Family Bembridae

Body elongate, shallowly ovoid in contour, little compressed. Head large, pointed, rather narrow, depressed. Snout rather long. Maxillary extends below eye, expanded terminally. Eye moderate to large, little protrusion in head, close set. Mouth rather large, jaws more or less even. Teeth fine, in bands on jaws, vomer and palatines. Nostrils 2 each side. Armature of head well developed, with spines and serrae. Body covered with scales, ctenoid, also on head except snout. Branchiostegals 7, no air bladder. Lateral line distinct, complete. Two dorsals,

first with 6 to 11 spines, smaller than soft fin. Anal like second dorsal. Caudal moderate, sub. truncate or rounded. Pectoral rather large, most of rays branched, and without attached rays. Ventral little in advance of pectoral, with spine and 5 rays.

A small family resembling the Platycephalidae, less depressed, and the ventrals inserted a little before the pectorals..

Bembidae

~~Leptoneridae~~

~~Bembidae filiformi~~

~~Desmida~~

Analysis of Genera

a.' Parabembrinae new subfamily.
Lateral line high, runs along upper side of back; spinous dorsal larger than second dorsal, which (only with) 9 rays; anal like second dorsal.
Parabembras.

a.² Bembrinae new subfamily. Lateral line slopes from suprascapula, median or axial along side of tail; base of spinous dorsal always shorter than second dorsal base; anal long like second dorsal.

b.' Anal rays 11.

c.' Eye little greater than snout; scales 32 in lateral line.
Brachybembras.

c.² Eye less than snout; scales 28 in lateral line.
Bembradium.

b.² Anal rays 14; eye less than snout.

d.' Dorsal spines 6; scales 40 in lateral line.

Bembradon.

d.² Dorsal spines 11; scales 75 or 76 in lateral line, tubes 49 or 50.

Bembras.

2671

Genus Parabembras Bleeker

Parabembras Bleeker, Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 8, p. 370, 1874. (Type Bembras curtus Schlegel, monotypic.)

Buffichthys day, Fishes of India, pt. 1, p. 162, 1875. (Type Scorpaena horrida Linnaeus.)

Body elongate, slenderly ovate, not compressed. Head large, compressed, pointed. Snout depressed. Eye large, high, largely premedian on head. Mouth moderate, lower jaw well protruded. Maxillary extends below eye. Nostrils 2, well separated. Interorbital narrow. Armature of head well developed, with sharp spines. Gill rakers slender. Scales rather large, ctenoid, and on fins extend only on pectoral and caudal bases. Dorsals well separated, first fin with 9 spines and second with spine and 8 rays. Anal with 3 spines and 5 rays. Caudal rounded. Pectoral moderate, rays branched. Ventral inserted before pectoral, with spine and 5 rays.

Pleurogenium Gilbert from Hawaii is very suggestive superficially to this genus, but of course differs in many ways, especially the snout shorter than the eye, the continuous dorsals deeply notched and 2 spines at the front of the second dorsal.

2274

Parabembras curtus (Schlegel)

Bembras curtus Schlegel.
Fauna Japonica, Pisces, f. 42, pl. 16, figs. 6-7, 1843 (type locality, Japan). — Richardson, Ichth. China and Japan, f. 217, 1846 (reference). — Günther, Cat. Fish. Brit. Mus., vol. 2, f. 191, 1860 (copied).

Genus Pseudozyganceia Day

Pseudozyganceia Day, Fishes of India, pt. 1, p. 163, 1875. (Type Pseudozyganceia melanostigma Day, monotypic.)

Parabembras curtus Bleeker, Verslag. Kon. Akad. Wet. Amsterdam, Ser. 2, vol. 8, p. 370, 1874 (reference); Verh. Kon. Akad. Wet. Amsterdam, vol. 18 (No. 6), p. 12, 1879 (reference).

—— Jordan and Snyder, Annot. Zool. Japan, vol. 3, p. 105, 1901 (reference). —— Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 644, 1908 (copied). —— Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, art. 1, p. 287, 1913 (reference). —— Jordan and Hubbs, Mem. Carnegie Inst., vol. 10, No. 2, p. 281, June 27, 1925 (Osaka market).

Depth 5 1/4 to 5 3/4; head 2 1/3 to 2 3/5, width 2 to 2 1/8. Snout 3 3/4 to 3 7/8 in head from snout tip; eye 3 1/4 to 3 1/3, greater than snout, and very narrow interorbital; maxillary reaches 1/5 to 1/4 in eye, expansion 3 1/5 to 3 3/4 in eye, length 2 3/5 to 2 4/5 in head from snout tip; teeth minutely villiform, in bands in jaws with upper little broader than lower; triangular band of fine villiform teeth on vomer and long narrow band on each palatine; interorbital narrow, concave, width 4 1/4 to 4 1/2 in eye. Gill rakers 6 + 12, lanceolate, of which 3 above and below short rudimentary tubercles; gill rakers 2 4/5 in eye; gill filaments 3/5 of gill rakers.

Front nostrils with pair of internasal spines; 6 pairs of supraorbital spines with last 3 closer and followed by pair of much more widely set parietal spines (close behind upper orbital edge), then closer pair of well developed occipitals; large, strong preorbital spine, pointing backward below suborbital stay and front of eye; suborbital stay with 5 strong spines, last smallest; strong preopercular spine, 3 in eye; 2 rather close set opercular spines, lower slightly forward; 2 postocular spines, followed by 3 at suprascapula; strong, short humeral spine.

Scales 32 or 33 + 10 in lateral line; 4 above to spinous

dorsal origin, 5 above to 1 of 2
dorsal origin, 8 below; 6 or
7 predorsal forward to
occiput; 4 rows on cheek
below suborbital stay.
Head scaly behind eyes.
Small scales on bases of
pectorals and caudal, rather
large on breast and belly.
Scales with 11 to 14 basal
radiating to parallel striae;
45 to 54 slender short apical
denticles, with 2 to 4 transverse
series of basal elements; circuli
fine basally, coarser and
ending obliquely apically.
D. IX — I, 8, I, fourth spine
$2\frac{3}{5}$ to $2\frac{2}{3}$ in total head length,
first branched ray $2\frac{7}{8}$ to 3.
A. III, 5, I, second spine $3\frac{1}{2}$ to
4, second ray $2\frac{7}{8}$ to 3; caudal
$1\frac{3}{4}$ to 2, slightly convex behind;

U. S. N. M., No.

Albatross Collection. No. D. 5596.

Zamboanga Light N. 31° W.,
0.1 mile (N. lat. 6°54', E.
long. 122°4'30"), Mindanao.
Sd 9 fathoms. October 10, 1909.

least depth of caudal peduncle $4\frac{1}{4}$ to $5\frac{1}{8}$; pectoral $1\frac{4}{5}$ to $1\frac{7}{8}$, rays I, 17; ventral rays I, 5, $2\frac{1}{5}$ to $2\frac{2}{5}$ in total head length.

Pale brown, little lighter or whitish below. Iris gray. Fins all pale, with dark spot on soft dorsal terminally.

China, Japan.

U. S. N. M., No. 86974. Shanghai. A. Towerby. Four examples. Length 115 to 126 mm.

Chlorophthalmidae

Bathysauropsis

2265

Genus Bembradium Gilbert

Bembradium Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 637, 1905. (Type Bembradium roseum Gilbert, monotypic.)

Differs from Bembras in the fewer anal rays (11), larger scales (30) and short mandible included in the upper jaw. Lateral line slopes down above anal, axial along side and complete.

Bembradium roseum Gilbert

Bembradium roseum Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 637, 1905 (type locality, Pailolo Channel, in 138 fathoms). — Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 642, 1908 (reference). — Fowler, Mem. Bishop Mus., vol. 10, p. 302, 1928 (copied).

Bembradium roseum Gilbert, l. c., pl. 62.

2467

Depth $5\frac{3}{4}$; head $2\frac{1}{2}$, width $2\frac{1}{5}$. Snout 3 in head; eye 4, $1\frac{2}{5}$ in snout, greatly exceeds very narrow interorbital; maxillary extends $\frac{2}{5}$ in eye, expansion $\frac{2}{3}$ in eye, length $2\frac{1}{6}$ in head; teeth finely villiform, in narrow bands in jaws, on vomer and palatines; tongue small, narrow, pointed and free; interorbital narrow, deeply concave, width $\frac{1}{4}$ in eye. Gill rakers 2 + 6, of which 2 upper and 2 below rudiments; length $\frac{3}{4}$ of gill filaments, which $3\frac{1}{2}$ in eye.

Ridge over front nostrils each side with 5 small denticles; strong antero-orbital spine directed upward, and supra-orbital ridge with 13 rather large serrae, followed by pair of occipital spines and

finally wide set supracapula spines, one each side; strong postocular spine, with small antero-basal spine and 2 small denticles still anterior; suborbital stay with finely serrated edge; preopercle edge with strong spine behind end of suborbital stay and 4 or 5 upturned serrae along edge below; 2 opercular spines, upper little longer and lower slightly forward; strong humeral spine concealed under gill flap.

Scales 26 + 2 in lateral line; 3 above, 7 below to anal; 5 predorsal; 5 below suborbital stay on cheek. Head scaly behind and below eyes, and small scales on chest, breast and belly, also caudal base, very

small on pectoral base. Lateral line complete, of long slender tubes, well exposed or reach ends of scales. Scales with 9 basal radiating striae; 50 small close set uniserial apical denticles; circuli fine, coarser and end abruptly apically.

D. IX, 12, I, third spine $2\frac{1}{3}$ in head; first ray $2\frac{4}{5}$, sixth ray $2\frac{1}{5}$; A. II, I, third ray $3\frac{1}{2}$, fifth ray 3; caudal $1\frac{2}{3}$, little rounded behind; least depth of caudal peduncle 6; pectoral $1\frac{3}{4}$, rays 25; ventral rays I, 5, fin $2\frac{1}{4}$ in head.

Brown, more or less uniform. Iris gray, slate black above. Fins all uniform.

Hawaiian Islands.

2290

U. S. N. M., No. 51617. Pailolo Channel, in 138 fathoms. Albatross Collection 3859. Length 90 mm. Type.

Genus Bembradon Jordan and Richardson

Bembradion Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 643, 1908. (Type Bembras laevis Hyström, orthotypic.)

Synancidium J. Müller, Arch. Naturg., p. 302, 1843. (Type Scorpaena horrida Linnaeus. Designated by Jordan, Genera of Fishes, pt. 2, pp. 169. 201, 1919.

Synancejdium Agassiz, op. cit. (Type Scorpaena horrida Linnaeus.

Synancejchthys Bleeker, Ned. Tijds. Dierk., vol. 1, p. 234, 1863. (Type Synancejа verrucosa Schneider, monotypic. Name only.)

Emmydrichthys Jordan and Rutter, Proc. Cal. Acad. Sci., ser. 2, vol. 6, pp. 221, 562½, 1896. (Type Emmydrichthys vulcanus Jordan and Rutter, monotypic.

(Hofua Whitley, Mem. Queensland Mus., vol. 10, p. 24, 1930. (Type Synancejа platyrhynchus Bleeker, orthotypic.)

Top of head smooth, without ridges or spines. Scales moderate. Dorsal spines 6. Anal rays 17 or 15. Differs from Bembras chiefly in its short spinous dorsal.

Bembradon laevis (Nyström)

Bembras laevis Nyström, Bih. K. Svensk. Vet.-Akk. Handl., Stockholm, vol. 13, afd. 4, no. 4, p. 26, 1887 (type locality, Nagasaki). — Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 105, 1901 (reference).

Bembradon laevis Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 643, 1908 (copied). — Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, art. 1, p. 287, 1913 (reference).

Body slender, width behind head, greater than depth. Snout 3 in head; eye 4; lower jaw protruded. Upper part of head without spines or ridges. Scales 40 in lateral line, thin, ctenoid. D. VI—14; A. 15; pectoral 23; second dorsal spine longest, somewhat more than body depth; anal slightly longer than soft dorsal.

Brownish, with row of dusky spots along lower edge of body. Under parts white. Black blotch at front of spinous dorsal. Anal pale, with dusky basal band. Pectoral brownish, without spots or bands. Length 35 mm.

(Nystrom.)

Japan.

Genus Bembras Cuvier

Bembras Cuvier, Hist. Nat. Poiss., vol. 4, p. 282, 1829. (Type Bembras japonicus Cuvier, monotypic.)

Body elongately ovate, tapering posteriorly, subcylindrical. Head moderate, pointed. Snout little depressed, rather long. Eye large, shorter than snout. Maxillary moderate. Interorbital narrow. Ridges and spines of head distinct. Scales small. Head scaly. Lateral line axial, complete. Spinous dorsal but little smaller than soft dorsal, with 11 spines and second fin with spine and 11 rays. Anal rays 14. Caudal truncate. Paired fins moderate, few lower pectoral rays simple.

Bembras japonicus Cuvier

Bembras japonicus Cuvier, Hist. Nat. Poiss., vol. 4, p. 282, pl. 83, 1829 (type locality, Japan). — Swainson, Nat. Hist. Animals, vol. 2, p. 270, 1839 (reference). — Schlegel, Fauna Japonica, Poiss., p. 41, pl. 16, fig. 8 (head above), 1843 (Japan). — Richardson, Ichth. China and Japan, p. 217, 1846 (reference). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 191, 1860 (Japan). — Bleeker, Verh. Kon. Akad. Wet. Amsterdam, vol. 18 (No. 6), p. 12, 1879 (reference). — Steindachner and Döderlein, Denks. Akad. Wiss. Wien, Math.-naturk. Kl., vol. 53, pt. 1, p. 261, 1887 (Tokyo).

— Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 105, 1901 (reference). — Smith and Pope, Proc. U. S. Nat. Mus., vol. 31, p. 488, 1906 (Susaki; Urado; Kochi). — Jordan and Richardson, Proc. U. S. Nat. Mus., vol. 33, p. 643, 1908 (compiled). — Franz, Abhandl. Bayer. Akad. Wiss., vol. 10, Suppl. Band 1, p. 78, 1910 (Yokohama; Misaki). — Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, p. 280, Sep. 1914 (Nagasaki). — Jyuka and Matsuura, Cat. Zool. Spec. Tokyo Mus., Vertebr., p. 122, 1920 (Bonin). — Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, p. 283, June 27, 1925 (Osaka; Kochi; Misaki).

Depth 6 3/4 to 7 2/3; head 2 3/5 to 2 7/8, width 2 2/3 to 2 3/4. Snout 2 7/8 to 3 in head from snout tip; eye 3 3/4 to 4 1/4, 1 1/4 to 1 2/5 in snout; maxillary reaches 1/8 to 1/5 in eye, expansion 2 to 2 2/5, length 2 1/3 to 2 3/4 in head from snout tip; teeth in villiform bands in jaws, upper band little broader; single small patch of villiform teeth each side of vomer and long band on each palatine; interorbital width 3 1/2 to 4 in eye, narrow, deeply concave. Gill rakers 3 + 1 + 7, lanceolate, also 4 small rudimentary tubercles both above and below; gill filaments 3/4 of gill rakers.

No nasal spines; strong and rather long antero-orbital spine above, followed by 5 ~~or 6~~

supraorbital spines of which last 3 march closer, then parietal pair and finally occipital pair; 3 preorbital spines, anterior far forward and directed forward, posterior 2 close together close before eye and posterior larger; suborbital stay with 4 spines; preopercular spines 3, lowest smallest inclined down, upper most longest or $\frac{1}{3}$ of orbit; 2 postocular spines; 2 supra-scapular spines, anterior small, close on posterior and followed by 4 similarly spinous scales forming front of lateral line; 2 diverging opercular spines, upper more posterior; subopercle with small spine; strong, short, humeral spine.

(2230)

Scales 70 or 71 + 5 in lateral line; tubular scales 48 + 1 or 2 in lateral line; 6 scales above, 12 below, 11 predorsal forward to occiput; 8 rows below suborbital stay on cheek. Small scales on chest, breast and belly, also on pectoral and caudal bases. Muzzle naked, head behind and below eyes scaly. Lateral line rather high, axial along side of body to middle of caudal base and tubes small. Scales with 5 to 8 basal radiating striae; 20 to 36 apical denticles, uniserial, with 2 to 5 transverse series of basal elements; circuli fine, end abruptly apically.

D. $\overline{XI}-\overline{I}, 11, \overline{I}$, third spine $\frac{1}{7}$ $1\frac{7}{8}$ to $2^{=}$ in total head length,

first branched ray $2\frac{3}{4}$ to $3\frac{3}{5}$; A. 14, I, edge of membranes behind end of each ray incised, fourth ray 4 to $4\frac{3}{5}$; caudal $1\frac{2}{3}$ to $1\frac{7}{8}$, truncate; least depth of caudal peduncle $6\frac{1}{4}$ to $6\frac{3}{4}$; pectoral $1\frac{3}{4}$ to $1\frac{4}{5}$, rays II, 10, V; ventral rays I, 5, fin $1\frac{4}{5}$ to 2 in total head length.

Brown, paler below, evidently whitish when fresh. Iris pale or dull grayish. Scattered and irregular dark brown spots on head above and back. Fins all pale or light brownish, dorsals and pectoral marked with contrasted blackish brown spots. Caudal with transverse dark brown subterminal band.

U. S. N. M., No. 59653. Kochi, Japan. May 11, 1903 Dr. H. M. Smith. Length 215 mm.

U. S. N. M., No. 59659. Kochi. May 11, 1903. Dr. H. M. Smith. Length 90 mm.

U. S. N. M., No. 59660. Urado, Japan. May 10. 1903. Dr. H. M. Smith. Length 120 mm.

U. S. N. M., No. 59661. Susaki, Japan. May 8, 1903. Dr. H. M. Smith. Length 114 mm.