

A SMALL COLLECTION OF FISHES FROM SOOCHOW, CHINA,  
WITH DESCRIPTIONS OF TWO NEW SPECIES.

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The present collection consists of a number of small fishes sent as a lot of samples, by Mr. N. Gist Gee, from Soochow, China, to the United States Bureau of Fisheries at Washington, District of Columbia. Through the interest of Dr. Hugh M. Smith they were placed in our hands for study, then to be installed in the United States National Museum. For the most part they represent species but little known, and two appear to be new.

### Family ENGRAULIDIDAE.

*COILIA CLUPEOIDES (Lacépède).*

Head, 6; depth,  $5\frac{2}{3}$ ; D. III, 9; A. 83; abdominal scutes, 17 + 28; 60 (?) (pockets) scales in lateral row from shoulder to caudal base medially; 14 predorsal scales; 10 scales transversely from anal origin to middle of back behind dorsal; snout,  $4\frac{1}{2}$  in head; eye, 5; interorbital,  $2\frac{2}{3}$ . Head width, half its length. Snout conic, cavernous, like interorbital and top of head, width half its length. Eye at first third in head. Mouth large, symphysis about midway in snout length. Maxillary extends  $1 + \frac{2}{3}$  eye diameters beyond opercle, expansion  $1\frac{1}{4}$  in eye. Entire maxillary edge with row of fine teeth. Gill-rakers 17 + 30, slender, lanceolate, equal eye, and filaments half length of rakers. Scales all fallen. First branched dorsal ray  $1\frac{1}{8}$  in head; second anal ray  $3\frac{1}{2}$ ; ventral, 2; pectoral,  $2\frac{2}{3}$  to caudal base, rays long and filamentous. Body uniform pale brownish in alcohol. Dorsal and anal terminally dusted with pale dusky. Iris pale slaty. Length, 133 mm.

### Family SALANGIDAE.

*SALANX CUVIERI Cuvier and Valenciennes.*

Head,  $4\frac{1}{8}$  to 6; depth, 1 to  $2\frac{1}{4}$  in head; D. III, 9 (?) or 10; A. II, 20 (?) or 23; P. I, 8; snout,  $2\frac{2}{3}$  to 3 in head; eye,  $2\frac{3}{4}$  to  $6\frac{1}{4}$ ; maxillary,  $2\frac{1}{4}$  to  $2\frac{2}{3}$ ; interorbital, 2-3. Body moderately compressed, deepest midway

in its length. Head strongly depressed, width  $2\frac{1}{4}$  to  $2\frac{3}{4}$  its length. Snout greatly depressed, width  $1\frac{1}{8}$  its length; length half its width in young. Eyes largely ventral. Maxillary not quite to eye, only to first third in young, curved downward and ventrally. Few slender curved teeth in row along each side of upper jaw, similar smaller teeth below. Jaws equal in front. Interorbital level. Origin of dorsal midway between ventral origin and caudal base, little nearer caudal base than pectoral tip in young; anal inserted close behind dorsal origin, close behind dorsal base in young; caudal forked,  $1\frac{1}{4}$  to  $1\frac{3}{4}$  in head; adipose fin placed at first  $\frac{2}{5}$  in space behind last anal ray base and caudal base; ventral inserted midway between snout tip and caudal base, fin  $1\frac{1}{2}$  to  $2\frac{3}{8}$  in head; in young ventral inserted midway between snout tip and last anal ray base; pectoral,  $2\frac{1}{2}$  to  $2\frac{1}{4}$ . In alcohol color is brown on back, undersurface pale to whitish. Two examples, 48 to 118 mm.

*Salanx hyalocranius* J. F. Abbott<sup>1</sup> is apparently identical, the alleged characters given being merely variations of age.

### Family MONOPTERIDAE.

#### FLUTA ALBA (Ziuzev).

One example, 405 mm. long.

### Family ANGUILLIDAE.

#### ANGUILLA JAPONICA Schlegel.

Head,  $3\frac{2}{5}$  to vent; depth, 7; head and trunk,  $1\frac{1}{4}$  in rest of body; snout,  $5\frac{3}{4}$  in head; maxillary,  $3\frac{2}{5}$ ; interorbital, 6; pectoral,  $2\frac{1}{2}$ ; eye, 2 in snout; space between dorsal and anal origins  $1\frac{1}{4}$  in head. In alcohol brown above, pale to whitish below. Pectorals whitish, also anal. Dorsals and caudal dusky, with very narrow pale edge. One example, 375 mm.

### Family SILURIDAE.

#### PARASILURUS ASOTUS (Linnaeus).

Head,  $4\frac{2}{3}$ ; depth,  $6\frac{2}{5}$ ; D. I, 4; A., 80; snout,  $3\frac{1}{4}$  in head from upper jaw tip; eye,  $8\frac{2}{3}$ ; mouth width,  $1\frac{2}{3}$ ; interorbital,  $2\frac{1}{8}$ . Head width,  $1\frac{2}{3}$  its total length. Snout broadly depressed, length  $\frac{2}{3}$  its width. Lower jaw slightly protrudes, symphysis level with middle of eye; maxillary to front pupil edge. Maxillary barbel reaches opposite dorsal origin. Mental barbel,  $2\frac{1}{8}$  to hind edge of gill opening. Teeth conic, fine, in moderate bands in jaws and narrower band across vomer and palatines. Interorbital slightly convex. Gill rakers, 1+9; lanceolate,  $1\frac{1}{4}$  in filaments or about long as eye. Dorsal length, 3 in total head length; second anal ray,  $2\frac{1}{2}$ ; caudal slightly emarginate, with rounded lobes and joined with anal; upper lobe,  $1\frac{2}{3}$ ; least depth

<sup>1</sup> Proc. U. S. Nat. Mus., vol. 23, 1901, p. 490, fig. Tién-Tsin.

of caudal peduncle, 4; pectoral,  $1\frac{3}{4}$ ; and flattened spine,  $\frac{3}{5}$  of fin, both edges serrate, front edge antrorsely serrate; pectoral reaches little beyond dorsal base, but not to ventral; ventral  $2\frac{3}{4}$ , close before anal; anal papilla well developed. In alcohol brownish-drab generally. Under surface of head, breast, belly, and lower surfaces and edges of paired fins, pinkish-buff. Length, 235 mm.

*FLUIDRACO FLUIDRACO* (Richardson).

Head,  $3\frac{1}{4}$ ; depth,  $3\frac{2}{3}$ ; D. I., 7; A. v., 15; snout,  $3\frac{1}{8}$  in head; eye,  $4\frac{1}{5}$ ; mouth width,  $2\frac{1}{5}$ ; interorbital,  $2\frac{2}{3}$ . Head width,  $1\frac{1}{5}$  in its length. Snout broad, depressed, length half its width. Lower jaw shorter than upper. Maxillary reaches  $\frac{2}{3}$  in snout. Maxillary barbel longer than head by pupil length. Nasal barbel,  $1\frac{3}{4}$  to hind edge of gill opening. Outer mental barbel,  $1\frac{1}{2}$  in head; inner, 2. Teeth villiform, in moderate simple bands in jaws, narrower band parallel across vomer and palatines. Interorbital broadly and slightly convex. Gill rakers, 4 + 9 lanceolate,  $1\frac{1}{4}$  in eye; filaments,  $\frac{3}{4}$  of rakers. Dorsal buckler and occipital process form complete bony bridge. First dorsal ray  $1\frac{1}{2}$  in head; spine,  $1\frac{1}{2}$  in fin; first anal ray, 2 in head; dorsal spine,  $1\frac{2}{3}$ , both edges with obsolete serrae; caudal strongly forked,  $1\frac{1}{8}$  in head; adipose fin,  $1\frac{2}{3}$ ; pectoral,  $1\frac{1}{2}$ ; spine finely antrorse serrate along outer edge, inner with 12 large serrae,  $1\frac{1}{5}$  in head; ventral, 2; humeral process, 2; finely rugose.

In alcohol cinnamon-drab to fawn color; upper surface of head brownish; iris pale slaty; nasal and maxillary barbels pale brown above, pinkish-buff below, like mental barbels and lower surface of head; fin spines pale and most all, except brownish adipose fin, tinged with dusky; upper and lower caudal edges paler than median portion of fin; hind dorsal rays, also of pectoral, and both hind and front ventral and anal rays, whitish. Length, 105 mm.

Family COBITIDIDAE.

*MISGURNUS ANGUILLICAUDATUS* (Cantor).

Head,  $3\frac{4}{5}$  to  $6\frac{1}{4}$ ; depth,  $6\frac{1}{4}$  to  $6\frac{1}{2}$ ; D. II, 7; A. III, 5; scales, 142 in median lateral series from shoulder to caudal base; 30 scales transversely between dorsal and ventral origins; 85 predorsal scales; snout, 3 to  $3\frac{1}{5}$ ; eye,  $3\frac{3}{4}$  to  $5\frac{3}{4}$ ; interorbital, 4 to  $5\frac{1}{4}$ . Head width,  $1\frac{2}{3}$  its length. Snout width, 1 to  $1\frac{1}{4}$  its length. Eye anterior,  $1\frac{1}{2}$  to 2 in snout. Two hind maxillary barbels each side longer than median frontal pair,  $3\frac{1}{2}$  in head. Hind mental barbels twice length of front mental pair or  $4\frac{2}{3}$  in head. Interorbital convex. Gill opening restricted laterally,  $2\frac{1}{2}$  in head. Scales cycloid, radiating striae, 45 to 50 with about 23 to 25 incomplete marginal accessories, and circuli moderately fine. Dorsal origin little nearer gill opening than caudal base, little nearer caudal base in young; first branched dorsal ray,

$1\frac{1}{8}$  to  $1\frac{3}{8}$  in head; first anal ray,  $1\frac{2}{5}$  to 2; caudal, 1 to  $1+\frac{2}{5}$  in head; pectoral,  $1\frac{1}{10}$  to  $1\frac{1}{5}$ ; ventral,  $1\frac{1}{2}$  to  $2\frac{1}{5}$ .

In alcohol sepia-brown above, finely and obscurely mottled with dusky. Lower surface of head, belly, and abdomen pale grayish-venaceous, and pale violet-gray to lavender tint on breast. Dorsal, caudal, and pectoral pale brownish, finely dotted little darker, and blackish ocellus at bases of upper caudal rays about size of eye. Pectoral, ventral, and anal grayish-venaceous. In young color more dilute brownish, mottled with dark specks. Two dusky blotches at caudal base. Dusky streak forward from eye to snout tip. Fins finely mottled with dusky. Two examples, 47 and 180 mm.

### Family CYPRINIDAE.

#### Subfamily CYPRININAE.

##### CARASSIUS AURATUS (Linnaeus).

Two specimens, 110 and 125 mm.

#### Subfamily RHODEINAE.

##### ACANTHORHODEUS ASMUSI (Dybowski).

Head,  $3\frac{3}{4}$ ; depth,  $2\frac{1}{5}$ ; D. II, 16; A. II, 13; scales (damaged) in lateral line about 32 to caudal base and 2 more on latter; 6 scales above lateral line to dorsal and 5 below to anal; 14 predorsal scales; snout,  $3\frac{1}{2}$  in head; eye,  $3\frac{1}{8}$ ; maxillary,  $3\frac{1}{5}$ ; interorbital, 3. Head width,  $1\frac{7}{8}$  its length. Snout conic length,  $\frac{2}{3}$  its width. Maxillary reaches eye, with very slight or rudimentary terminal barbel. Interorbital slightly convex. Gill opening to hind eye edge. Teeth 5-5, compressed, without terminal hook and inner edge of each strongly crenulate. Rakers 2+7 short rudimentary points, greatly shorter than filaments, which  $1\frac{1}{2}$  in eye. Scales with 34 or 35 irregular waved basal radiating striae; circuli moderate. First branched dorsal ray equals head length; first branched anal ray,  $1\frac{1}{4}$ ; lower caudal lobe,  $1+\frac{1}{5}$ ; pectoral,  $1\frac{2}{5}$ ; ventral,  $1\frac{1}{3}$ . In alcohol mikado brown generally; fins all pale brownish, slightly grayish terminally; parallel with vertebral column, opposite anal, dark or dusky streak, and continued in caudal peduncle to caudal base; iris white. Length, 87 mm.

#### Subfamily GOBIONINAE.

##### PSEUDOGOPIO SINENSIS (Kner).

Head,  $3\frac{3}{4}$ ; depth,  $4\frac{4}{5}$ ; D. III, 7, I; A. II, 5; scales, 32 in lateral line to caudal base and 2 more on latter; 6 scales above lateral line to dorsal, 4 below to anal; 12 predorsal scales; snout,  $2\frac{1}{5}$  in head; eye,  $3\frac{7}{8}$ ; maxillary,  $3\frac{4}{5}$ ; interorbital,  $3\frac{4}{5}$ . Head width,  $1\frac{5}{8}$  its length. Snout conic, long as wide, with slight depression medially in profile. Maxillary,  $\frac{2}{3}$  of snout, with thick terminal barbel,  $1\frac{1}{2}$  in eye. As seen

below lips horseshoe-shaped, lower with slight median lobe each side. Interorbital slightly depressed, scarcely concave. Gill opening forward to hind postorbital edge. Rakers, 1 + 10, short points, much less than filaments, which are  $1\frac{1}{8}$  in eye. Teeth, 5-5, with broad smooth grinding surfaces, ends moderately curved or hooked. Scales with 26 to 35 terminal radiating striae; circuli coarse and rather few. Dorsal inserted little nearer snout tip than last anal ray base, first branched ray,  $1\frac{1}{10}$  in head; first branched anal ray,  $1\frac{2}{3}$ ; upper caudal lobe,  $1 + \frac{1}{10}$ , well emarginate behind and lobes pointed; pectoral,  $1 + \frac{1}{10}$ , nearly to ventral; ventral,  $1\frac{2}{3}$ , or  $1\frac{1}{4}$  to anal, inserted little behind dorsal origin.

In alcohol nearly walnut-brown; scarcely paler below. Seven indistinct dull obscure rounded blotches, each about size of eye along lateral line and made up of dusky dots. Scales on back medially and along lateral line each with fine dusky dots terminally submarginal. Pale dusky streak from eye forward toward snout tip, another postorbital forward along suborbitals toward maxillary. Iris, pale slaty. Fins, all pale. Dorsal with six horizontal pale dusky lines, and caudal crossed by as many transversely, also small black spot at base of fin medially. Pectoral with six pale transverse streaks and four across ventral. Length, 90 mm.

*Pseudogobio drakei* J. F. Abbott differs in having 46 scales in the lateral line and unspotted fins.

### Subfamily LEUCISCINAE.

#### EXOGLOSSOPS, new genus.

Body robust and caudal peduncle deep. Head moderate. Eye small. Mouth inferior, with hard or bony lower jaw. No barbels. Pharyngeal teeth uniserial. Scales moderate, with well developed basal radiating striae, mostly uniform in size. Lateral line complete. Dorsal opposite ventral. Dorsal and anal without strong bony rays in front.

Characterized by the uniserial pharyngeal teeth, horny mandible, absence of barbels, large scales, etc. In a superficial way it suggests the American *Exoglossum*.

*Type*.—*Exoglossops geei*, new species.

("Eξω, outside; γλωσσα, tongue; ψ, appearance.)

#### EXOGLOSSOPS GEEI, new species.

Head, 4; depth,  $3\frac{1}{2}$ ; D. III. 7, I.; A. III. 6; P. I. 16; V. I. 7; scales, 38 in lateral line to caudal base, and 4 more on latter; 6 scales above lateral line to dorsal origin; 6 scales below lateral line to anal origin; 14 predorsal scales; head width,  $1\frac{2}{3}$  in its length; snout, 3; eye,  $4\frac{1}{2}$ ; maxillary, 3; interorbital,  $2\frac{2}{3}$ ; first branched dorsal ray, 1; first branched anal ray,  $1\frac{1}{2}$ ; least depth of caudal peduncle,  $1\frac{2}{3}$ ; pectoral  $1\frac{1}{6}$ ; ventral,  $1\frac{1}{2}$ .



Body oblong, compressed, robust, deepest about last third in depressed pectoral, and edges all convexly rounded. Caudal peduncle deep, compressed, least depth about four-fifths its length.

Head blunt, moderately compressed, flattened sides but slightly approximate below, and lower profile much more inclined. Snout broadly convex; length four-fifths its width. Eye elevated, diameter less than snout. Mouth oblique, slightly inferior. Maxillary well inclined to nostrils. Lips rather narrow, tough, with small lobe each side behind. Lower lip horny plate, and as seen below with broad median entire edge. Nostrils together, little nearer eye than snout tip. Interorbital slightly convex, depressed medially. Preorbital long as eye and suborbitals form narrow chain.

Gill opening forward to hind preopercle edge. Rakers, 2+8?, short weak rudiments, much less than filaments, which equal eye.

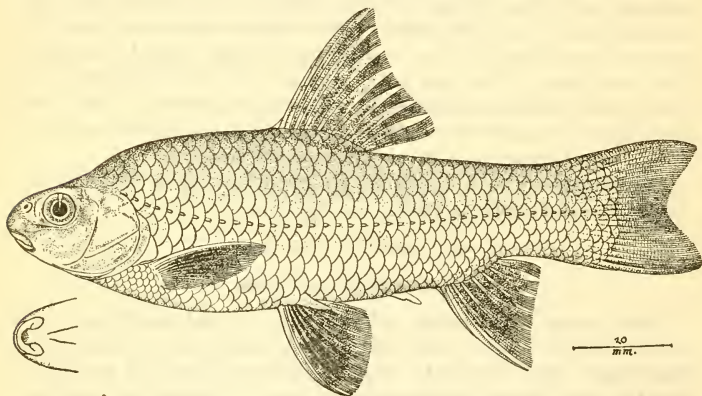


FIG. 1.—EXOGLOSSOPS GEEI, NEW SPECIES.

Teeth, 5—5, hooked, with broad, smooth grinding surfaces. Scales large, cycloid, more or less uniform, in even longitudinal rows. Scales on breast smaller than elsewhere. Scales with 36 apical radiating striae, and circuli fine. Ventral axillary scale well developed. Lateral line complete, of simple tubes midway along side.

Dorsal origin little nearer snout tip than caudal base; first branched ray depressed little longer than last. Anal inserted close behind depressed dorsal, similar to same. Pectoral not quite reaching ventral, which is inserted opposite dorsal origin, and reaches anal papilla. Latter long as eye.

Color in alcohol cameo to cinnamon brown generally, head and lower surfaces scarcely paler. Dorsal pale brownish, with dark oblique sub-basal streak, outer portion on fin soiled brownish. Anal largely dark brown, edges pale or whitish. Paired fins all darker to

deep brown or dusky, edges all pale, whitish near ends. Caudal pale brown, also iris.

Length, 145 mm.

Type.—Cat. No. 83981. U.S.N.M.

Soochow, China. Mr. N. Gist Gee.

Only the type known.

(Named for Mr. N. Gist Gee.)

MYLOLEUCISCUS ATRIPINNIS Garman.

Head,  $3\frac{1}{2}$ ; depth,  $3\frac{2}{3}$ ; D. III, 7; A. III, 8; scales (damaged) in lateral line, 39 to caudal base and 2 more on latter; 6 scales above lateral line to dorsal, 4 below to anal; 14 predorsal scales; snout 4 in head; eye,  $3\frac{1}{5}$ ; maxillary,  $3\frac{1}{2}$ ; interorbital,  $2\frac{1}{3}$ ; head width,  $1\frac{2}{3}$ . Snout depressed, rather obtuse, length two-thirds its width. Maxillary not quite to eye. No barbels. Interorbital depressed, but slightly convex. Gill opening forward about opposite postorbital edge. Rakers rudimentary, 2+7 obscure fleshy points, greatly shorter than filaments, which are  $1\frac{1}{5}$  in eye. Teeth 4-5, strong, short, conic; 2 or 3 molar-like; others shorter, with broad grinding surfaces. Scales with 2 to 9 apical radiating striae and basal circuli 22 to 30. First branched dorsal ray  $1\frac{1}{4}$  in head; first branched anal ray  $1\frac{2}{3}$ ; caudal, 1 +  $\frac{2}{3}$ ; pectoral,  $2\frac{2}{3}$ ; ventral,  $1\frac{1}{2}$ .

In alcohol pale worm brown generally, each scale with dusky dots along edges. Fins all brownish, thickly sprinkled with blackish dots, dusted in appearance, and less pronounced on caudal basally, which rather brownish. Iris pale leaden. No caudal spot or leaden band. Length, 82 mm.

As contended by Garman, *Leuciscus aethiops* Basilewsky is evidently congeneric, and may even be identical.

CULTER BREVICAUDA Günther.

Head,  $3\frac{2}{3}$ ; depth,  $4\frac{1}{4}$ ; D. II, 7; A. III, 28; scales 63 in lateral line to caudal base, and 3 more on latter; 12 scales above lateral line to dorsal origin, 7 below to anal origin; 40 predorsal scales; snout,  $3\frac{2}{3}$  in head measured from upper jaw tip; eye,  $4\frac{1}{5}$ ; maxillary, 3; interorbital, 5. Head width,  $2\frac{3}{4}$  in its total length. Snout conic, long as wide. Maxillary three-fourths of snout. No barbels. Interorbital slightly convex. Suborbital width narrow, covers about half of cheek. Gill opening forward to eye center. Rakers 7+20, lanceolate, long as filaments or  $1\frac{2}{3}$  in eye. Teeth 2, 3, 4—4, 3, 2, with slight terminal hooks and moderate grinding surfaces. Scales with 8 to 15 apical radiating striae, and circuli rather coarse, especially apically. Dorsal inserted about midway between hind eye edge and caudal base, first branched ray  $1\frac{1}{4}$  in head; first branched anal ray 2; upper caudal lobe  $1\frac{1}{4}$ , fin well forked; pectoral  $1\frac{1}{5}$ , reaches ventral, which inserted well before dorsal or reaches  $1\frac{1}{4}$  to anal or  $1\frac{2}{3}$  in head. In alcohol generally

ochraceous—buff, slightly darker on back; pale brownish line from gill opening along side of back to caudal base medially, little wider behind; fins and head all pale or whitish; iris slaty. Length, 147 mm.

### Family HEMIRAMPHIDAE.

#### HYPORHAMPHUS SINENSIS (Günther).

Head from snout tip,  $4\frac{3}{4}$ ; depth,  $2\frac{3}{8}$  in head measured from snout tip; D. II, 14; A. II, 16; head from snout tip,  $1\frac{1}{4}$  in rest of beak; snout,  $2\frac{1}{2}$  in head from upper jaw tip; eye,  $4\frac{1}{2}$ ; maxillary, 3; interorbital,  $4\frac{1}{2}$ . Body but slightly compressed. Head width,  $3\frac{3}{4}$  in head measured from upper jaw tip. Snout depressed, elongately triangular as seen from above; width at eyes  $1\frac{2}{5}$  its length. Eye large,  $1\frac{1}{3}$  in postocular region. Narrow bands of fine teeth in jaws. Maxillary  $\frac{3}{4}$  to eye. Interorbital level. Gill opening forward to front pupil edge. Rakers, 8 + 20, lanceolate, longest  $\frac{3}{4}$  of filaments and latter  $1\frac{1}{2}$  in eye. Scales very deciduous, mostly fallen, with 3 or 4 basal radiating striae; coarse circuli about 14. Dorsal inserted little behind last third in space between pectoral origin and caudal base; first branched dorsal ray 3 in head measured from snout tip; anal inserted opposite dorsal, first branched ray  $2\frac{5}{8}$ ; caudal slightly emarginate behind,  $1\frac{1}{2}$  in head; pectoral,  $1\frac{1}{2}$ ; ventral inserted midway between uppermost edge of gill opening and caudal base, fin,  $2\frac{1}{2}$ .

In alcohol pale clay color generally. Sides of head, especially opercle, iris and broad longitudinal band nearly equal to eye in width, from shoulder to caudal base medially, bright silvery white. Beak pale brown and uniform fins all much lighter. Length, 155 mm.

This example differs a little from *Hemirhamphus sinensis* Gunther in that the body appears but little compressed, lower jaw beyond snout tip  $4\frac{3}{4}$  to caudal base, triangular part of upper jaw wide at lung, eye slightly less than interorbital, or  $\frac{1}{2}$  of postorbital, and ventral origin placed little more posterior.

### Family SERRANIDAE.

#### SINIPERCA CHUATSI (Basilewsky).<sup>1</sup>

Head,  $2\frac{2}{5}$ ; depth,  $2\frac{7}{8}$ ; D. XII, 14,  $\tau$ ; A. III, 9,  $\tau$ ; pores in lateral line about 110 to caudal base; scales about 120 rows along lateral line to caudal base; 26 scales above lateral line to soft dorsal origin, 54 below to spinous anal origin; 34 predorsal scales; snout 4 in head measured from upper jaw tip; eye,  $5\frac{1}{4}$ ; maxillary,  $2\frac{1}{2}$ ; interorbital, 8. Back well elevated. Head width  $2\frac{3}{4}$  in its total length, and upper profile slightly concave over eye. Snout width slightly less than its length. Mandible well protruded. Maxillary extends slightly beyond eye, expansion  $1\frac{1}{2}$  in eye. Teeth in rather narrow

<sup>1</sup> Cat. Fish. Brit. Mus., vol. 6, 1866, p. 265



bands in jaws, front upper ones and few along each side below little enlarged; patch of small teeth on vomer and palatines. Preopercle edge denticulate; 2 large spines diverge at angle and 2 more down and forward on lower edge. Rakers 1+6, lanceolate  $1\frac{1}{2}$  in eye, and filaments  $\frac{5}{8}$  of rakers. About 40 rows of cheek scales; scales with 7 to 9 basal radiating striae, and apical striae 14 to 20. Fifth dorsal spine  $2\frac{1}{2}$  in total head length; eighth dorsal ray 3; second anal spine  $2\frac{9}{10}$ ; second anal ray  $2\frac{1}{10}$ ; caudal 2; pectoral  $2\frac{1}{2}$ ; ventral  $2\frac{1}{10}$ ; spine  $\frac{3}{5}$  of fin.

In alcohol ochraceous-tawny, with 4 slightly darker cross-bars; lower surface pale to buff, also most of fins, terminal part of spinous dorsal membrane blackish; soft dorsal and caudal with several pale tawny blotches; maxillary and mandible pale-like lower surface of head, though sides of mandible with 3 obscure tawny blotches; iris brownish-slate. Length 150 mm.

### Family SCIAENIDAE.

#### COLLICHTHYS LUCIDUS (Richardson).

Head 3; depth 3; D. IX, 28; A. II, 13; scales very caducous, thin, few remaining, about 50? (mostly pockets counted) in lateral line to caudal base; snout  $3\frac{1}{8}$  in head measured from upper jaw tip; eye 5; maxillary  $1\frac{1}{2}$ ; interorbital  $2\frac{2}{5}$ ; head width  $1\frac{9}{10}$ . Least depth of caudal peduncle half its length, which is 2 in head. Snout broad, convex, length  $\frac{3}{4}$  its width. Maxillary extends well beyond eye, expansion equals latter. Lower jaw slightly protrudes. Narrow band of fine teeth in each jaw, no canines. Head very cavernous. Median occipital ridge with 5 denticles, first of which points forward. Rakers 12+20, lanceolate, equal  $1+\frac{3}{4}$  eye diameters, and filaments  $\frac{1}{2}$  of rakers. Scales with 7 basal radiating striae, and coarse circuli 7 to 20. Lateral line complete, tubes rather large and simple, midway along side of caudal peduncle. Second dorsal spine 3 in head; twenty-fifth dorsal ray 2; seventh anal ray  $1\frac{2}{3}$ ; caudal ends in long median point;  $2\frac{1}{2}$  in combined head and trunk; pectoral  $1\frac{2}{3}$  in head; ventral  $1\frac{2}{3}$ .

In alcohol back nearly benzo-brown, deeper along dorsal bases; under surface pale to whitish; whole body with more or less silvery sheen; iris silvery-white; head paler than trunk; fins all pale or gray-white, dorsals little darker terminally, and caudal with dusky point. Length 84 mm.

### Family OPHICEPHALIDAE.

#### OPHICEPHALUS PEKINENSIS Basilewsky.

Head,  $2\frac{9}{10}$ ; depth, 6; D. 49; A. 31; scales, 61 in lateral line to caudal base; 6 scales above lateral line to dorsal origin, 12 below to anal origin; 30 predorsal scales; snout,  $5\frac{1}{2}$  in head from upper jaw

tip; eye, 7; maxillary,  $2\frac{1}{2}$ ; interorbital,  $5\frac{3}{4}$ . Head width,  $2\frac{1}{10}$  in total head length. Snout convex, width  $\frac{3}{4}$  its length. Maxillary extends little beyond eye, expansion  $1\frac{2}{3}$  in same. Lower jaw projects. Narrow bands of small teeth in jaws, some enlarged short conic teeth along sides of mandible and on palatines. Interorbital level. Rakers III + VI short low tubercles, rather irregular, largest little less than filaments, which  $1\frac{1}{2}$  in eye. Scales with 10 to 18 basal radiating striae, and circuli moderate; 13 scales on cheek behind eye to preopercle edge; scales but very little larger on top of head medially than on occiput and cheeks. Least depth of caudal peduncle,  $3\frac{2}{3}$  in total head length; caudal,  $1\frac{3}{4}$ ; pectoral,  $2\frac{2}{3}$ ; ventral,  $3\frac{1}{8}$ .

In alcohol deep neutral gray generally on back and upper surfaces, sides tinged with snuff-brown; under surface of head and body white, marked with small irregular spots of sepia; dozen pairs of large blotches, mostly vertical in disposition, irregular, along each side of trunk and three more on top of head; below some of dark blotches may fork or extend down into white of under surface, in which region is rich sepia; 2 dark longitudinal bands extend back from eye to gill-opening, well separated and slightly divergent to gill opening; dorsal and caudal deep neutral tint and anal pale basally, neutral to dusky marginally; pectoral pale brownish, round blackish spot size of pupil at base medially; ventral pale buff. Length 168 mm.

#### Family ANABANTIDAE.

##### POLYACANTHUS OPERCULARIS (Linnaeus).

Head,  $3\frac{1}{4}$ ; depth,  $2\frac{4}{5}$ ; D. XII, 6; A. XXI, 10; P.  $\tau$ , 9; v. I, 5; scales 28 in median lateral series from shoulder to caudal base medially; 14 scales transversely between spinous dorsal and anal origins; 8 scales transversely across caudal peduncle; 21 predorsal scales; head width  $1\frac{9}{10}$  its length; twelfth dorsal spine 2; least depth of caudal peduncle, 2; pectoral,  $1\frac{1}{2}$ ; ventral,  $1\frac{1}{8}$ ; snout,  $4\frac{1}{4}$ ; in head, measured from upper jaw tip; eye, 4; maxillary,  $3\frac{1}{2}$ ; interorbital,  $3\frac{1}{4}$ .

Body strongly compressed, rather evenly ellipsoid, deepest about midway in length. Flattened sides of head evenly converge above and below. Snout conic, length  $3\frac{1}{2}$  its width. Eye little advanced. Mouth oblique, mandible protruding. Maxillary not quite to eye, about  $\frac{4}{5}$  in snout, expansion  $1\frac{2}{3}$  in eye. Teeth fine, in bands in jaws. Interorbital moderately convex. Hind preopercle edge mostly entire, few weak serrae at lower hind angle. Gill opening to hind eye edge. Rakers rudimentary. Filaments about two-fifths of eye. Head, except lips, preorbital and mandible closely scaled; 4 rows of scales on cheek to preopercle angle; smaller scales crowded on bases of unpaired fins, especially caudal; scales with 12 basal radiating striae, and apical denticles 50; circuli moderate; branchiostegal membrane point extending backward nearly far as caudal; spinous anal, about

covered with small scales. Median dorsal rays produced as long opposite that of dorsal and rayed fin like soft dorsal; caudal rounded behind, much longer than head; pectoral rounded, inserted before dorsal; ventral inserted slightly behind pectoral origin; spine, one-third of fin and latter with first ray divided.

In alcohol bars of back brown to cinnamon-brown, becoming buff on lower sides and undersurfaces of head and trunk. Muzzle pale. Iris dull slaty. Upper surface of head mottled with cinnamon-brown; postocular oblique cinnamon-brown band down until opposite pectoral base and another crosses cheek from lower eye edge to chest; black opercular blotch about size of eye. Spinous dorsal and anal dusky or dusky neutral gray, becoming more neutral gray to brownish on rayed fins, though both of latter with obscure fine dark specks. Caudal and pectoral pale buff-pink, formed with many small, close-set darker spots. Length, 65 mm.

### Family TETRODONTIDAE.

#### SPHEROIDES OCELLATUS (Osbeck).

Head,  $2\frac{3}{4}$  to 3; depth (contracted),  $3\frac{1}{8}$  to  $3\frac{3}{8}$ ; D. IV, 12 or 13; A. III, 9 or 10; snout,  $2\frac{1}{3}$  to  $2\frac{2}{3}$  in head; eye,  $5\frac{1}{3}$  to  $6\frac{1}{3}$ ; mouth width, 3 to  $3\frac{3}{4}$ ; interorbital bony width,  $2\frac{3}{4}$  to  $2\frac{7}{8}$ ; head width,  $1\frac{1}{2}$  to  $1\frac{1}{4}$ . Snout depressed, length three-fourths to four-fifths its width. Eye slightly advanced. Mouth rather small. Lips papillose. Nostrils fleshy prominence, each with 2 pores. Interorbital broadly convex. Gill opening  $3\frac{3}{4}$  to  $5\frac{1}{10}$  in head. Back or predorsal nearly to nostrils finely asperous; sides smooth only in one small example, in others slightly rough area extends down over postocular region and another over postpectoral area to join asperous inflatable abdomen. Dorsal,  $1\frac{2}{3}$  to  $1\frac{3}{4}$  in head; anal,  $1\frac{1}{2}$  to  $1\frac{3}{4}$ ; caudal,  $1\frac{1}{2}$  to  $1\frac{3}{4}$ ; pectoral, 2 to  $2\frac{2}{3}$ .

In alcohol back drab brown, marked by irregular pale round spots; black blotch little larger than eye behind and slightly above pectoral axil and bordered in front and behind by pale line, each extending entirely across back to meet its fellow; dorsal base on large black blotch its entire extent, bordered broadly with paler; small round black spot, size of pupil, at pectoral base little above middle; fins all pale like belly, dorsal and caudal slightly darker; in 2 examples pale spots largely faded though transverse pale lines on back distinct; besides another across postocular; small black suprapectoral and dorsal blotches prominent. Two examples, 83 to 110 mm.

### Family SCORPAENIDAE.

#### MINOUS MONODACTYLUS (Schneider).

Head,  $2\frac{1}{2}$ ; depth,  $3\frac{1}{4}$ ; D. X, 11; A. 9; snout,  $2\frac{2}{3}$  in head measured from upper jaw tip; eye,  $4\frac{1}{8}$ ; maxillary,  $2\frac{1}{2}$ . interorbital,  $3\frac{1}{4}$ . Head width  $1\frac{2}{3}$  in total head length. Snout depressed medially, long as

wide. Eye supero-lateral, slightly advanced from center. Mouth moderate, lower jaw well protruded. Maxillary to eye center, expansion  $1\frac{1}{2}$  in eye. Teeth fine, in narrow bands in jaws; vomer with small cluster of fine teeth each side. Interorbital concave, likewise cheek and cranium, coarsely rugose. Preorbital with 2 spines, long hind one strong and directed back. Median strong preopercle spine horizontal, with small point at base, another small point above and four broad ones below; cheek buckles with small spine opposite middle of eye; each parietal ridge with two broad spines, hind one larger; postocular ridge ends in strong spine at suprascapula; preocular ridge with eight low even marginal denticles. Rakers 4+9, lanceolate, equal filaments or  $2\frac{1}{2}$  in eye. First dorsal spine 3 in head; least depth of caudal peduncle  $3\frac{3}{4}$ ; caudal  $1\frac{1}{2}$ ; pectoral  $1\frac{1}{4}$ , filament 2; ventral  $1\frac{1}{2}$ . Back brownish-drab in alcohol; lower surface white; bony ridges of head pale brown; terminal edges of dorsals and anal, most of pectoral and ventral black; bases of paired fins and anal whitish; caudal avellaneous, with three broad dark crossbars. Length 90mm.

*Minous adamsi* Richardson and *M. echigonius* Jordan and Starks, the latter only from Japan, are very closely related and possibly are really not distinct.

### Family COTTIDAE.

#### TRACHIDERMIS FASCIATUS (Heckel).

Head,  $2\frac{4}{5}$ ; depth,  $4\frac{1}{2}$ ; D. VIII, 19; A. 17; P. 10, 7; snout,  $3\frac{1}{5}$  in head; eye, 9; maxillary,  $2\frac{1}{2}$ ; interorbital,  $3\frac{2}{5}$ ; head width,  $1\frac{2}{5}$ . Snout depressed, broad, length  $\frac{3}{4}$  its width at front of eyes. Mouth broad, lower jaw slightly included. Maxillary to hind pupil edge, expansion equals eye. Teeth fine, in bands in jaws, on vomer and palatines. Interorbital slightly concave. Lower preopercle edge with 4 broad short spines, terminal or angular hooked upward. Rakers 9 very short rudiments on lower arch. Skin on head finely wrinkled and papillose; in trunk finely asperous, though prickles not extending on under surface. Lateral line with 38 small pores. Third dorsal spine 4 in head; seventh dorsal ray  $2\frac{3}{4}$ ; seventh anal ray 3; caudal 2; pectoral  $1\frac{3}{4}$ ; ventral  $2\frac{3}{4}$ ; least depth of caudal peduncle  $5\frac{7}{8}$ . In alcohol general color light buff, back and upper surfaces with obscure and very pale traces of brownish mottling; similar traces of pale brownish dots on pectoral and caudal fins basally.

### Family GOBIIDAE.

#### Subfamily ELEOTRINAE.

#### MICROPERCOPS, new genus.

Allied with *Eviota* Jenkins and *Trimma* Jordan and Seale, in its naked sides of the head and unarmed preopercle. It agrees with *Trimma* with the fully scaled nuchal region, in which respect it dif-

fers from *Eviota*. From both, however, it differs in the presence of the increased dorsal spines and much smaller scales.

*Philypnus cinctus* Dabry de Theirsant,<sup>1</sup> is described with but 7 dorsal spines and 36 scales in the lateral line. It evidently belongs in the present genus.

*Type*.—*Micropercops dabryi*, new species.

(*Microperca*, the smallest of American Darters, to which this little goby bears a superficial resemblance.)

MICROPERCOPS DABRYI, new species.

Head,  $3\frac{1}{2}$ ; depth,  $4\frac{2}{5}$ ; D. IX-I, 11; A. I, 7; P. I, 11; V. I, 4; scales, 39 from shoulder to caudal base and 2 more on latter; 10 scales transversely between soft dorsal and anal; 18 predorsal scales; snout,  $3\frac{2}{5}$  in head measured from upper jaw tip; eye,  $3\frac{3}{4}$ ; maxillary,  $2\frac{2}{5}$ ; interorbital,  $3\frac{1}{2}$ ; head width,  $1\frac{2}{5}$  in total head length; second

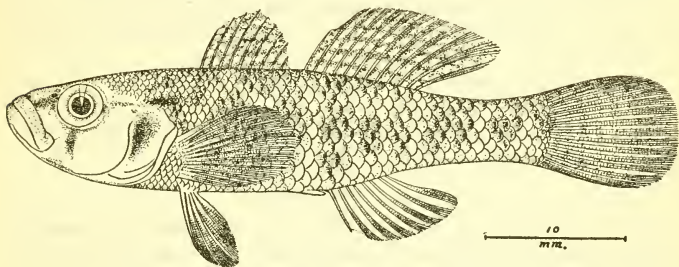


FIG. 2.—MICROPERCOPS DABRYI, NEW SPECIES.

dorsal spine, 3; first branched dorsal ray 2; first branched anal ray,  $2\frac{1}{2}$ ; caudal  $1\frac{1}{4}$ ; pectoral,  $1\frac{1}{2}$ ; ventral,  $1\frac{2}{3}$ .

Body elongate, slender, deepest at spinous dorsal, edges convexly rounded. Caudal peduncle compressed, least depth slightly over half its length.

Head well compressed, flattened sides slightly approximate above, and lower profile much more inclined. Snout conic, length  $\frac{4}{5}$  its width. Eye large, little smaller than snout, little advanced. Mouth oblique and lower jaw well protruded. Maxillary not quite to eye, and expansion about wide at pupil. Teeth small, conic, simple, in bands in jaws. Nostrils separated, front one near upper front pre-orbital edge and hind one close to upper eye edge. Interorbital depressed, scarcely concave. Gill opening forward to eye center. Rakers 3+8, lanceolate, shorter than filaments, which equal eye. Scales crowded on predorsal and breast and largest on posterior regions. Head apparently naked, except small scales on occiput,

<sup>1</sup> Am. Sci. Nat., ser. 6, vol. 1, Zool., 1874, p. 3, Mountains of Kiang-si.



which extend forward opposite hind pupil edge. Scales with 10 to 14 basal radiating striae, 20 to 23 apical denticles and circuli coarse. No lateral line.

Spinous dorsal inserted behind origins of paired fins, spines flexible and slender. Soft dorsal inserted about midway between front edge of eye and caudal base, and depressed fin  $1\frac{1}{2}$  to latter. Anal inserted little behind soft dorsal origin, much smaller than soft dorsal. Caudal rather broad, rounded behind. Pectoral not quite to anal. Ventral inserted slightly behind pectoral origin, about  $1\frac{1}{2}$  to anal. Anal papilla long as pupil.

Color in alcohol pale brownish, back and sides with nine darker crossbands, represented by as many of obscure brownish blotches along side medially, in which scale edges darker. Blackish blotch at suprascapula. Spinous dorsal dusky, otherwise fins all pale or dull gray-brown. Dorsals with five longitudinal dull dusky lines, and caudal with six obscure or slightly darker transverse lines. Iris pale slaty. Dark streaks from below eye over cheek and dusky blotch on opercle. Length, 47 mm.

*Type*.—Cat. No. 83982, U.S.N.M. Soochow, China. Mr. N. Gist Gee. Only the type obtained.

(For Pierre Dabry de Thiersant, an accomplished French fish-culturist and student of Chinese ichthyology.)

#### BUTIS BUTIS (Hamilton).

Head,  $2\frac{2}{3}$ ; depth,  $4\frac{1}{3}$ ; D. VII-I, 9; A. I. 8; scales, 36 in median lateral series from shoulders to caudal base; 13 scales transversely between anal and soft dorsal origins; predorsal scales 30; snout, 4 in head measured from upper jaw tip; eye, 5; maxillary,  $2\frac{2}{3}$ ; interorbital, 5. Head width half of total head length. Snout depressed, width  $\frac{1}{3}$  its length. Slight narrow supraorbital ridge. Maxillary reaches eye center, expansion half of eye. Mandible strongly projects. Teeth moderately long, conic, sharp pointed, in bands in jaw. Interorbital concave. Preopercle edge entire. Rakers 3+8 low broad tubercles, greatly shorter than filaments, which are  $1\frac{3}{8}$  in eye. Scales with 10 to 12 basal radiating striae, apical denticles 29 to 35, and circuli moderate. Third dorsal spine,  $2\frac{9}{10}$  in head; second anal ray,  $2\frac{3}{5}$ ; caudal,  $1\frac{1}{3}$ ; pectoral,  $1\frac{3}{5}$ ; ventral, 2.

In alcohol walnut-brown on back; sides and under surface fawn color; three large dark round blotches on side, buckled across back by narrow dark bar; dorsals and caudal dark or dusky-gray; caudal marked with fine waved dark cross-bands; spinous dorsal largely deep dusky and about three longitudinal dark bands on soft dorsal; other fins pale like lower surface, with few blotches of deep brown, also pectoral base deep brown; undersurface of head speckled with darker. Length, 83 mm.

## Family MASTACEMBELIDAE.

## MASTACEMBELUS SINENSIS (Bleeker).

Head,  $6\frac{1}{2}$ ; depth,  $10\frac{2}{3}$ ; D. XXXIII, 65; A. III, 64; scales about 345 in median lateral count from shoulder to caudal base; 50 scales transversely between anal origin and spinous dorsal base; 35 predorsal scales to occiput; snout,  $3\frac{1}{2}$  in head; eye, 8; maxillary,  $2\frac{7}{8}$ ; interorbital,  $7\frac{1}{4}$ ; pectoral,  $3\frac{2}{3}$ . Trunk, without head, equally long as rest of body. Head width  $3\frac{7}{8}$  in its length. Snout conic, width  $1\frac{4}{5}$  its length. Eye  $2\frac{3}{5}$  in snout. Maxillary to pupil. Lower jaw slightly shorter than upper. Bands of moderate conic teeth in jaws, none on mouth roof. Interorbital convex. Strong spine below eye. Rakers rudimentary and filaments long as eye. Scales with 15 to 18 marginal radiating striae, also 2 or 3 basal lobes formed; circuli coarse. In alcohol generally fawn-color, reticulated with deep brown to dusky; lower surface all finely and evenly reticulated with grayish. Length, 206 mm.

## Family SOLEIDAE.

## CYNOGLOSSUS ABBREVIATUS Gray.

Head, 4; depth,  $3\frac{4}{5}$ ; D. 105; A. 92; scales, 130 in median lateral line to caudal base; 24 scales above median lateral line to upper lateral line; snout, 3 in head; upper eye, 8; maxillary,  $3\frac{1}{8}$ ; head depth  $1\frac{1}{10}$ ; caudal  $2\frac{4}{5}$ . Maxillary extends eye diameter beyond lower eye. Eyes, about  $\frac{2}{3}$  an eye-diameter apart, and upper half an eye diameter in advance of lower. Scales with 2 to 6 basal radiating striae and 2 to 5 long slender apical spines. In alcohol left side cinnamon drab, very indistinctly mottled with darker; right side paler, uniform; fins all pale. Iris slightly slaty. Length 78 mm.

It appears to agree with the account by Peters.<sup>1</sup>

<sup>1</sup> Monatsber. Akad. Wiss. Berlin, 1880, p. 923.