup>basally</sup> Pectoral with long pointed axillary scale. Scales cycloid, rounded posteriorly.

D. IV - I, 8, second spine  $1\frac{4}{5}$  in head, first branched ray  $1\frac{7}{8}$ ; A. III, 9, first branched ray  $1\frac{2}{3}$ ;

2426

least depth of caudal peduncle  $2\frac{1}{4}$ ;  
pectoral  $1\frac{1}{4}$ , rays 16; ventral  
rays I, 5, fin  $1\frac{3}{4}$  in head; caudal  
 $3\frac{1}{2}$  in rest of fish, emarginate  
behind.

Gray along back, lower two  
thirds of body silvery. Sides of  
head golden. Both dorsal tips  
blackish. Caudal end gray.  
Dark spot at pectoral origin.

Length 144 mm. (Day.)  
Portuguese East Africa,  
India, East Indies, Malaya,  
Baluchistan, Melanesia. Weber  
and Beaufort give length as  
225 mm.

2427

lugil oshimai new species

Mugil cunnesius (not Valenciennes)

Cantor, Journ. Asiatic Soc.

Bengal, vol. 18, pt. 2, p. 1082, 1849

(1850) (Sea of Pinang; Malayan

Peninsula; Singapore). — Bleeker,

Nat. Tijds. Ned. Indië, vol. 3, p.

454, 1854 (part); Act. Soc. Sci.

Ind. Néerl., vol. 8 (Sumatra), p.

8, 1860 (part). — Günther, Cat.

Fish. Brit. Mus., vol. 3, p. 434, 1861

(Malayan Peninsula material). —

Day, Fishes of India, pt. 2, p. 349,

1876. — Klunzinger, Fische Roth.

Meer., p. 132, 1884 (part). — Day,

Fauna British India, vol. 2, p. 342,

1889 (part). — Ogilby, Ann. Queensland

Mus., no. 9, pt. 1, p. 26, 1908 (compiled).

— McCulloch, Mem. Austral. Mus., vol. 5,

pt. 1, p. 115, June 29, 1929 (reference).

Malgache, vol. 14, p. 173, 1933 (note in footnote).

Mugil cunnesius (not Valenciennes)  
Cantor, Journ. Asiatic Soc.  
 Bengal, vol. 18, pt. 2, p. 1082, 1849  
 (1850) (Sea of Pinang; Malayan  
 Peninsula; Singapore). — Bleeker,  
 Nat. Tijds. Ned. Indië, vol. 3, p.  
 454, 1854 (part); Act. Soc. Sci.  
 Ind. Néerl., vol. 8 (Sumatra), p.  
 8, 1860 (part). — Günther, Cat.  
 Fish. Brit. Mus., vol. 3, p. 434, 1861  
 (Malayan Peninsula material). —  
Day, Fishes of India, pt. 2, p. 349,  
 1876. — Klunzinger, Fische Roth.  
 Meer., p. 132, 1884 (part). — Day,  
 Fauna British India, vol. 2, p. 342,  
 1889 (part). — Ogilby, Ann. Queensland  
 Mus., no. 9, pt. 1, p. 26, 1908 (compiled).  
 — Weber and Beaufort, Fish. Indo  
 Austral. Archip., vol. 4, p. 242, 1922  
 (compiled). — Pellegrin, Mém. Acad.  
 Malgache, vol. 14, p. 173, 1933 (note in  
 footnote).

Red  
 200





at first then basal on most of rays  
soft fin above with 5 or 6 rather  
variable rows of dark spots.  
Caudal with some small dark or  
blackish spots on upper basal half  
and median dark streaks back over  
median rays. Anal with 5 dark  
basal blotches. Pectoral gray  
& ventral pale gray or whitish  
with most of short rays dark.

A. N. S. P., no. 60234. Kratt,  
South east Siam. December 1933.

Length 54 mm. Type.

A. N. S. P., nos. 60235 to 60238,  
paratypes, same data. Length 29  
to 50 mm. (latter with broken tail)

Closely related to Trichopsis  
vittatus (Valenciennes), but with  
more anal spines, or 8 compared  
with 6 or 7, and different coloration.  
All my examples have the thin

Depth 4; head 4. Snout 5 in head; eye 5, 2 in postorbital, with adipose lid posteriorly; maxillary exposed posteriorly; lips thin; interorbital  $2\frac{1}{2}$  in head, very slightly convex; preorbital with front edge nearly straight, neither toothed nor notched.

Scales 42 or 43 in lateral series; 13 transversely, <sup>22 predorsal forward to snout.</sup> Vertical fins without scales. Pectoral with long axillary scale, nearly half length of fin.

D. IV - I, 8, spinous dorsal origin at twelfth lateral scale or nearer snout tip than caudal base, first spines less than 2 in head, second dorsal origin at 25th lateral scale or third anal ray; A. III, 9; caudal slightly emarginate; pectoral reaches

first dorsal, much shorter than head; least depth of caudal peduncle less than 2 in head.

Bluish green above, silvery below. Dorsal and caudal with indistinct blackish margins.

Sometimes black spot superiorly at pectoral base. Length 162 mm. (Weber and Beaufort.)

Red Sea, Pinang, India, Malay Peninsula, East Indies, Tonkin.

2431

Genus Liza Jordan and Swain

Liza Jordan and Swain, Proc. U.S.  
Nat. Mus., vol. 7, p. 261, 1884. (Type  
Mugil capito Cuvier, orthotypic.)

Ellochelon Whitley, Austral. Zoologist,  
vol. 6, pt. 3, p. 7, August 1930.  
(Type Mugil vaiqiensis Duoy and  
Gaimard, orthotypic.)

Body oblong, more or less compressed. Eye rather large, lateral, eyelids free, without adipose formation and not extending on iris, so eye always exposed. Mouth more or less transverse, terminal or subinferior. Upper lip moderate. Jaws with one or few series of short, flexible ciliiform teeth. No teeth on palate. Preorbital more or less serrate. Stomach gizzard like. Scales large, cycloid. Anal spines.

Greatly like Mugil, but distinguished <sup>by</sup> the exposed eyes without gelatinous membranes.

Analysis of Species

2433

- a.<sup>1</sup> Preorbital without notch on front edge.
- b.<sup>1</sup> Lateral scales 24 to 27.
- c.<sup>1</sup> Fins grayish; anal rays 9. oligolepis.
- c.<sup>2</sup> Fins black, especially pectoral; anal rays 8 or 9. Twaigiensis.
- b.<sup>2</sup> Lateral scales 30 to 40 (rarely 43).
- d.<sup>1</sup> Anal rays 8 (varies 9 in Cascasia).
- e.<sup>1</sup> Pectoral shorter than head.
- f.<sup>1</sup> Predorsal scales 16; pectoral with axillary scale. Cascasia.
- f.<sup>2</sup> Predorsal scales 21. suppositus.
- f.<sup>3</sup> Predorsal scales 23 to 33; no axillary pectoral scale. ramada.
- e.<sup>2</sup> Pectoral longer than head; predorsal scales 21; pectoral with axillary scale. delicatus.
- d.<sup>2</sup> Anal rays 9 (9 to 11 in atherinoides).
- g.<sup>1</sup> Pectoral with dark spot at origin, also with axillary scale.
- h.<sup>1</sup> Lateral scales 31 to 36.
- i.<sup>1</sup> Lateral scales 31 to 33. buchanani.
- i.<sup>2</sup> Lateral scales 34. olivaceus.

- 2434
- i.<sup>3</sup> Lateral scales 36. amarulus.
- h.<sup>2</sup> Lateral scales 40. splendens.
- g.<sup>2</sup> Pectoral without dark spot at origin.
- f.<sup>1</sup> Pectoral less than head.
- k.<sup>1</sup> Pectoral with axillary scale.
- l.<sup>1</sup> Pectoral length 7 in entire fish. broussonnetii.
- l.<sup>2</sup> Pectoral length 5 in entire fish. seheli.
- k.<sup>2</sup> Pectoral without axillary scale.
- m.<sup>1</sup> Predorsal scales 13. Thomelli.
- m.<sup>2</sup> Predorsal scales 19 to 25.
- n.<sup>1</sup> Spinous anal below last third of depressed spinous dorsal. atherinoides.
- n.<sup>2</sup> Spinous anal well behind depressed spinous dorsal, opposite soft dorsal origin. macrolepis.
- m.<sup>3</sup> Predorsal scales 25 to 37. saliens.
- f.<sup>2</sup> Pectoral long as head.
- o.<sup>1</sup> Lateral scales 30. alatus.
- o.<sup>2</sup> Lateral scales 36. ramsayi.



d.<sup>3</sup> Anal rays 10.

2435

p.<sup>1</sup> Lateral scales 30; no  
pectoral axillary scale.  
cebamensis.

p.<sup>2</sup> Lateral scales 34.  
convexus.

p.<sup>3</sup> Lateral scales 35 to 38;  
no pectoral axillary scale.  
argenteus.

p.<sup>4</sup> Lateral scales 39 to 40;  
pectoral with axillary scale.  
australis.

b.<sup>3</sup> Lateral scales 42 to 46; no pectoral  
axillary scale.

g.<sup>1</sup> Depth  $3\frac{7}{8}$ . hamiltoni.

g.<sup>2</sup> Depth  $4\frac{3}{5}$  to  $4\frac{3}{4}$ .  
auratus.

a.<sup>2</sup> Preorbital with deep notch; lateral  
scales 32 or 33; no pectoral axillary  
scale; anal rays 9. joloensis.

2436

Mugil oligolepis Bleeker

Mugil oligolepis Bleeker, Nat. Tijds.  
ned. Indië, vol. 16, p. 275, 1858  
(type locality, East Indies; diagnosis  
in key), p. 434 (Soengidoeri,  
Borneo); Act. Soc. Sci. Ind. néerl.  
(Borneo), vol. 6, p. 40, 1860 (Borneo).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 3, p. 449, 1861 (copied). — Day,  
Fishes of India, pt. 2, p. 358, pl.  
76, fig. 2, 1876; Fauna British  
India, Fishes, vol. 2, p. 355, 1889.

— Weber, Zool. Ergebn. ned. Ost  
Ind., vol. 3, p. 451, 1894 (Borneo;  
Sumbawa). — Duncker, Mitteil.  
naturh. Mus. Hamburg, vol. 21, p.

166, 1903 (1904) (Iruar River). —  
~~Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 47, p. 297, 1925 (Delagoa Bay).~~  
— Savant, Verw. Ocean. Pech. Indo  
Chine, p. 171, 1929 (Cochin - China;

Depth  $2\frac{2}{3}$  to  $3\frac{1}{8}$ ; head  $2\frac{2}{3}$  to  $2\frac{3}{4}$ , width  $2\frac{1}{3}$  to  $2\frac{4}{5}$ . Snout  $3\frac{2}{5}$  to  $3\frac{3}{4}$  in head from snout tip; eye  $4\frac{1}{10}$  to  $5\frac{1}{8}$ ,  $1\frac{1}{10}$  to  $1\frac{1}{2}$  in snout, greater than interorbital; maxillary reaches  $\frac{3}{5}$  to  $\frac{2}{3}$  in eye, expansion  $1\frac{2}{5}$  to  $1\frac{3}{4}$ , length  $2\frac{1}{5}$  to  $2\frac{2}{5}$  in head from snout tip; teeth villiform, in bands in jaws, on vomer, palatines and tongue; interorbital  $6\frac{1}{8}$  to  $6\frac{3}{4}$ , convex; hind preopercle edge denticulate, with strong spine at angle, lower edge entire. Gill rakers 7 + 13, lanceolate,  $1\frac{2}{3}$  in eye; 5 upper and 6 lower rudimentary.

Scales 43 to 46 in lateral line to caudal base and 13 to 17 more on latter, 5 above, 7 below, 23 or 24 predorsal, 9 or 10 rows across cheek to preopercle angle; fin bases broadly with fine scales; maxillary, naked,

— Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 254, May 1908 (Praslin, Seychelles).

— Weber and Beaufort, Fish. Indo Austral. Archip., vol. 4, p. 245, 1922 (East Indies). — Vinciguerra, Ann. Mus. Civ. Stor. Nat. Genova, ser. 3, vol. 10, p. 397, 1921-26 (Sarawak). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 77, p. 209, 1925 (Delagoa Bay).

— Barnard, Ann. South Afric. Mus., vol. 21, p. 1023, October 1927 (note).

— Tirant, Serv. Océan. Pech. Indo Chine, p. 171, 1929 (Cochin China; Saigon).

— Chevey, Inst. Océan. Indo Chine, 19<sup>e</sup> note, p. 20, August 25, 1932 (Cochin China).

— Pellegrin, Mém. Acad. Malgache, vol. 14, p. 181, 1933 (compiled).

9 or 10 above, 16 or 17 below, 40 to 45 predorsal forward opposite front eye edge, 7 or 8 rows on cheek to preopercle ridge though none on flange. Scales with 7 to 11 basal radiating striae; 80 to 103 short weak apical denticles, with 12 to 12 transverse series of basal elements; circuli very fine.

D. XII, 10, I, fourth spine  $2$  to  $2\frac{1}{2}$  in head length, third ray  $2\frac{2}{3}$  to  $3$ ; A. III, 8, I, third spine  $2\frac{4}{5}$  to  $3$ , first ray  $3\frac{1}{5}$  to  $3\frac{1}{3}$ ; caudal  $2\frac{3}{4}$  to  $3$  in pectoral  $2\frac{3}{4}$  to  $3$ ; rest of body, deeply forked; least depth of caudal peduncle  $2\frac{7}{8}$  to  $3$

Saigon). — Chevey, Inst. Océan.  
Indo Chine, 19<sup>e</sup> note, p. 20, August  
25, 1932 (Cochin China).

Liza oligolepis Fowler, Proc. Acad.  
Nat. Sci. Philadelphia, vol. , p.  
496, fig. 10, 1905 (Baram, Borneo).  
— Jordan and Richardson, Bull.  
Bur. Fisher., vol. 27, p. 244, 1907  
(1908) (Iloilo).

Mugil dussumieri (not Valenciennes)  
Bleeker, Journ. Ind. Archip., vol. 2,  
p. (633) 637, 1848 (Bima, Sumbawa).

Mugil macrolepis (not Rüppell)  
Bleeker, Nat. Tijds. Ned. Indië, vol.  
3, p. (409) 422, 1852 (type locality,  
Pamangbat, Borneo; Sampit) [as a  
new species].

Psammoperca datnioides Richardson,  
Ichth. Voy. Erebus and Terror, 1846, p.  
116, pl. 57, figs. 1-2. Australia.

Enidom chinensis Müller and Troschel,  
Horae Ichth., vol. 3, 1849, p. 21. Manila.

— Günther, Cat. Fishes Brit. Mus., vol. 1,  
1859, p. 68 (copied). — Meyer, Ann. Soc.  
Españ. Hist. Nat. Madrid, vol. 14, 1885,  
p. 8 (north Celebes, Manila Bay, Cebu).

— Gorgoza, Ann. Soc. Españ. Hist. Nat.  
Madrid, vol. 17, 1888, p. 281 (Manila  
Bay; Cebu). — Elera, Cat. Fauna Filip.,  
vol. 1, 1895, p. 457 (Luzon, Manila,  
Lingayen, Pangasinan, Cebu).

Depth  $2\frac{3}{4}$  to  $3\frac{1}{5}$ ; head  $3\frac{1}{3}$  to  $3\frac{3}{5}$ ,  
width  $1\frac{1}{2}$  to  $1\frac{3}{5}$ . Snout  $3\frac{3}{4}$  in  
head; eye  $3\frac{3}{4}$  to  $4\frac{1}{6}$ , little less  
than snout,  $1\frac{1}{4}$  in interorbital;  
maxillary not reaching eye, exposed,  
length  $3\frac{1}{2}$  to 4 in head; upper  
lip width 2 in pupil; mandibular  
angle would form broadly obtuse;  
interorbital  $2\frac{1}{4}$  to  $2\frac{2}{5}$  in head,  
broad, slightly convex; lower and  
hind preorbital edge well dentate.  
Gill rakers 19 + 40, finely lanceolate,  
2 in gill filaments, which  $\frac{4}{8}$  of  
orbit.

Scales 24 to 27 in lateral  
axial series to caudal base; 10 or  
11 transversely, 19 or 20 predorsal.



23095 and 23096. Romblon. March 26,  
1908. Length 50 to 87 mm.

15774. Sacol Island. September 9, 1909.  
Length 86 mm.

12683. San Miguel Island, Tabaco Bay,  
Luzon. June 4, 1909. Length 118 mm.

23983. Santa Cruz, Marinduque Island.  
April 24, 1908. Length 79 mm.

23999. Vitanki reef. September 24,  
1909. Length 83 mm.

23052. Surigao, Mindanao. May 8, 1908.  
Length 96 mm.

23678. Tapiantana Island, south of  
Zamboanga. September 13, 1909. Length 101 mm.

8668. Tara Islands. December 15, 1908.  
Length 164 mm.

Soft vertical fins finely scaled basally. No axillary pectoral scale. Scales with 8 or 9 basal radiating striae; 113 to 132 apical denticles, with 3 series of basal elements; circuli very fine.

D. IV - I, 8, I, first spine  $1\frac{1}{4}$  to  $1\frac{2}{3}$  in head, first ray  $1\frac{3}{4}$  to  $1\frac{5}{6}$ ; A. III, 9, I, third spine 2, first ray  $1\frac{1}{2}$ ; caudal 1, emarginate behind; least depth of caudal peduncle 2; pectoral  $1\frac{1}{2}$  to  $1\frac{2}{3}$ , rays II, 13; ventral rays I, 5, fin  $1\frac{1}{3}$  to  $1\frac{2}{5}$  in head.

Gray brown above, below whitish. Each row of scales on back and sides with longitudinal

17166. Port Matalvi, Palawan Island.

November 23, 1908. Length 64 mm.

23099. Port Palapag, Luzon. <sup>June 2, 1909.</sup> Length 76 mm.

14601. Port Palapag. June 3, 1909.

Length 142 mm.

8 examples. Port Uson, Mayampayan Island. December 17, 1908. Length <sup>[921.]</sup> 44 mm.

11754. Tujada Bay. May 15, 1908. 682

Length 105 mm.

18975. Ininalasag Island, Masamat Bay, Luzon. June 12, 1909. Length 140 mm.

23556 to 23558. Rapurapur Island.

June 22, 1909. Length 44 to 87 mm.

23865. Rapurapur Island. June 29, 1909.

Length 71 mm.

10 examples. Reef south lagoon,

Toumindao Island, Sulu Archipelago.

February 26, 1908. Length 67 to 109 mm.

gray streak. Dorsals, caudal and pectoral grayish, other fins whitish.

Portuguese East Africa, Seychelles, India, Malacca, East Indies, Indo China, Philippines.

in head; ventral  $1\frac{1}{2}$  to  $1\frac{3}{5}$ .

Back drab brown, sides and below paler and under surfaces of both head and body whitish. Iris dull yellowish white. Fins uniformly pale brown.

2442

Three examples. Bacoor, Luzon.

June 15, 1908. Length 30 to 93 mm. Scales 29.

Seventeen examples. Basud River in  
fresh water, Luzon. June 15, 1909.

Length 35 to 65 mm. No adipose eyelids.

Scales 27. No axillary pectoral scale.

A. III, 9, I.

Nine examples. Bulan Island,  
Samales Group. September 13, 1909.

Length 52 to 67 mm. Scales 27.

Thirteen examples. Cebu River,  
Catanduanes Island. June 9, 1909.

Length 32 to 98 mm.

No adipose eyelids. Scales 26 to 29.

No axillary pectoral scale. A. III, 9, I.

In very young spinous dorsal and  
end of soft dorsal in front  
black.

~~14754.~~ Van Juanico Straits, Leyte.  
April 13, 1908. Length 40 mm.

20627. Sirinao Island, Hakoda Bay,  
Palawan. December 30, 1908. Length 45 mm.

49 examples. Tara Island. December  
15, 1908. Length 44 to 69 mm.

3 examples. Tara Island. December  
15, 1908. Length 24 or 25 mm. [810.]

23621. Tataan Island. February 20,  
1908. Length 40 mm. [242.] Stripe along  
back amber yellow, contains line of  
purple spots from head to caudal and  
thin silvery line which merges into  
broad band of silvery, which extends  
from eye to caudal base. Below broad  
amber yellow band from snout to

Seven examples. Camp Overton,  
Mindanao. August 15, 1909. Length  
32 to 37 mm. Scales 28 mm.

Seven examples. Capunuyfugan,  
Mindanao. May 9, 1909. Length 29  
to 72 mm.

Thirteen examples. Caligan River  
three miles from mouth, near Paluan  
Bay, Mindoro Strait. December 11, 1908.  
Length 33 to 64 mm. Scales 28.

Two examples. Davao, Mindanao.  
May 16, 1908. Length 53 to 55 mm.  
Scales 25 to 27.

Two examples. Iloilo River, shore  
above Iloilo, Panay. June 2, 1908.  
Length 33 to 59 mm.



stripe across maxillary to mandible tip; branch from last carried in front of eye, through front nostril, there joined behind pectoral base, by 6 or 8 short bars of similar color; reddish stripe behind ventral base, follows along below anal, joins its fellow and continues along lower caudal edge. First dorsal olivaceous, black spot at tip of soft membranes, base of second and all of third reddish; second dorsal pink, more or less distinct reddish bar at base. Anal similar. Caudal reddish. Paired fins reddish, ventrals tipped with black.

2444

Twenty examples. Manila Bay, Luzon.  
December 6, 1907. Length 21 to 58 mm.  
No adipose eyelids. Scales 28. No  
axillary pectoral scale.

Two examples. Manila Harbor.  
December 30, 1907. Length 52 to 54 mm.

Four examples. Mansalay, Mindoro,  
in fresh water. June 4, 1908. Length 48  
to 60 mm. Scales 28.

Two examples. Hogas Point, Panay.  
February 4, 1908. Length 37 or 38 mm.  
Scales 28? h. III, 9, I.

Two examples. Hakoda Bay, in  
river, Palawan. December 31, 1908.  
Length 100 to 110 mm. Scales 27.

olivaceous, sides gray. Lower head and breast white, latter with reddish wash. Stripes on sides dusky orange, brightest on head; first begins behind snout, passes above eye, follows under lateral line to caudal base and joined by third stripe below, which begins behind upper part of orbit and runs into first below front of second dorsal; pair of short stripes on nuchal region, above first, become single across forehead; pair of broad stripes, third and fourth in order, behind eye to caudal; upper even with middle of eye and continuing forward as blackish

62 examples. Paluan River, Mindoro.  
 December 13, 1908. Length 32 to 62 mm.  
 No adipose eyelids. Scales 26. No  
 axillary pectoral scale. Maxillary concealed.  
 Pectoral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ . A. III, 9, I.  
 Brown above, silvery below. No  
 markings.

One example. Panabutan Bay,  
 Mindanao. February 6, 1908. Length 92  
 mm. Scales 28.

Six examples. Papatag Island,  
 Tawi Tawi. Length 22 to 31 mm.  
 Scales 27. A. III, 9, I.

Two examples. Pasacao River at  
 Pasacao, Luzon. March 9, 1909. Length  
 98 to 104 mm. Scales 28.

narrow stripes on upper side and like most of others tinted with reddish bronze. narrow black line on back below dorsal. Vertical and paired fins reddish. Second dorsal spine yellow, membrane crimson dotted with black.

4 examples. Reef opposite Cebu. April 7, 1908. Length 20 to 24 mm. [510.]

Stripes dull vermilion, interspaces pearly. Tip of lower jaw black. Fins slightly reddish. Tip of first dorsal somewhat dusky.

8 examples. Saboon Island, Ragay Bay, Ragay Gulf, Luzon. March 10, 1909. Length 26 to 30 mm. [1293.] Back

2446

Fifteen examples. Port Dupon, in  
brackish river, Leyte. March 17, 1909.  
Length 35 to 47 mm.

4987 to 4989. Ragay River, Ragay  
Gulf, Luzon. March 10, 1909. Length  
36 or 37 mm.

Four examples. Santiago River,  
Pagapas Bay, Luzon. February 20, 1909.  
Length 52 to 77 mm. Scales 29.

Five examples. Tayabas River  
near mouth, Marinduque. February 25,  
1909. Length 18 to 30 mm.

77 examples. Zamboanga Canal.  
October 8, 1909. Length 18 to 118 mm.  
Scales 28.

Four examples. Gorontalo River, Gulf of  
Tomini, Celebes. November 15, 1909. Length  
35 to 40 mm.

second membrane orange; second dorsal, anal and caudal pink; paired fins pink, pectorals paler.

1 example. Port Janelo, Luzon Island.

July 13, 1908. Length 44 mm. [679.]

Yellowish olive above, pale below.

Broad dark stripe through eye from snout tip to caudal; another parallel from tip of mandible and connected through middle of side by 8 cross bars with upper dark stripe, enclosing rounded, oblong, silvery spaces. Branch from opercle across pectoral base along abdominal region, below anal base uniting as median line under caudal peduncle. Two

2447

~~gray streak. Dorsals, caudal  
and pectoral grayish, other  
fins whitish.~~

A. N. S. P., six examples. Bar<sup>a</sup>m.  
Dr. William H. Furness 3rd. Wistar  
Inst. Anat. Largest 75 mm.

A. N. S. P., one example. Delagoa Bay,  
Portuguese East Africa. H. W. Bell  
Marley: Length 128 mm.



23842,

23841 to 23844. Pandanon Island.

March 23, 1909. Length 57 to 154 mm.

22029 and 22030. Panpan Point, Tara

Island, between Jolo and Tawi Tawi.

September 20, 1909. Length 95 to 110 mm.

10656. Polloc, Mindanao. May 22, 1908.

Length 15 1/2 mm.

14366. Port Caltom, Busuanga Island.

December 15, 1908. Length 135 mm.

18719. Port Dupon, Leyte. March 17,  
1909. Length 72 mm.

19957 and 20534. Port Galera, Mindoro.

October 27, 1909. Length 77 to 111 mm.

10483. Port Maricaban, Luzon.

July 21, 1908. Length 110 mm.

Mugil vaigiensis Duoy and Garnard

Mugil vaigiensis Duoy and Garnard,  
Voy. Uranie, Zool., p. 337, pl. 59,  
fig. 2, 1825 (type locality, Waigiu).

— Bleeker, Verslag. Akad. Wet.  
Amsterdam, ser. 2, vol. 2, p. 300,  
1868 (Waigiu); ned. Tijds. Dierk.,  
vol. 4, p. 143, 1873 (1874) (China).

— Weber and Beaufort, Fish. Indo  
Austral. Archip., vol. 4, p. 244, 1922  
(Pulu Weh; Java Sea, Nusa Kembangan;  
Kangeang; Saleyer; Paternoster  
Islands; Flores; Ambon; Batjan;  
Waigiu; Sorong, New Guinea).

(over sea) ~~X~~ Stejneger and Mohr,  
Mitteil. Naturh. Mus. Hamburg,  
vol. 42, p. 131, figs. 4-5 (young),  
1926 (Sungul, Saka-Nuro,  
Admiralty Islands; Lieblich  
Islands, south west coast,

Mugil vaigiensis Duoy and Gaimard

Mugil vaigiensis Duoy and Gaimard,  
Voy. Uranie, Zool., p. 337, pl. 59,  
fig. 2, 1825 (type locality, Waigiu).

— Bleeker, Verslag. Akad. Wet.  
Amsterdam, ser. 2, vol. 2, p. 300,  
1868 (Waigiu); hed. Tijds. Dierk.,  
vol. 4, p. 143, 1873 (1874) (China).

— Duncker, Mitteil. naturh. Mus.  
Hamburg, vol. 21, p. 166, 1903 (1904)  
(Kuala Selangor; Changi). —

Boulenger, Cat. Fresh Water Fish.

Africa, vol. 4, p. 97, fig. 59, 1916

(Red Sea). — Duncker and Mohr,

Mitteil. naturh. Mus. Hamburg,

vol. 42, p. 131, figs. 4-5 (young),

1926 (Drungul, Saka-Nuro,

Admiralty Islands; Lieblich

Islands, south west coast,

acant  
not  
body  
broken

black blotch behind gill opening.

nematocant

b.<sup>2</sup> Lethrinus. Second dorsal spine not elongated.

c. Black lateral blotch present on body.

d. Ten or 11 dark vertical bands, broken

vol. 4, p  
Linnæus  
Hamburg  
Kuala  
Boulenger  
Africa,  
Red Sea  
tail.

Centropomus scorpaenoides Cuvier,  
Hist. Nat. Poiss., vol. 3, 1829, p. 48.  
Waigiu; New Guinea. — Richardson,  
Ann. Mag. Nat. Hist. London, vol. 9,  
1842, p. 120.

Myriodon scorpaenoides Barneville,  
Rev. Zool., 1847, p. 130.

Sebastes stoliczkae Day, Fishes of India,  
pt. 1, 1875, p. 148, pl. 36, fig. 1. Nicobars.

Gennadius stoliczkae Jordan and Seale,  
Bull. Bur. Fisher., vol. 26, 1906 (1907),  
p. 37 (Panay).

Rhabdosebastes stoliczkae Fowler and  
Bean, Proc. U. S. Nat. Mus., vol. 62, 1922,  
p. 60 (Cebu).

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Simpson Harbor, Linden Harbor,  
Aien Bay, New Pommernia;  
Friedrich Wilhelm Harbor,  
New Guinea); Proc. Acad. Nat.  
Sci. Philadelphia, vol. 79, 1927, p.  
264 (Philippines; types of  
Mugil ogilbyi)<sup>Bull.</sup>; Bishop Mus.,  
no. 38, p. 8, 1927 (Christmas and  
Palmyra Islands); Mem. Bishop  
Mus., vol. 10, p. 124, fig. 27, 1928  
(Rarotonga, Mangareva, Raiatea,  
Guam, Tuamotus, Faté, Apia,  
Funafuti, Tonga, Makemo,  
Tongatabu, Rangiroa, Suva,  
Marshalls, Moen, Society Islands,  
Kingsmills); vol. 11, no. 5, p. 324,  
1931 (reference). — Pellegrin, Mem.  
Acad. Malgache, vol. 14, p. 180, fig.  
98, 1933 (type; Madagascar).

- Centrogenys waigiensis Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1873-76, p. 68 (Java, Singapore, Bintang, Banka, Bawean, Celebes, Amboina, Timor, Waigiu). — O'Shaughnessy, Zool. Record, 1876, fishes, p. 10. — Vinnyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 497 (Riu Kiu). — Beaufort, Bijdr. Dierk., Amsterdam, 1913, p. 111 (Macassar).
- Centrogenys waigiensis Boulenger, Cat. Fishes Brit. Mus., vol. 1, 1895, p. 147 (Singapore, Cebu, Torres Straits, Mabuiag Island, Port Essington, Freycinet's Harbour, Port Mable, Australia). — Fowler, Proc. Acad. Nat. Sci. Phila., 1907, p. 250 (Singapore). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 256 (Cuyo). — Weber, Siboga Exped., vol. <sup>59</sup> ~~65~~ <sup>Fishes</sup>, 1913, p. 198 (Macassar; Saleyer; Dobo, Aru Islands).

Mugil waigiensis Bleeker, Nat.

Tijds. Ned. Indië, vol. 19, p. 331, 1859

(Batjitan, Java); vol. 22, p. 101, 1860

(Singapore), 1860 p. 108 (Muntok,

Banka). — ~~Martens~~ Günther, Cat.

(Act. Soc. Sci. Ind. Néerl., vol. 8

(Sumatra), p. 12, 1859 (Benculen);

Nat. Tijds. Ned. Indië,

Fish. Brit. Mus., vol. 3, p. 435, fig.

(head), 1861 (Red Sea, Pinang,

East Indies, North west Australia,

South Australia). — Day, Fishes

of Malabar, p. 144, 1865. —

Kner, Reise Novara, Fische, p. 224,

1865 (Madras). — Martens, Verh.

zool. bot. Ges. Wien, vol. 16, p. 378,

1866 (Koseir). — Klunzinger,

Verh. zool. bot. Gesell. Wien, vol.

20, p. 828, 1870 (Red Sea). —

Castelnau, Proc. Zool. Acclimat.

(Bleeker, Verslag. Afsad. Wet. Amsterdam, ser. 2, vol. 2,

p. 293, 1868 (Rio, Bintang).



Depth  $2\frac{2}{5}$  to  $2\frac{7}{8}$ ; head  $2\frac{1}{4}$  to  $2\frac{1}{3}$ ,  
 width 2 to  $2\frac{1}{8}$ . Snout  $5\frac{1}{8}$  to  $5\frac{1}{2}$   
 in head; eye  $3\frac{1}{3}$  to  $3\frac{1}{2}$ , greater than  
 snout or interorbital; maxillary  
 reaches opposite eye center, expansion  
 $\frac{2}{5}$  to  $\frac{1}{2}$  in eye, length  $2\frac{3}{4}$  to  $2\frac{4}{5}$  in  
 head; teeth finely villiform, in  
 bands in jaws, on vomer and palatines;  
 interorbital  $5\frac{1}{2}$  to  $5\frac{2}{3}$ , convex; hind  
 preopercle edge finely serrated  
 and 3 large antrorse spines on  
 lower edge - graduated down from  
 first or anterior which largest;  
 opercle ends in single sharp spine.  
 Gill rakers 5 + 11, asperous stumps.  
 Scales 40 or 41 in lateral line to  
 caudal base and 3 or 4 more on  
 latter, 6 above, 11 below, 23 predorsal,  
 6 rows across cheek; above lateral  
 line scales in oblique rows; small

Zool. Soc. Victoria, vol. 1, p. 140,  
 1872 (Victoria); Rec. London Intern.  
 Exhib., ~~vol. 1~~ pt. 7, no. 5, p. 14, 1873  
 (Victoria). — Martens, Preuss.  
 Exped. Ost Asien, vol. 1, p. 395,  
 1876 (Singapore; Macassar). —  
Day, Fishes of India, pt. 2, p.  
 359, pl. 73, fig. 4, 1876 (Bombay).  
 — Günther, Journ. Mus. Godeffroy,  
 vol. 5, pt. 11, p. 216, pl. 121, fig.  
 B, 1876 (Society Islands; Tahiti).  
 — Klunzinger, Sitzs. Ber. Akad.  
 Wiss. Wien, math.-naturw. Kl.,  
 vol. 80, pt. 1, p. 315, 1879 (1880)  
 (Port Moreson). — Macleay, Proc.  
 Linn. Soc. New South Wales, vol.  
 4, p. 420, 1880 (Port Darwin; Cape  
 York). — Günther, Rep. Voy.  
Challenger, vol. 1, pt. 6, p. 44, 1880  
 (Somerset). — Macleay, Proc.

ventral and 3 or 4 across anal and caudal. Belly and under surface of abdomen uniform pale to whitish.

India, East Indies, Philippines, Rio Kiu, Australia. The original figure by Day and Gaimard is poor. It shows but 3 dark bars on the pectoral and 2 on the ventral, though they say "les taches des pectorales et des ventrales tendent à former trois lignes régulières."

21764 and 21765. Cebu market. March 20, 1909. Length 102 to 112 mm.

13983 and 13984. Iloilo market. May 31, 1908. Length 110 to 114 mm.

Example. Light Point, Balayan Bay. January 18, 1908. Length 70 mm. 19814.

Point San Vicente, northern Luzon. November 18, 1908. Length 100 mm.

Linn. Soc. New South Wales, vol.  
 5, pt. 2, p. 47, 1881 (reference);  
~~Magalog, Borneo~~ vol. 8, p. , 1883  
 (Lower Burdekin River). —  
Klunzinger, Fische Roth. Meer.,  
 p. 133, 1884. — Day, Fauna British  
 India, Fishes, vol. 2, p. 356, 1889.  
 — Sauvage, Hist. nat. Madagascar,  
 Poiss., p. 401, pl. 41a, figs. 5-a,  
 1891 (Madagascar). — Weber, Zool.  
 Ergebn. Ned. Ost Ind., vol. 3,  
 p. 451, 1894 (Borneo, Banka,  
 Sumatra, Java, Madura, Celebes,  
 Batjan, Amboina, Ternate). —  
Steindachner, Abhand. Senckenberg.  
 Ges., vol. 25, p. 435, 1900 (Ternate).  
 — Stead, Addit. <sup>Fish</sup> Fauna New  
 South Wales, vol. 1, p. —, 1907  
 (Cleveland Bay). — Weber,  
 Siboga Exped., vol. 57, Fische, p. 137, 1913  
 (Paternoster Island; Saleyer).

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Genus Plectropomus Oken.

Plectropomus Oken, Isis, 1817, p. [1182]

1782 (or <sup>Les</sup> Plectropomes Cuvier, Règne  
Animal, vol. 2, 1817, p. 277). Type

Bodianus maculatus Bloch, designated  
by Jordan, Tanaka, Snyder, Journ.

College Sci. Tokyo, vol. 33, 1913, p. 152.

Plectropoma (Cuvier) Quoy and Gaimard,  
Voy. Uranie, Zool. <sup>pt. 7</sup> 1824, p. 318. Type

Plectropoma punctatum Quoy and Gaimard  
= Bodianus maculatus Bloch, monotypic.

Paracanthistius Bleeker, Verh. Akad.

Wet. Amsterdam, vol. 14, 1874, p. 13.

Type Holocentrus leopardus Lacépède,  
orthotypic.

Body elongated, compressed. Mouth  
large, protractile. Maxillary exposed,  
with supplemental bone. Teeth in

2453

— Moulenger, Cat. Fresh Water Fish. Africa,  
vol. 4, p. 97, fig. 59, 1916 (Red Sea)

— Vinciguerra, Ann. Mus. Civ. Stor.  
Nat. Genova, ser. 3, vol. 10, p. 596,  
1921-26 (Sarawak).

— Barnard, Ann. South Afric. Mus.,  
vol. 21, pt. 1, p. 310, June 1925 (Natal;  
Delagoa Bay; Chinde).

Dr. George V. Myers calls my attention  
to my genus Pteroglanis in these  
Proceedings, vol. 85, 1934, p. 92. It  
is preoccupied by Pteroglanis  
Eigenmann and Peirson 1924 (Indiana  
University Studies no. 64) for a South  
American silurid. I therefore prop

Pteropsoglanis new genus

Type Pteropsoglanis horai new species

As it is sufficiently described,  
diagnosed and figured in the  
above referred to paper, they  
may be consulted there for details  
and characters.

Mugil (Liza) waigiensis McCulloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 141, July 7, 1925 (reference).

Mugil wageensis Bleeker, Verlag. Akad. Wet. Amsterdam, vol. 14, p. 101, 1862 (Batjan).



scales on bases of most fins.  
Scales with 7 basal radiating  
striae; 66 to 68 apical denticles,  
with 3 to 5 transverse series of  
basal elements; circuli fine.

D. XIV, 10, I or 11, I, third spine  $2\frac{1}{5}$   
to  $2\frac{1}{4}$  in total head length, fourth  
ray  $2\frac{1}{3}$  to  $2\frac{3}{4}$ ; A. III, 5, I, second  
spine  $1\frac{1}{3}$  to  $1\frac{2}{5}$ , first ray 2 to  $2\frac{1}{5}$ ;  
caudal  $1\frac{2}{3}$  to  $1\frac{4}{5}$ , rounded; least  
depth of caudal peduncle 4 to  $4\frac{1}{3}$ ;  
pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; ventral  $1\frac{1}{2}$  to  
 $1\frac{3}{5}$ .

Pale brown, dark streaks  
extending along each scale series  
in old Jalcohohe specimens. Body  
with 3 oblique dark bands, ill  
defined and very variable. Dark  
or deep brown blotches and cross  
bars on fins, 4 on pectoral and

Liza waigiensis Jordan and Seale,  
Bull. Bur. Fisher., vol. 25, p. 218,  
1905 (1906) (reference). — Seale,  
Ocean. Pap. Bishop Mus., vol. 6, no.  
1, p. 15, 1906 (Mangareva; Faté;  
Shortland Island; Raiatea;  
Rarotonga). — Jordan and Seale,  
Bull. Bur. Fisher., vol. 26, p. 11,  
1906 (1907) (Cavite). — Seale and  
Bean, Proc. U. S. Nat. Mus., vol. 33,  
p. 240, 1907 (Zamboanga). — Fowler,  
Copeia, no. 58, p. 62, June 18, 1918  
(Philippines). — Reeves, Journ. Pan  
Pac. Res. Inst., vol. 3, no. 2, p. 8,  
1927 (Shanghai). — Tirant, Serv.  
Océanog. Pech. Indo Chine, p. 171,  
1929 (Saigon). — Chu, Biol. Bull.  
St. John's Univ., no. 1, p. 105, January  
1931 (reference). — Borodin, Bull.  
Vanderbilt Marine Mus., vol. 1, art. 3,  
p. 76, 1932 (Surabaya).

jaws in several series, inner movable,  
 depressible, hinged at bases; very  
 strong front canines in jaws and  
 on side of mandible; teeth on vomer  
 and palatines; tongue smooth.  
 Preopercle entire or finely serrate  
 behind, with antrorse spines on  
 lower edge. Opercle with 3 spines.  
 Gill membranes separate. Pseudobranchia  
 present. Gill rakers moderate.  
 Vertebral 24, of which 14 caudal.  
 Scales very small, roughish but  
 not ciliated. Head partly scaled,  
 snout naked. Lateral line feebly  
 marked, tubes very short and  
 straight, scales ciliated. Dorsal  
 with 6 to 8 spines, rays 11 to 12,  
 spinous fin nearly long as soft fin.  
 Anal with 3 spines very feeble,  
 and flexible, rays 8. Caudal

Liza vaigiensis Kendall and  
Goldsbrough, Mem. Mus. Comp.  
 Zool., vol. 26, p. 257, 1911 (Suva;  
 Funafuti; Marshalls; Moen;  
 Makemo; Rangiroa). — Whitley,  
 Journ. Pan Pac. Res. Inst.,  
 vol. 3, no. 1, p. 12, January-March  
 1928 (Santa Cruz Islands). —  
McCulloch, Mem. Austral. Mus.,  
 vol. 5, pt. 1, p. 116, June 29, 1929 (reference).

Ellochelon vaigiensis Whitley, Rec.  
 Austral. Mus., vol. 18, no. 6, p. 335,  
 April 20, 1932 (note on Castelnau's  
 material).

truncate or emarginate. Pectoral rays 16 to 18, symmetrical, rounded. Ventral with feeble, flexible spine, below pectoral, fins close together.

Indian and western Pacific Oceans. Although Boulenger admits but two species our materials seem to vindicate the three of Bleeker, besides showing another which we describe as new.

Mugil macrolepidotus Rüppell,  
Atlas Reise nordl. Afrika, Fische,  
p. 140, pl. 35, fig. 2 (type locality,  
Sandy bays in southern half of Red Sea).

— Valenciennes, Hist. Nat. Poiss.,  
vol. 11, p. 134, 1836 (Waigiu; Borabora;  
Vanicolo); — Jouan, Mém. Soc. Sci.  
Nat. Chérbourg, vol. 8, p. 316, 1861  
(New Caledonia).

{ Cantor, Journ. Asiatic Soc. Bengal,  
vol. 18, pt. 2, p. 1077, 1849 (1850)  
(Sea of Pinang).

Analysis of the species.

a. Plectropomus. Soft dorsal and anal without front lobes distinctly marked and though front rays highest edges of fin slope obliquely back; body without dark vertical blue lines on flanks.

b. Caudal truncate; body with blue dark edged spots, moderate in size.

truncatus

b.<sup>2</sup> Caudal emarginate or lunate; body spotted or dotted with blue.

c. Body with pale blue dark edged spots of moderate size and sometimes with 5 dark brown cross bands. maculatus

c.<sup>2</sup> Body with very numerous, small, dark edged dots. leopardus

a.<sup>2</sup> Pleuroperca new subgenus. Soft dorsal and anal with distinct front lobes, edges of fins emarginate; body with

Mugil melanochir Valenciennes,  
Hist. Nat. Poiss., vol. 11, p. 143, 1836  
(type locality, Java; "mer des Indes",  
Sumatra).

— Bleeker, Verh. Batavia. Genoot.  
(Madura), vol. 22, p. 5, 1849  
(Bangcallang); Nat. Tijds. Ned.  
Indië, vol. 3, p. (409) 423, 1852

(Sampit; Batavia, Samarang,  
Surabaya, Kammal, Padang, Banda),  
p. 445 (Banka), p. 717 (Gessingassam  
at Koba, Banka); Verh. Batavia.

Genoot. (hal. Ich. Bengal), vol. 25,  
p. 48, 1853 (reference); Nat. Tijds.  
Ned. Indië, vol. 7, p. 361, 1854

(Batjan); vol. 10, p. 347, 1856 (Rio,  
Bintang); vol. 12, p. 193, 1856

(Ternate); vol. 13, p. 479, 1857  
(Prigi, Java); Act. Soc. Sci. Ind.  
Néerl., vol. 2, no. 7, p. 5, 1857 (Amboina).



variable vertical blue lines on flanks.  
oligacanthus

Type Plectropoma oligacanthus Bleeker.  
Πλευρά, rib, with reference to the blue  
parallel lines on the flanks; Πέρκη,  
perch.

vol. 3, no. 5, p. 2, 1857-58 (Macassar);  
hat. Tijds. Ned. Indië, vol. 15, p.  
201, 1858 (Goram).

Subgenus Phetropomus Oken

Soft dorsal and anal without front lobes distinctly marked and though front rays highest edges of fin slope obliquely back. Body without dark vertical lines on flanks.

Mungil pedaraki Valenciennes,  
 Hist. Nat. Poiss., vol. 11, p. 137,  
 1836 (~~type locality~~),

— Bleeker, Verh. Batavia. Genoot.  
 (Nat. Ichth. Bengal), vol. 25, p. 48,  
 1853 (reference). — Günther, Cat.  
 Fish. Brit. Mus., vol. 3, p. 410,  
 1861 (reference).

on Pedaraki soweri <sup>v</sup>Russell,  
 Fishes of Coromandel, vol. 2, p. 66,  
 pl. 182, 1803, type locality,  
 Vizagapatam).

Plectropomus truncatus, new species

Depth  $3\frac{1}{8}$  to  $3\frac{4}{5}$ ; head  $2\frac{3}{5}$  to  $2\frac{4}{5}$ ,  
width  $2\frac{1}{4}$  to  $2\frac{2}{3}$ . Snout  $3\frac{3}{4}$  to  $4\frac{3}{5}$  in  
head from snout tip; eye 4 to  $7\frac{1}{2}$ , 1  
to  $2\frac{1}{3}$  in snout,  $1\frac{2}{5}$  to  $1\frac{7}{8}$  in interorbital,  
greater than interorbital in young;  
maxillary reaches  $\frac{3}{5}$  in eye to little  
beyond; expansion 1 to  $1\frac{3}{4}$  in eye,  
length 2 to  $2\frac{1}{8}$  in head from snout  
tip; teeth in narrow bands in  
jaws, pair of canines in front of  
each, also 2 or 3 on each mandibular  
ramus; narrow band of fine teeth  
on vomer and each palatine;  
interorbital  $4\frac{1}{2}$  to 5 in head from  
snout tip, level; hind preopercle  
edge entire, lower edge with 3 or 4  
antrorse spines; opercular spines  
3, median nearer lower and upper

Mugil melinopterus Valenciennes,  
 Hist. Nat. Poiss., vol. 11, p. 146, pl.  
 314, 1836 (type locality, Vanicolo). —  
Günther, Cat. Fish. Brit. Mus.,  
 vol. 3, p. 452, 1861 (Tonga). —  
Martens, Preuss. Exped. Ost Asien,  
 vol. 1, p. 395, 1876 (Luzon; Singapore).  
 — Elera, Cat. Fauna Filipinas, vol.  
 1, p. 538, 1895 (Luzon; Cavite). —  
Duncker and Mohr, Mitteil.  
 Naturh. Mus. Hamburg, vol. 42,  
 p. 130, 1926 (Husa Bay, New Guinea).

Mugil melanopterus Günther, Journ.  
 Mus. Godeffroy, vol. 7, pt. 15, p. 218,  
 1881 (Tonga).

$1\frac{2}{3}$  to  $1\frac{4}{5}$ , truncate; least depth of caudal peduncle  $2\frac{2}{5}$  to  $2\frac{3}{5}$ ; pectoral  $1\frac{4}{5}$  to  $2\frac{1}{8}$ ; ventral  $2\frac{1}{10}$  to  $2\frac{1}{4}$ .

Terracotta color or brown, slightly paler below. Head, body and fins marked with small blue spots, less than pupil and all ocellated with deeper brown rings; spots much more numerous with age. Fins brown like body, only spots much smaller. Iris brown. Hind caudal edge narrowly whitish. Pectoral pale brownish and only few small spots basally. Ventral darker than pectoral.

East Indies and Philippines. Apparently a valid species which we distinguish chiefly by its truncate caudal fin. The lower preopercular spines are relatively

Liza melinoptera Jordan and Seale,  
 Bull. Bur. Fisher., vol. 25, p. 217,  
 1905 (1906) (Apia; Pago Pago). —  
Jordan and Dickerson, Proc. U. S.  
 Nat. Mus., vol. 34, p. 607, 1908  
 (Suva). — Kendall and Goldsborough,  
 Mem. Mus. Comp. Zool., vol. 26,  
 p. 256, 1911 (Tongatabu, Tonga  
 Islands). — Whitley, Journ. Pan  
 Pac. Res. Inst., vol. 3, no. 1, p. 12,  
 January-March 1928 (Santa Cruz  
 Islands).



weak and the opercular spines  
more or less imbedded, often  
inconspicuous. The head, body and  
fins are ornamented with large  
blue, black edged spots.

East Indies, Philippines. Readily known  
by its truncate caudal fin.

2463

Mugil rossii Bleeker, Nat. Tijds.  
Ned. Indië, vol. 6, p. 518, 1854  
(type locality, Kobos - Keeling,  
Islands); vol. 7, p. (38) 45, 1854  
(Kobos - Keeling); vol. 16, p. 275,  
1858 (East Indies; diagnosis in  
key). — Günther, Cat. Fish. Brit.  
Mus., vol. 3, p. 436, 1861 (note).  
— Weber, Siboga Exped., vol. 57,  
Fische, p. 138, 1913 (Kangeang).

Mugil rossii Beaufort, Bijdr.  
dierk. Amsterdam, vol. 19, p. 107,  
1913 (Saonek, Waigiu; Sarong, New  
Guinea).

most advanced. Gill rakers 6 + 9 to 12, short,  $2\frac{1}{3}$  in gill filaments which  $\frac{1}{4}$  in eye; 5 upper and 7 to 10 lower rudimentary.

Scales 94 to 100 in lateral line to caudal base and 12 to 15? more on latter; tubes 81 to 84 in lateral line to caudal base and 8 to 10 more on latter; 13 to 16 scales above, 38 to 40 below, 36 to 40 predorsal to occiput, 23 to 25 rows across cheek to preopercle angle; maxillary covered with fine scales. Scales with 6 or 7 basal radiating striae; circuli fine.

D. VIII, I, 10, I or I, 11, I, third spine  $3\frac{1}{2}$  to  $3\frac{3}{4}$  in total head length, first branched ray  $2\frac{1}{3}$  to  $2\frac{3}{5}$ ; A. III, I, 7, I, third spine  $4\frac{2}{5}$  to  $5\frac{1}{4}$ , first branched ray  $2\frac{2}{5}$  to  $3\frac{1}{8}$ ; caudal

Mugil tegobuan Thiollière, Fauna  
Woodlark, p. 184, 1857 (type  
locality, Woodlark Islands).

Mugil occidentalis Castelnau  
S. Austral. 13, 135.

Mugil ventricosus (not Richardson)  
Castelnau, Viet. Offic. Rec.  
Philadelphia Exhib. (Res. Fish.  
Austral.), p. 32, 1875 (Nirol Bay,  
Western Australia). — Macleay,  
Proc. Linn. Soc. New South Wales,  
vol. 4, p. 423, 1880 (copied). —  
McCulloch, Mem. Austral. Mus.,  
vol. 5, pt. 1, p. 114, June 29, 1929  
(reference).

16004. Liliwango Bay, Burias Island.  
March 5, 1909. Length 85 mm.

8918. Atulayan Island, Lagonoy Gulf,  
east coast Luzon. June 17, 1909. Length  
350 mm. (Type, U.S.N. Mus. No.

12706. Atulayan Bay, Luzon. June 18, 1909. Length 137 mm.  
7532 and 7539. Endeavor Strait,

Malampaya Sound, Palawan Island.  
December 23, 1908. Length 287 to 314 mm.

9107. Sigoso Point, Samar Island.  
July 28, 1909. Length 323 mm.

7254. Port Natalan, Luzon. November  
23, 1908. Length 518 mm.

A 549. Sulade Island, vicinity Jolo.  
September 17, 1909. Length 225 mm.

A 511. Tapiantana Island, south of  
Zamboanga. September 13, 1909.  
Length 370 mm.

Mugil delicatus Jouan, Mém.  
Soc. Sci. Nat. Cherbourg, vol.  
21, p. 333, 1877-78 (on Jouan 1861).

Mugil ogilbyi Fowler, Proc. Acad.  
Nat. Sci. Philadelphia, <sup>vol. 70,</sup> 1918,  
p. 5, fig. 2 (type locality,  
Philippines).

A 681. Bumbum Island, vicinity of Darvel Bay, Borneo. September 25, 1909. Length 520 mm.

A 696. Se Amil Island, vicinity of Darvel Bay, Borneo. September 26, 1909. Length 288 mm.

A 830 and A 844. Talise Island, north of Celebes. November 9, 1909. Length 262 to 365 mm.

A 1130. Kayoa Island. November 29, 1909. Length 475 mm.

Depth  $3\frac{2}{5}$  to  $4\frac{3}{5}$ ; head  $3\frac{3}{5}$  to  $3\frac{7}{8}$ ,  
width  $1\frac{1}{8}$  to  $1\frac{1}{2}$ . Snout  $3\frac{1}{10}$  to  $3\frac{2}{5}$  in  
head; eye  $4\frac{1}{8}$  to  $4\frac{1}{2}$ , subequal with  
<sup>to  $1\frac{1}{3}$  in snout with age</sup> snout, in profile, 2 to  $2\frac{3}{5}$  in  
interorbital; without or only very  
narrowly developed <sup>marginal</sup> adipose lids;  
maxillary concealed or little exposed,  
 <sup>$\frac{7}{8}$  or to length  $3\frac{2}{5}$  in head</sup> about reaches eye; upper lip width  
 $\frac{4}{7}$  of pupil; mouth would form  
obtuse angle; mouth width  $2\frac{3}{5}$  to  $3\frac{1}{3}$   
in head; interorbital  $1\frac{4}{5}$  to  $2\frac{1}{4}$ , low,  
flattened to slightly convex; lower  
preorbital edge finely serrated.  
Gill rakers  $35$  to  $38$  + ~~53~~ <sup>53</sup> to  $57$ , fine,  
slender,  $2\frac{1}{4}$  to  $2\frac{1}{2}$  in gill filaments,  
which  $1\frac{1}{8}$  to  $1\frac{1}{4}$  in eye.

Scales 26 to 29 in lateral



1 example. Usadea Island, vicinity  
of Jolo. March 3, 1908. Length 44 mm.

23755 to 23759. Daisy Island, west  
of Bumbun, Tusan Tando Bukang,  
British North Borneo. January 6, 1910.  
Length 60 to 83 mm.

23959. Danawan and Si Amil Islands,  
vicinity of Darvel Bay, Borneo.  
September 26, 1909. Length 78 mm.

23745. Danawan and Si Amil Islands.  
September 27, 1909. Length 66 mm.

~~23589. Tifu Bay, Bouru Island. December 10, 1909. Length 44 mm.~~

1 example. Basa Reef, Gulf of Boni,  
Celebes, Dutch East Indies. December 17,  
1909. Length 26 mm.

series from gill opening to caudal base; 10 or 11 transversely, 15 to 20 predorsal. Axillary pectoral scale absent, or sometimes 3 of fin. Soft vertical fins scaly basally.

Scales with <sup>5 to</sup> 6 basal radiating striae; apically with broad finely or minute rugose area; circuli fine

D. IV - I, <sup>I, 7, I or</sup> 8, I, first spine 1 1/2 to 2 1/8 in head, first branched ray 1 3/4 to 1 7/8, soft dorsal origin opposite middle of anal fin base; A. <sup>to 3 1/4,</sup>

III, 8, I or III, 9, I, third spine 2 3/5, first branched ray 1 3/4 to 1 4/5; caudal <sup>to 1 1/8, slightly,</sup>

<sup>1</sup> emarginate; least depth of caudal peduncle <sup>1 3/4</sup> 2 1/8 to 2 1/5; pectoral 1 1/8 to 1 1/2, rays I, 14; ventral I, 5,

1 example. Tataan Pass. February 21,  
1908. Length 77 mm.

6146 and 24057. Tonguil Island east  
of Gumila Reef. September 14, 1909.  
Length 43 to 93 mm. 6 examples.

15583. Tulayan Island, Jolo Island.  
September 15, 1909. Length 78 mm.

16585. Tula-lutan Island, east of  
Zamboanga. September 9, 1909. Length  
74 mm.

8035. Tumindao Island, Sulu  
Archipelago. February 26, 1908. Length  
75 mm. Male with buccal eggs.

23087. Tutu Bay, Jolo Island,  
first anchorage. September 19, 1909. Length  
77 mm.

fin  $1\frac{2}{5}$  to  $1\frac{3}{4}$ , spine  $1\frac{3}{4}$  in fin.

Back, <sup>brown or</sup> dull olivaceous, below whitish. Iris pale to whitish. <sup>or dorsals, caudal and anal</sup> deep brown, Fins brownish, upper  $\frac{2}{3}$  of pectoral brownish to neutral black.

Red Sea, East Africa, Natal, Madagascar, India, Andamans, Penang, Singapore, East Indies, Philippines, Indo China, China, North west Australia, North Australia, Queensland, New South Wales, Victoria, South Australia, Melanesia, Micronesia, Polynesia.

23982. Santa Cruz Island, Marinduque.  
April 24, 1908. Length 67 mm.

23085. Simalue Island, north of  
Tawi Tawi. September 22, 1909. Length  
60 mm.

23053 to 23055, 23084. Surigao,  
Mindanao Island. May 8, 1908. Length  
53 to 80 mm. Male with buccal ova.

24014. Tara Island. December 15, 1909.  
Length 49 mm.

23065. Tataan, Simalue Island.  
February 19, 1908. Length <sup>46 to</sup> 95 mm.  
15 examples.

38 examples. Tataan. February 20,  
1908. Length 55 to 92 mm.

2469

Five examples. Bolinao Bay,  
Luzon. May 10, 1909. Length 29 to 36 mm.

One example. Bongao Island,  
Tawi Tawi. February 23, 1908.  
Length 88 mm.

Eleven examples. Buena Vista,  
Guimaras Island, Iloilo Strait.  
January 14, 1909. Length 51 to 68 mm.

Four examples. Capunuy-pugan,  
Mindanao. May 9, 1909. Length 49  
to 88 mm.

Six examples. Catbalogan, Samar.  
April 15, 1908. Length 91 to 100 mm.

<sup>3</sup> [1044.] Caxisigan Island. January 4,  
1909. Length 30 mm.

Two examples. Chase Head, mouth  
of stream at village near by in  
brackish water,  
Endeavour Strait, Palawan.  
December 22, 1908. Length 54 to 61 mm.

Iris whitish or silvery, turns gray or slate in preservative. Fins all pale or whitish, with dusky tinge terminally on spinous dorsal.

East Indies, Philippines, Micronesia, Polynesia. A very abundant species, small and quite uniform in its general coloration. Changes with age slight. The elongated, filamentous, anterior or second dorsal spine variably long, perhaps sexual.

Jordan and Seale have attempted to establish the genus Mionorus Krefft largely with reference to this species. Their statement "the palatines provided with teeth, and the two limbs of the preopercle both strictly entire" for generic characters do not agree,

[644.] Iloilo River on shore above Iloilo, Panay. June 2, 1908. Length 25 to 137 mm. Seven examples. Larger with each row of scales with median-dark line as 9 parallel longitudinally. Fins all with more or less blackish.

One example. Zamboanga Bay, Mindanao. August 9, 1909. Length 36 mm.

Six examples. Manila Bay, Luzon. December 6, 1907. Length 40 to 79 mm.

Two examples. Manila market. December 12, 1907. Length 105 to 114 mm.

Three examples. Mansalay, Mindoro. June 4, 1908. Length 113 to 130 mm.

Six examples. Mantacao Island, west coast of Bohol. April 8, 1908. Length 76 to 115 mm.



and preorbital, naked; Tubes in lateral line large, simple, well exposed, without basal scale to each. Scales with 5 to 10 basal radiating striae; ~~most~~ largest scales with many as 28 to 30 small blunt apical denticles; circuli moderate.

D. VI - I, 9, I or 10, I, second spine 2 to  $2\frac{1}{2}$  in combined head and body to caudal base, first ray  $1\frac{1}{4}$  to  $1\frac{1}{3}$  in total head length; A. II, 9, I, second spine  $1\frac{2}{5}$  to  $1\frac{3}{5}$ , first ray  $1\frac{3}{5}$  to  $1\frac{3}{4}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , little emarginate behind; least depth of caudal peduncle  $2\frac{1}{6}$  to  $2\frac{1}{4}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; ventral  $1\frac{3}{5}$  to  $1\frac{7}{8}$ .

Light brown, sides of head and abdomen with silvery reflections, also some obsolete dusky dots on head, especially on cheeks, others about predorsal.

Two examples. Hakoda Bay,  
Palawan. December 31, 1908. Length  
28 to 29 mm.

Four examples. North end of  
Endeavour Strait, north west coast  
of Palawan. December 22, 1908.  
Length 44 to 52 mm.

One example. Panabutan Island,  
Mindanao. February 6, 1908. Length  
50 mm.

22 examples. Pandanon Island.  
March 24, 1909. Length 60 to 110 mm.

Eight examples. Parang, Mindanao.  
May 23, 1908. Length 38 to 62 mm.

Five examples. Port Caltan, Luzon.  
December 15, 1908. Length 42 to 65 mm.

One example. Port Galera, Mindoro.  
June 9, 1908. Length 81 mm.

One example. Port Janelo, Luzon.  
July 13, 1908. Length 35 mm.

Depth  $2\frac{1}{8}$  to  $2\frac{1}{4}$ ; head  $2\frac{2}{5}$  to  $2\frac{1}{2}$ , width  $2\frac{2}{5}$  to  $2\frac{1}{2}$ . Snout  $4\frac{1}{2}$  to 5 in head from upper jaw tip; eye  $2\frac{2}{5}$  to  $2\frac{3}{5}$ , greater than snout or interorbital; maxillary reaches  $\frac{1}{3}$  to  $\frac{2}{5}$  in eye, expansion 2 to  $2\frac{1}{2}$  in eye, length 2 to  $2\frac{1}{8}$  in head; teeth very minute, villiform, in narrow bands in jaws and apparently absent from palate; interorbital  $3\frac{4}{5}$  to 4, but slightly convex; ridge and hind edge of preopercle entire, lower edge denticulate. Gill rakers 6 + 23, finely lanceolate, twice length of gill filaments or  $2\frac{1}{8}$  in eye.

Scales 22 or 23 in lateral line to caudal base and 2 or 3 more on latter, 2 above, 6 below, 5 predorsal, 2 rows of cheek scales to preopercle ridge; muzzle, including interorbital, maxillary

Seven examples. Port Mutalvi,  
Luzon. November 23, 1908. Length  
~~35~~ to 43 mm.

Two examples. Port San Pio,  
Duinto, Camiguin Island. March  
11, 1908. Length 25 to 28 mm.

One example. "Port Suiga,  
Balabac." January 3, 1909. Length  
39 mm.

Four examples. San Miguel  
Harbor, Ticao Island. April 2, 1908.  
Length 51 to 59 mm.

Four examples. Santa Cruz Island,  
Marinduque. April 24, 1908. Length  
65 to 68 mm.

Two examples. Varadero Bay, Luzon.  
July 23, 1908. Length 36 to 61 mm.

8523. Verde del Sur Island.  
April 6, 1909. Length 395 mm.

Apogon graeffii Günther, Journ. Mus. Godeffroy, vol. 1, pt. 1, 1873, p. 22, pl. 20, fig. 2. Boston Island, Marshall Group, Oceania.

Apogon graeffii Streets, Bull. U.S. Nat. Mus., no. 7, 1877, p. 101 (Samoa).

Miononus graeffii Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 247, fig. 41. Apia and Fago Fago, Samoa.

Aimia gilberti Jordan and Seale, Proc. U.S. Nat. Mus., vol. 28, 1905, p. 777, fig. 3. Regraz.

Aimia doryssa Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 245, fig. 39. Apia, Samoa.

Ten examples. Limbe Island,  
Celebes, Dutch East Indies.  
November 12, 1909. Length 45 to 93 mm.

Syngnathus leptacanthus Bleeker, Nat.  
Tijds. Ned. Indië, vol. 12, 1856-57, p.  
104. Ternate. — Günther, Cat. Fishes  
Brit. Mus., vol. 1, 1859, p. 232 (copied).

Amia leptacantha Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 7, 1873-76, p.  
97, pl. (71) 349, fig. 3 (Ternate). —  
Fowler, Copeia, no. 58, June 18, 1918, p.  
63 (Philippines)

Amia gilberti Jordan and Seale,  
Proc. U. S. Nat. Mus., vol. 28, 1905, p.  
177, fig. 3. Negroa.

Amia doryssa Jordan and Seale,  
Bull. Bur. Fisher., vol. 25, 1905 (1906),  
p. 245, fig. 39. Apia, Samoa

A. N. S. P., no. 47479. Philippines.  
Commercial Museum of Philadelphia.  
Length 210 mm. Type of Mugil  
ogilbyi.

A. N. S. P., no. 47480. Philippines.  
Commercial Museum of Philadelphia.  
Length 205 mm. Paratype of Mugil  
ogilbyi.



23097 and 23098. Romblon. March 26,  
1908. Length 67 to 75 mm.

23066 to 23069. Romblon harbor.  
March 25, 1908. Length 53 to 69 mm.  
Male with buccal eggs.

1 example. Saboon Island, Ragay Bay,  
Ragay Gulf, Luzon. March 10, 1909.  
Length 43 mm.

14057 and 15775. Sacol Island.  
September 9, 1909. Length 42 to 69 mm.  
3 examples.

8279. San Miguel Island, Tabaco  
Bay, Luzon. June 4, 1909. Length 77 mm.  
6 examples. San Miguel Port, <sup>Ticao Island,</sup> between  
Buorias and Luzon. April 21, 1908.  
Length 49 to 81 mm.