

AN ACCOUNT OF AMAZON RIVER FISHES COLLECTED BY
J. B. STEERE; WITH A NOTE ON PIMELODUS CLARIAS.

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During 1901, Prof. J. B. Steere made collections for the United States National Museum in the Amazon River between Para and Manaus. Among these collections were a number of fishes, nearly all of medium size, which were selected of a certain length for exhibition at the Pan-American Exposition held in Buffalo, New York, in 1901. Most of them were displayed in formalin, and proved an interesting addition to the exhibit of fishes made by the Museum.

The collection contains a number of interesting forms, several of which are here described as new. We are indebted to Dr. Theodore Gill for suggesting the name *Tevionema* for the catfish with the flattened (tape-like) barbels, named specifically in honor of Professor Steere.

A note on some specimens of *Pimelodus clarias* from Paraguay is added to this paper.

POTAMOTRYGON HUMBOLDTII (Roulin).

One specimen.

SELENASPIS HERZBERGII (Bloch).

Three specimens, 185, 175, and 145 mm. long. These agree well with Bleeker's figure of *Hexanematichthys hymenorhinos*, which is evidently the young of *herzbergii*.

CALLOPHYSUS MACROPTERUS (Lichtenstein).

Two specimens.

PINIRAMPUS PIRINAMPU (Spix).

One specimen.

LUCIOPIMELODUS AGASSIZII (Steindachner).

The species resembles in general appearance *Pimelodus altipinnis*, but differs in the generic characters, which are as follows: No vomerine teeth; occipital process narrow, not reaching to dorsal plate; a frontal and a small occipital fontanelle. Bones of the head striate. Dorsal and pectoral spines not pungent, but obliquely segmented in their distal third; the anterior margin roughened by the prolongation of each segment into a small spine. Posterior margin of dorsal spine smooth; that of the pectoral serrate. Adipose dorsal very long; caudal widely forked; barbels flat, slightly margined.

Our specimen is 150 mm. long, and agrees well with Steindachner's description. The head is contained 5 times in the length of body and not 3 times, as given by Eigenmann and Eigenmann.

This fish was considered a distinct genus by Eigenmann and Eigenmann, who, however, did not name it because they had no specimen for direct examination. The genus was later named *Perugia* by Eigenmann and Norris. The example from the Steere collection shows that it is generically identical with *Luciopimelodus* of Eigenmann and Eigenmann.

RHAMDIA QUELEN (Quoy and Gaimard).

Three specimens.

PIMELODELLA CRISTATUS Muller and Troschel

One specimen.

PIMELODUS ALTIPINNIS Steindachner

One specimen.

Genus BRACHYPLATYSTOMA.

The genus *Brachyplatystoma* is distinguished technically from other *Pimelodinae* by the character of the premaxillary teeth. These are of two kinds, those on the anterior half of the premaxillary are villiform and fixed, while those on the posterior are longer, slenderer, and depressible. Six species are known: *filamentosum*, *vaillanti*, *reticulata*, *rousseauwii*, *juruense*, and *platynema*. Some of these species reach a very large size. Of *rousseauwii* (Goliath) Kuer says that he had specimens 6 feet long, and of *filamentosum* Goeldi recorded a specimen 1.95 meters long.

B. reticulata is known to reach a length of 3 feet.

The species change greatly with age; the young have fantastically elongated maxillary barbels and caudal filaments, so that the filament of the upper caudal lobe may be much longer than the rest of the fish, and the maxillary barbels may be twice the length of the fish, while in the adult the maxillary barbels may reach but little beyond the pectorals, and the caudal filament be correspondingly shortened.

BRACHYPLATYSTOMA GOELDII, new species.

The species here described is distinguished from others by the large spots on the upper half of the body. The type, a single specimen, is 223 mm. long to end of middle caudal rays. Barbels flattened; the maxillary barbel of one side 485 mm. long. Upper caudal lobe with the filament (broken at the tip) 293 mm. long. Head depressed, as in the other members of the genus, twice its depth at the occipital process. Upper jaw projecting an orbital diameter beyond the lower. Eye $4\frac{1}{2}$ in the snout, $9\frac{1}{2}$ in the head, $2\frac{1}{2}$ in interorbital. Width of head at rictus equal to snout and half the orbit. Occipital process scarcely reaching dorsal plate. Mental barbels reaching gill-opening, and the post mentals beyond base of pectorals. Premaxillary band of teeth wider than the vomerine band. Gill-membranes separated to the angle of the mouth. Gill-rakers slender and shorter than the eye. Skin on top and sides of head, and region along the anterior part of the lateral line, reticulated.

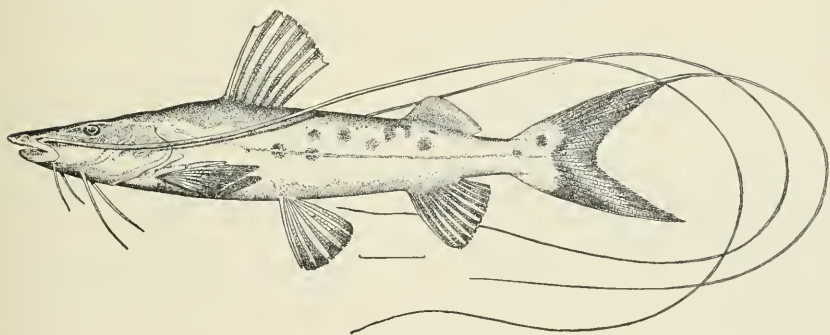


FIG. 1.—BRACHYPLATYSTOMA GOELDII.

Dorsal spine midway between tip of snout and middle of adipose; roughened in front and behind. Adipose equal to the anal in length. Lower caudal lobe without filament; equal to the head in length. Ventrals reaching about $\frac{2}{3}$ to anal, and the pectorals about $\frac{2}{3}$ to ventrals.

Color.—Dark above; white below; a number of round spots on the upper half of the body, each about equal in size to the diameter of the orbit. The base of the dorsal, caudal lobes, and anal distinctly rusty.

This species is readily distinguished from *B. vaillanti* by its short adipose fin and coloration; from *rousseauixii* by its projecting upper jaw, coloration and length of barbels; from *filamentosus* by its coloration, and shape of the vomerine patches of teeth, which in this species are very much wider than those of the palatines, while they are nearly of the same width in *filamentosus*. From *platyema* and *juruaense* it is distinguished by its exaggerated barbels, coloration, and projecting jaw.

We take pleasure in naming this species for Dr. Emilio A. Goeldi, of the Museo Paraense, who has described the modifications with age in the species of this genus.

Type.—Cat. No. 52561, U.S.N.M.

BRACHYPLATYSTOMA VAILLANTI (Cuvier and Valenciennes).

BRACHYPLATYSTOMA ROUSSEAUXII (Castelnau).

One specimen each.

TÆNIONEMA, new subgenus.

This subgenus resembles *Brachyplatystoma* but has flattened band-like barbels and a minute eye. Vomerine patches of teeth much deeper than the palatine patches, the two forming a comma-shaped patch much as in *Pseudoplatystoma*. Head extremely depressed; dorsal and pectoral spines feeble, not pungent.

Type.—*T. steerei*, new species.

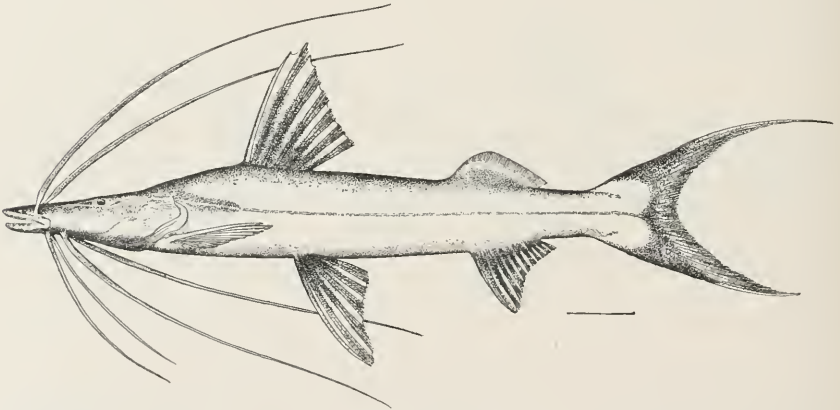


FIG. 2.—TÆNIONEMA STEEREI.

TÆNIONEMA STEEREI, new species.

Head extremely depressed, about three times as long as deep, its length contained $3\frac{1}{2}$ times in length of body. Snout spatulate, projecting little beyond the mandible; eye extremely small, situated in the posterior half of the head, its diameter contained 3 times in the interorbital (4 times in *platynema*); occipital process short, widely separated from the dorsal fin; upper half of the head covered with reticulated skin; eye a little more than twice as long as the fontanelle, its diameter contained 17 times in length of head, about 10 times in snout. Maxillary barbel reaching tip of ventrals. Branchiostegals 12. D. I, 6; A. III, 12; head, $3\frac{1}{2}$; depth, $7\frac{1}{2}$.

The first ray of the dorsal is contained $1\frac{2}{3}$ times in length of head; adipose fin $2\frac{1}{2}$ times as long as deep. Length of base of adipose fin

contained $1\frac{1}{2}$ times in its distance from the dorsal. Anal emarginate; the highest branched ray is $2\frac{1}{2}$ times as long as the last. Pectoral $1\frac{3}{5}$ in head; ventral much longer than pectoral, equal to its distance from the base of the pectoral, $1\frac{2}{5}$ in head. Caudal deeply forked, the lobes prolonged in filaments. Caudal peduncle $2\frac{1}{2}$ times as long as deep.

Silvery; darker above.

Length of specimen to end of middle caudal rays, 260 mm.

This species is very nearly allied to, if not identical with, *platynema* of Boulenger, from which it differs only in the size of the fins. *Brachyplatystoma platynema* may be referred to this subgenus.

Type.—Cat. No. 52571, U.S.N.M.

PLATYSTOMATICHTHYS STURIO (Kner).

Three specimens.

DORAS DORSALIS Cuvier and Valenciennes.

One specimen.

TRACHYCRYSTES GALEATUS (Linnæus).

Three specimens.

PSEUDAUCHENIPTERUS NODOSUS (Bloch).

Four specimens. All females. One with mature eggs. Dark blue above, extending on the sides to a greater or less extent. The way lateral line white; free from pigment. Caudal margined with black; the upper lobe with a more or less distinct black streak. Dorsal spine with a large swelling at the base.

AGENEIOSUS UCAYALENSIS Castelnau.

Ageneiosus militaris CUVIER and VALENCIENNES, Hist. Nat. Poiss., XV, 1840, p. 232.

Ageneiosus militaris, VALENCIENNES, Voy. d'Orbigny, IX, 1847, atlas, II, pl. iv, fig. 1.

Ageneiosus ucayalensis CASTELNAU, Anim. Am. Sud., XLIX, 1855, pl. xvii, fig. 2.

Ageneiosus militaris, KNER, Sitzb. Ak. Wien, XXVI, 1857, p. 437.

Ageneiosus militaris, GÜNTHER, Cat. Fish. Brit. Mus., V, 1864, p. 191.

Ageneiosus valenciennesi BLEEKER, Silures de Surinam, 1864, p. 82 (based on Valenciennes).

Ageneiosus valenciennesi, EIGENMANN and EIGENMANN, Proc. Cal. Acad., 2d Ser., I, 1888, p. 150.

Ageneiosus ucayalensis, EIGENMANN and EIGENMANN, Proc. Cal. Acad., 2d Ser. I, 1888, p. 150.

We have before us five specimens. Two are males measuring 196 mm. and 180 mm., and the other three are females, 200, 230, and 270 mm. long. It is very probable that these belong to the same species. The males apparently represent the *A. valenciennesi* of Bleeker, while the females represent the *A. ucayalensis* of Castelnau.

The differences between the males and females are as follows:

Male.—*a*. Maxillary barbel erectile, spinous, with 5 or 6 accessory spines on its anterior surface; profile very strongly concave; a bulge on the anterior surface near dorsal base; dorsal more or less crooked; equal or greater in height than its distance from the tip of the snout; its anterior margin spinulous, hooks more or less regularly turned to the right or left; posterior surface of dorsal spine smooth. Pectoral spine a little longer than snout and eye, nearly smooth in front and with recurved hooks behind. Eye 3 in snout, 6 in head, 3 in interorbital. Caudal margined with black. One of the males everywhere much darker than the other. (Two specimens.)

Female.—*aa*. Maxillary barbel minute, its base cartilaginous, its tip not reaching to the end of the premaxillary by a distance equal to the diameter of the pupil. Dorsal spine feeble, not as long as the first ray, its length contained a little more than twice in its distance from the tip of the snout. Pectoral spine slender, smooth in front, with recurved teeth behind; about equal in length to snout and orbit. Eye $3\frac{1}{2}$ to 4 in snout; $6\frac{1}{2}$ in head; $3\frac{3}{4}$ in interorbital. Caudal not margined with black. Profile but little concave. (Three specimens.)

HYPOPHTHALMUS EDENTATUS Spix.

One specimen.

HEMICETOPSIS CANDIRU (Spix).

One specimen, a male, agreeing with the description of Eigenmann and Eigenmann except in the character of the dorsal and pectorals. The



FIG. 3.—PARACETOPSIS OCCIDENTALIS. (After Steindachner.)

first ray of each of these is prolonged. The first dorsal ray is $2\frac{1}{2}$ times as long as second, being prolonged with a filament. The first pectoral ray is similarly prolonged, being about twice the length of the second ray and reaching to the ventrals.

Steindachner has^a called attention to this prolongation of the fin rays in the males.

The genus *Cetopsis*, as understood by Eigenmann and Eigenmann, contains four distinct generic types; one of these was described by Agassiz (*Cetopsis*); two others by Bleeker (*Hemicetopsis* and *Pseudocetopsis*); the fourth, with *occidentalis* as the type, may be named *Paracetopsis* (see fig. 3).

The genera may be diagnosed as follows:

- a.* Teeth conical or incisor-like; those on the vomer in a single series. Ventrals free or united to the belly *Hemicetopsis*
aa. Teeth on premaxillary villiform, in a band; those on the vomer and on the mandible incisor-like in a single series. Ventrals partly united to the belly *Cetopsis*
aaa. Teeth on the premaxillary and mandible villiform, in bands; those of the vomer in one or more uninterrupted series, incisor-like; ventrals united with each other..... *Pseudocetopsis*
aaaa. Teeth all villiform, in bands, those on vomer in two patches; ventrals partly joined to the belly *Paracetopsis*

LORICARIA CATAPHRACTA Linnæus.

Nine specimens.

PLECOSTOMUS PLECOSTOMUS (Linnæus).

Four specimens.

PSEUDACANTHICUS SPINOSUS (Castelnau).

One specimen.

HEMIANCISTRUS VITTATUS Steindachner.

Two specimens.

PTERYGOPLICHTHYS MULTIRADIATUS (Hancock).

Three specimens.

ANCISTRUS DOLICHOPTERUS Kner.

Two specimens.

HOPLOSTERNUM THORACATUM (Cuvier and Valenciennes).

One specimen.

STERNACHELLA SCHOTTI (Steindachner).

One specimen $7\frac{1}{2}$ inches long.

^a Flussf. Sudam., IV, p. 5.

STERNARCHORHYNCHUS MORMYRUS (Steindachner.)

In the general contour of the head these specimens agree with *S. curvirostris* Boulenger, but in the shape of the snout they agree more nearly with *S. mormyrus* Steindachner; in the number of anal rays (191-194) the specimens are intermediate between the two species. We are inclined to think, therefore, that *curvirostris* will prove identical with *mormyrus*.

RHAMPHICHTHYS MARMORATUS Castelnau.

Two specimens 14 and 16 inches long, respectively.

Anal rays 225-226. Eye equidistant from gill-opening and tip of snout, or nearer the former. Depth $1\frac{1}{5}$ to $1\frac{1}{6}$ in the length of the head. The snout of one of the specimens is upturned.

RHAMPHICHTHYS REINHARDTI (Kaup).

One specimen 29 inches long. Anal rays 396.

HYPOPOMUS ARTEDI Kaup.

Two specimens. Anal rays 220 and 226.

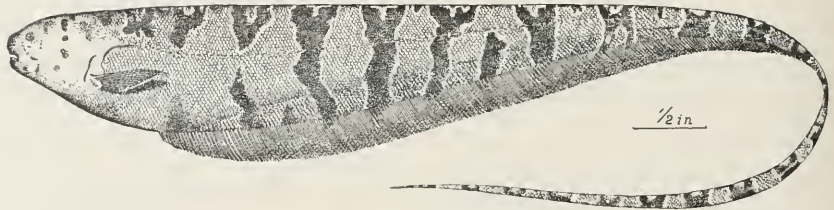


FIG. 4.—STEATOGENYS ELEGANS.

STEATOGENYS ELEGANS (Steindachner).

One specimen, 9 inches long.

EIGENMANNIA TROSCHELI (Kaup).

A single specimen intermediate in some respects between *axillaris* and *troscheli*, confirming the opinion of Steindachner that the two are synonymous. Anal beginning under the second fifth of the pectoral.

GYMNOTUS CARAPO Linnæus.

Four specimens, $13\frac{1}{2}$, $14\frac{1}{2}$, $15\frac{1}{2}$, and 17 inches long, respectively.

OSTEOGLOSSUM BICIRRHOSUM Agassiz.

D. 44; A. 54; V. 1, 5; scales 34. Two specimens, 15 and 16 inches long, respectively.

ELOPOMORPHUS ELONGATUS (Spix).

A single specimen, 10 inches long.

CURIMATUS KNERI Steindachner.

One specimen, $4\frac{1}{2}$ inches long.

PROCHILODUS TÆNIURUS Valenciennes.

Two specimens, 11 and $11\frac{1}{2}$ inches long, respectively.

HEMIODUS IMMACULATUS Kner.

D. 11; A. 11; scales 66. One specimen, 9 inches long.

MACRODON TRAHIRA (Spix).

D. 14; A. 10; scales 39. One specimen, $9\frac{1}{4}$ inches long.

ASTYANAX BIMACULATUS (Linnæus).

Three specimens, $3\frac{1}{4}$, $3\frac{1}{4}$, and 3 inches long, respectively.

CHALCINUS ELONGATUS Günther.

Three specimens, $7\frac{1}{4}$, $7\frac{1}{2}$, and 8 inches long, respectively.

PYGOPRISTIS SERRULATUM Cuvier and Valenciennes.

One specimen, 15 inches long.

MYLOSSOMA ALBISCOPIUS (Cope).

One specimen, $4\frac{1}{2}$ inches long, with 45 abdominal senæ. Scales in lateral line 100. The depth of the body is contained $1\frac{2}{3}$ times in its length; the head $4\frac{1}{5}$ times in the same length. The shape of the head resembles *aureus* more than *albiscopius*, as figured by Spix.

RHAPHIODON VULPINUS Spix.

Four specimens.

HOPLERYTHRINUS UNITÆNIATUS (Spix).

Two specimens, $8\frac{1}{4}$ and $8\frac{1}{2}$ inches long, respectively.

ENGRAULIS ATHERINOIDES (Linnæus).

ANABLEPS TETROPTHALMUS Bloch.

Three specimens, $5\frac{3}{4}$, $7\frac{1}{4}$, and $10\frac{1}{2}$ inches long, respectively.

NOTE ON A PARAGUAYAN FISH.

PIMELODUS CLARIAS (Bloch).

Four specimens have a number of characteristics in common. These have the humeral spine a little more convex on the dorsal margin than the ventral margin, but without distinct notches. The dorsal plate is composed of two elements, the anterior of which is separate from the posterior in the young and shows a suture in the adult. The adipose fin is contained $4\frac{3}{4}$ times in the length of the fish. The dorsal plate is long, and measures at least twice as much along the median line as along the sides.

The specimens are all faded and worn. The upper dorsal membranes are dusky, the dorsal margin blackish.

The foregoing notes relate to specimens Nos. 1552, 1556, and 1646, U.S.N.M.

Specimens in the Indiana University Museum, No. 9828 from Paraguay, and No. 9276 from Iguape, showing otherwise the same characteristics as those above mentioned, have the sides and back with several series of small spots, which extend on the caudal fin.

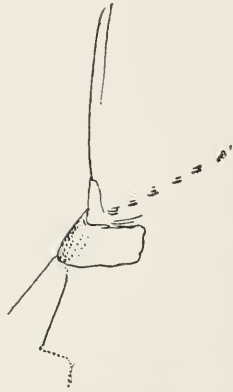


FIG. 5.—DORSAL PLATE OF PIMELODUS CLARIAS.

Another specimen differs notably from any of those described above. The dorsal margin of the humeral plate is very different from the ventral; its middle third is concave, the concave part being joined to the very obliquely-descending posterior margin at a distinct angle. The dorsal plate is very little longer along the median line than it is on the sides, the suture between the two elements composing the plate being much less conspicuous than in the preceding specimens. The adipose is contained 5 times in the body length. The maxillary barbel reaches to the end of the adipose. There are patches of teeth on the pterygoids, and very minute ones on the vomer.

Specimens in Indiana University, Nos. 9826 and 10286 from Paraguay, and No. 4268 from Tabatinga, that resemble this specimen except in the length of the barbels, are bright silvery in color, without spots.