

OCCASIONAL PAPERS OF THE MUSEUM OF
ZOOLOGY

UNIVERSITY OF MICHIGAN

ANN ARBOR, MICHIGAN

UNIVERSITY OF MICHIGAN PRESS

A REVIEW OF *MICROGLANIS*, A GENUS OF SOUTH
AMERICAN CATFISHES, WITH NOTES ON
RELATED GENERA*

BY A. LOURENÇO GOMES

THE genus *Microglanis* was proposed by Eigenmann (1912: 155) to include pimelodid catfishes previously referred to *Pseudopimelodus* but without backward projecting extensions of the premaxillary tooth patch. *Microglanis poecilus* Eigenmann, from British Guiana, was selected as the type of the genus, which was considered to include also *Pseudopimelodus parahybae* Steindachner (1880: 60) and *Pimelodus* (*Pseudopimelodus*) *pulcher* Boulenger (1887: 276). The description of *M. variegatus* Eigenmann and Henn (in Eigenmann, Henn, and Wilson, 1914: 14), *M. ater* Ahl (1936: 109), and *M. zonatus* Eigenmann and Allen (1942: 89) increased the size of the genus, and Gosline (1941: 85) added still another species when he referred *Pimelodus* (*Pseudopimelodus*) *cottoides* Boulenger (1891: 233) to *Microglanis*.

Pseudopimelodus Bleeker (1858: 196), having as genotype *Pimelodus raninus* Valenciennes (in Cuvier and Valenciennes,

* This study was completed under an inservice training grant awarded by the director of the Fish and Wildlife Service, United States Department of the Interior, under the program of the United States Government for cultural and scientific co-operation with other American republics.

1840: 157), was restricted to those species with backward projecting extensions of the premaxillary tooth patch (as in *P. raninus*; cf. Eigenmann, 1912: 154) by the action of Eigenmann (1912: 130, 151, and 155). The genus *Pseudopimelodus* as then understood included *Pimelodus raninus* Valenciennes, *Pimelodus bufonius* Valenciennes (in Cuvier and Valenciennes, 1840: 154), *Pseudopimelodus acanthochira* Eigenmann and Eigenmann (1888: 122), *Pimelodus (Pseudopimelodus) cottoides* Boulenger, *Pseudopimelodus villosus* Eigenmann (1912: 152), and *P. albomarginatus* Eigenmann (1912: 153). Eigenmann and Allen (1942: 90), however, defined *Pseudopimelodus* as "without angle projecting backward" in the premaxillary tooth patch, even though still referring to *P. raninus* as genotype. In this same work, *Zungaro* Bleeker (1858: 196; genotype *Pimelodus zungaro* Humboldt and Valenciennes, 1811: 170,¹ from the Rio Marañón) is characterized by the "occipital process short and notched at the tip for the reception of the much longer dorsal plate"; *Microglanis* is maintained on the basis of the very short occipital process not approximating the dorsal plate. Eigenmann and Eigenmann (1890: 109 and 110) gave as a character of *Pseudopimelodus parahybae (Microglanis)* the occipital process meeting the much longer dorsal plate. Schultz (1944: 197) pointed out the differences between *Pseudopimelodus* and *Zungaro*, but doubted the validity of *Microglanis*.

In identifying a collection of fishes from Rio Grande do Sul, Brazil, I found it necessary to investigate the status of *Pimelodus (Pseudopimelodus) cottoides* Boulenger, and the present paper is the result of the study which ensued. An attempt is made to determine the limits of the three genera involved. I am indebted to Dr. Reeve M. Bailey, of the Museum of Zoology of the University of Michigan (U.M.M.Z.), for help in all phases of the preparation of this paper. For the loan of specimens in their respective institutions, I wish to acknowledge the kindness of the late Dr. Thomas Barbour, of the Museum of Comparative Zoology (M.C.Z.), Dr. Wilbert M.

¹ This species has frequently been referred to *Pseudopimelodus*.

Chapman, of the California Academy of Sciences (C.A.S.), Miss Francesca La Monte, of the American Museum of Natural History (A.M.N.H.), Dr. George S. Myers, of the Natural History Museum of Stanford University (N.H.M.), M. Graham Netting and Dr. Arthur Henn, of the Carnegie Museum (C.M.), Karl P. Schmidt, of the Chicago Museum of Natural History (C.M.N.H.), and Dr. Leonard P. Schultz, of the U. S. National Museum (U.S.N.M.).

MATERIAL STUDIED AND METHODS

There is insufficient material of *Zungaro*, *Pseudopimelodus*, and *Microglanis* to permit a thorough revision of these genera. The material available is perhaps sufficient to establish the main characters by which they may be distinguished. In addition to the specimens of *Microglanis* reported below, the following material was examined.

Zungaro zungaro (Humboldt and Valenciennes).—Nine specimens: C.M. No. 6671a, 118 mm. in standard length, from Canal del Dique, Soplaviento; No. 6672, 600 mm., from Río Magdalena, Honda; and No. 6673a, 211 mm., from Río Magdalena, El Blanco; all collected in Colombia, by C. H. Eigenmann; C.A.S. No. 17974 (3), ranging from 97.4 to 144 mm., from Rios Popoi and Huachi; and No. 17037 (3), 120 to 195 mm., from Río Colorado, tributary to Río Bopi; all collected in Bolivia, upper Bení basin, by N. E. Pearson. These specimens are labeled *Pseudopimelodus zungaro*, and were so reported by Eigenmann (1922: 32) and Pearson (1924: 10—Indiana University Museum Nos. 17036 and 17037).

Pseudopimelodus acanthochirus Eigenmann and Eigenmann.—Nine specimens, C.M. No. 7119, ranging from 24.0 to 41.0 mm. in standard length, from Río Guaporé, near Santo Antonio do Guaporé, Mato Grosso, Brazil, Amazon basin, collected by J. D. Haseman. The lateral line is seen with difficulty in most of the specimens; in two it is complete to the base of the caudal fin. All have lateral backward projecting extensions in the premaxillary tooth patch, rounded posteriorly in the smallest specimens and pointed in the others.

Pseudopimelodus albomarginatus Eigenmann.—Two specimens: C.M. No. 1680 (holotype), 75.0 mm. in standard length, from Tukeit; and No. 1682c (paratype), 69.0 mm., from Waratuk; both collected in the Potaro River, tributary to the Essequibo River, British Guiana, by Eigenmann (1912: 153). Lateral line with large conspicuous pores to midway between dorsal and adipose fins and then with very small pores to base of caudal fin.

Pseudopimelodus pulcher (Boulenger).—One specimen, C.A.S. No. 17973, 88.0 mm. in standard length, from Tingo de Pauca, at the mouth of Río Crisnejas in Río Marañon, Peru, collected by Pearson. Premaxillary tooth patch with lateral backward projecting extensions not as long as in the other species of the genus.

Pseudopimelodus roosevelti Borodin.—Five specimens: C.M. Nos. 7120a,b, and 7064a,b (4—labeled *Pseudopimelodus pulcher*), 21.1 to 54.4 mm. in standard length, from Río Tieté, Salto do Avanhandava; and 7118a (labeled *Pseudopimelodus zungaro*), 135 mm., from Río Piracicaba, Piracicaba; all collected in São Paulo, Brazil, Paraná basin, by Haseman. Pre-dorsal plate nearly touching occipital process, not fitting into a notch in largest specimen, closer to occipital process in those 52.2 and 54.4 mm. long (No. 7064), fitting into a notch in occipital process in smallest specimens. All have lateral backward projecting extensions in the premaxillary tooth patch; in the smallest specimen (21.1 and 33.0 mm.—No. 7120) the caudal fin is deeply forked, the lobes pointed.

Pseudopimelodus transmontanus Regan.—Two specimens: C.M. No. 5331, 75.0 mm. in standard length, from Río Telembi; and C.A.S. No. 17977 (Ind. Univ. Mus. No. 13007), 80.0 mm., from a creek; both collected near San Lorenzo, Colombia, Patia basin, by A. Henn and C. Wilson (Eigenmann, 1922: 33). Pores on lateral line posterior to adipose fin minute.

Pseudopimelodus villosus butcheri Schultz.—Three specimens, U.M.M.Z. No. 142493 (paratypes), 37.0 to 119 mm. in standard length, from Río San Juan, near bridge south of Mene Grande, Venezuela, Maracaibo basin, collected by L. P.

Schultz (1944: 199). Premaxillary tooth patch with lateral backward projecting extensions.

The methods of taking measurements and counts are those described by Hubbs and Lagler (1941: 12-20). In the enumeration of fin rays the unbranched soft rays are represented by lower case Roman numerals (Hubbs, 1944: 76); the spines are represented by small capitals.

THE GENERA *ZUNGARO*, *PSEUDOPIMELODUS*,
AND *MICROGLANIS*

These pimelodid catfishes have the following characters in common: body stout, head broad, covered with skin; eye without free orbital rim; no palatine or vomerine teeth; teeth villiform in each jaw forming a patch on the premaxillary and one on mandible; small fontanel on top of head extended backward to level of posterior margin of eye; snout not produced; barbels flattened; adipose small; dorsal anterior to pelvic insertion; dorsal and pectoral fins with a well-developed pungent spine. The three genera are contrasted in the following key.

KEY TO THE PIMELODID CATFISHES OF THE GENERA *Zungaro*,
Pseudopimelodus, AND *Microglanis*

- 1a.—Premaxillary band of teeth with backward projecting extensions; distance from tip of snout to last well-developed pore on lateral line, 1.0 to 1.1 in standard length; caudal fin forked, more deeply in the young; posterior edge of dorsal spine sometimes serrate or crenulate, sometimes smooth; species of moderate to large size 2
- 2a.—Posterior nostril about equidistant from eye and anterior nostril; anterior edge of pectoral spine smooth, weakly serrate or serrate only at the base; humeral process short and strong, triangular, 2.0 or more in the length of pectoral spine, not reaching its middle; predorsal plate meeting and fitting into a notch of the occipital process; lower jaw slightly projecting *Zungaro*
- 2b.—Posterior nostril closer to eye than to anterior nostril; anterior edge of pectoral spine strongly serrate; humeral process elongate, 1.5 or less in the length of pectoral spine, reaching its middle; predorsal plate meeting or failing to join occipital process, sometimes fitting into a notch in the young; jaws usually subequal *Pseudopimelodus*
- 1b.—Premaxillary band of teeth without backward projecting extensions; distance from tip of snout to last well-developed pore on lateral

line, 1.3 to 1.9 in standard length; caudal fin emarginate, or forked; posterior edge of dorsal spine smooth; species of small size.

Microglanis

TENTATIVE LIST OF THE SPECIES OF *ZUNGARO*
AND *PSEUDOPIMELODUS*

- Zungaro* Bleeker, 1858 (tautotype *Pimelodus zungaro* Humboldt and Valenciennes, 1811); Bleeker, 1862; Eigenmann, 1910; Eigenmann and Allen, 1942.
= *Pseudopimelodus* Eigenmann and Eigenmann, 1890, *partim*; Eigenmann, 1922, *partim*.
- 1.—*Z. mangurus* (Valenciennes, in Cuvier and Valenciennes, 1840) Eigenmann, 1910 and 1912. Type locality, "eaux douces du Brésil et du Paraguay." The validity of this species is doubtful (Eigenmann, 1912: 151); Gosline (1941: 85; 1945: 27) included it in *Cephalosilurus*.
 - 2.—*Z. zungaro* (Humboldt and Valenciennes, 1811) Bleeker, 1858 and 1862. Type locality, "la rivière des Amazones."
= *Z. humoldti* Bleeker, 1862, *nomen nudum*.
? *Pseudopimelodus bufonius* Steindachner, 1880, *nec* Valenciennes.
- Pseudopimelodus* Bleeker, 1858 (logotype *Pimelodus raninus* Valenciennes, in Cuvier and Valenciennes, 1840, designated by Bleeker, 1862); Eigenmann and Eigenmann, 1890, *partim*; Eigenmann, 1910 (*P. bufonius* incorrectly cited as genotype) and 1912; Eigenmann, 1922, *partim*; Eigenmann and Allen, 1942.
= *Batrachoglanis* Gill, 1858 (orthotype *P. raninus* Valenciennes); Eigenmann, 1910, *partim*.
- 1.—*P. acanthochirus* Eigenmann and Eigenmann, 1888. Type locality, Gurupá and Tajapurú, Pará; Tefé and Jutai, Amazonas, Brazil, Amazon basin.
 - 2.—*P. albomarginatus* Eigenmann, 1912. Type locality, Tukeit, Potaro River, British Guiana.
 - 3.—*P. bufonius* (Valenciennes, in Cuvier and Valenciennes, 1840) Bleeker, 1858. Type locality, Cayenne, French Guiana. The validity of this species is doubtful (cf. Eigenmann, 1912: 151); Gosline (1941: 85; 1945: 27) included it in *Cephalosilurus*.
 - 4.—*P. chiarus* (Valenciennes, in Cuvier and Valenciennes, 1840) Bleeker, 1858. Type locality, Rio Sabará, Minas Gerais, Brazil. The validity of this species is in need of verification. Gosline (1945: 33) included it in *Zungaro*.
 - 5.—*P. pulcher* (Boulenger, 1887) Eigenmann and Allen, 1942. Type locality, Canelos, Ecuador, upper Marañon basin. Boulenger described this species as without backward projecting extensions in the premaxillary tooth patch. Eigenmann included it

- in *Batrachoglanis* (1910: 383) and later in *Microglanis* (1912: 155), probably on the basis of this character. Eigenmann and Allen (1942: 91) placed it in *Pseudopimelodus*, after studying the specimen which I subsequently examined.
- 6.—*P. raninus* (Valenciennes, in Cuvier and Valenciennes, 1840) Bleeker, 1858. Type locality "Mana," ?French Guiana (Gosline, 1941: 85; 1945: 28). Eigenmann and Eigenmann (1890) and Eigenmann (1912) gave as type locality "Mana, Rio Janeiro."
- 7.—*P. roosevelti* Borodin, 1927. Type locality, Rio Mogí-guassú, São Paulo, Brazil.
- 8.—*P. transmontanus* Regan, 1913. Type locality, Rios San Juan and Patia, Colombia.
- 9.—*P. variolosus* Ribeiro, 1914. Type locality, Rio Taquirí, Mato Grosso, Brazil, Paraguay basin.
- 10.—*P. villosus* Eigenmann, 1912.
- 10a.—*P. v. villosus* Eigenmann, 1912. Type locality, Potaro landing, British Guiana, Essequibo basin.
- 10b.—*P. v. butcheri* Schultz, 1944. Type locality, Río San Juan, near bridge south of Mene Grande, Venezuela, Maracaibo basin.
- ‡11.—*Pseudopimelodus* sp.
 = *Pseudopimelodus zungaro* Eigenmann and Eigenmann, 1888 and 1890, *nec* Humboldt. Goiaz, Brazil. Eigenmann (1912: 151) referred to specimens from Goiaz, previously reported by Eigenmann and Eigenmann as *P. zungaro*, as perhaps representing a different species. In the event those specimens are distinct from other known species a new name will be needed, since *zungaro* is not available.

MICROGLANIS EIGENMANN, 1912

Pseudopimelodus.—Eigenmann and Eigenmann, 1890: 108, *partim*.

Batrachoglanis.—Eigenmann, 1910: 383, *partim*.

Microglanis.—Eigenmann, 1912: 155 (orthotype *M. poecilus* Eigenmann, 1912: 155). Eigenmann, 1922: 33. Gosline, 1941: 85. Eigenmann and Allen, 1942: 89. Gosline, 1945: 28.

This genus includes small Pimelodid catfishes which differ from the related genera *Zungaro*, *Pseudopimelodus*, *Lophiosilurus*, and *Cephalosilurus* principally in the lack of lateral backward projecting extensions in the premaxillary tooth patch. *Lophiosilurus* and *Cephalosilurus* have the head very broad and much depressed and the lower jaw strongly pro-

jecting. In *Microglanis* the head is narrower anteriorly and not as greatly flattened; *M. variegatus* is the only species in the genus in which the lower jaw protrudes and the head is broader than long. *Zungaro* and *Pseudopimelodus* are compared with *Microglanis* in the key given above. In contrast to *Zungaro*, *Microglanis* and *Pseudopimelodus* have the nostrils similarly placed, the anterior edge of the pectoral spine strongly serrated, the predorsal plate meeting or failing to join the occipital process, and the humeral process elongate, contained two or less than two times in the pectoral spine. *Microglanis* is believed to be more closely related to *Pseudopimelodus* than it is to *Zungaro*.

Schultz (1944: 197-98) has questioned the validity of the genus *Microglanis*, and George S. Myers has suggested (in correspondence) the possibility that the species here referred to *Microglanis* are only the young of *Pseudopimelodus*. In young specimens of *Pseudopimelodus villosus butcheri* and *P. roosevelti* even at a size comparable to that of *Microglanis* the premaxillary tooth band has well-developed backward projecting extensions, not essentially different from those of large individuals. Large specimens of *Microglanis* differ not at all from small ones; at all sizes the premaxillary teeth are in an almost transverse band, rounded laterally and without backward extensions. The discovery of developed eggs in the ovaries of a specimen of *M. iheringi* only 52 mm. in standard length provides conclusive evidence that this species is in reality of small size—not the young of another fish.

The genus *Microglanis* has an extensive geographic range, but its species constitute a closely knit unit. There doubtless are excellent color characters in the group, which I believe will provide clear-cut specific differences. Nevertheless, color characters were neglected in the present study, because most of the available specimens were pale, some completely discolored, and therefore not suitable to the study of color features.

KEY TO THE SPECIES OF *Microglanis*

- 1a.—Lower jaw projecting; head very wide, broader than long. Pacific slope of Ecuador (near Vinces) *M. variegatus*

- 1*b.*—Jaws subequal; head longer than broad. Atlantic slope 2
 2*a.*—Distance from tip of snout to last well-developed pore on lateral line, 1.3 to 1.4 in standard length. Colombia and Venezuela (Río Turmero, Aragua, and Carabobo).
M. iheringi, new species
 2*b.*—Distance from tip of snout to last well-developed pore on lateral line, 1.5 to 1.9 in standard length 3
 3*a.*—Mouth large, the gape (greatest width across opening of mouth) less than 1.6 in head length. British Guiana, Venezuela (Río Orinoco basin), and ?Amazon.
M. poecilus
 3*b.*—Mouth small, the gape more than 1.7 in head length 4
 4*a.*—Maxillary barbel long, reaching beyond tip of the short humeral process. Peru (Río Morona ?) *M. zonatus*
 4*b.*—Maxillary barbel short, not reaching or hardly reaching tip of the elongate humeral process 5
 5*a.*—Anal rays, 10 to 12. Southeastern Brazil (Río de Janeiro to Río Grande do Sul) *M. cottoides*
 5*b.*—Anal rays, 14. Middle Brazil *M. ater*

Microglanis variegatus Eigenmann and Henn

Microglanis variegatus.—Eigenmann and Henn, in Eigenmann, Henn, and Wilson, 1914: 14 (original description; type locality, near Vinces, Ecuador). Eigenmann, 1922: 33, Pl. 2, Figs. 3 and 4 (description; same locality). Gosline, 1941: 85; 1945: 28 (listed only).

Three specimens examined: C.A.S. No. 17971 (three—types, Indiana University Museum No. 13106), two, 36.5 mm. in standard length (one is the holotype), and one, 28.5 mm.; and C.M. No. 5418a (paratype), 29.5 mm.; all from a shallow, plant grown, forest pool near Vinces, Provincia Rios, Ecuador, collected by A. Henn.

Microglanis iheringi, new species²

Holotype, Chicago Museum of Natural History, No. 35350, 35.0 mm. in standard length, from Río Turmero, near Turmero, Aragua, Venezuela, collected by V. Barnes, Jr., on September 24, 1937. Eight paratypes: C.M.N.H. Nos. 35349, 35347, 35351, and U.S.N.M. No. 121985 (2), 26.2 to 31.0 mm., taken with the

² Named for my former teacher, the late distinguished Brazilian ichthyologist, Dr. Rodolpho von Ihering.

TABLE I
 PROPORTIONATE MEASUREMENTS IN *Microglanis iheringi*, NEW SPECIES
 The proportions are expressed as thousandths of the head length.

	Paratypes		Holo- type	Paratypes						Mean
	52.0	49.0		31.5	31.0	30.5	29.6	27.0	26.2	
Standard length (mm.)	.....	.....	35.0	.....	.....	.....	.....	.....	.....	34.6
Proportions of standard length										
Head length	278	281	285	285	290	281	287	300	290	286
Length of maxillary barbel	342	269	342	317	290	291	280	325	339	310
Length of outer mental barbel	288	224	242	260	225	229	229	248	229	241
Length of inner mental barbel	192	153	142	158	148	137	135	151	156	152
Body depth	211	193	214	190	225	213	199	185	190	202
Body width	211	214	202	215	209	206	209	207	206	208
Predorsal distance	346	351	371	365	358	360	371	370	366	362
Distance from tip of snout to pectoral insertion	250	244	257	253	258	262	266	259	267	257
Distance from tip of snout to pelvic insertion	521	510	485	504	483	485	489	503	496	497
Distance from tip of snout to anal origin	715	714	691	730	709	704	709	722	687	709
Distance from tip of snout to adipose origin	719	695	685	685	709	721	750	740	732	716
Distance from tip of snout to last well-developed pore on lateral line	769	730	737	.....	719	724	716	740	748	735
Caudal peduncle depth	134	122	140	126	129	131	135	.....	122	129
Caudal peduncle length	186	163	171	174	161	160	168	.....	183	170
Length of dorsal spine	.....	.....	142	.....	161	147	168	166	152	156

TABLE I—(Continued)

	Paratypes		Holo- type	Paratypes				Mean
	201	157		183	163	141	185	
Highest dorsal ray	134	126	142	136	151	144	137	
Length of dorsal base	250	244	205	200	225	259	238	
Distance from dorsal to adipose (excluding fin bases)	186	204	205	212	219	202	199	
Length of adipose fin	150	153	171	165	161	165	158	
Length of adipose base	173	144	171	158	158	177	166	
Highest anal ray	146	144	142	158	154	174	153	
Length of humeral process	192	183	200	206	193	202	192	
Length of pectoral spine	161	163	194	165	174	189	176	
Longest pelvic ray								
Proportions of head length								
Head width	891	927	830	888	844	858	859	
Eye length	103	86	80	80	86	89	89	
Snout length	379	369	400	366	366	370	374	
Interocular width	475	449	460	422	422	469	453	
Width of gape	565	579	580	544	581	555	571	
Width of premaxillary tooth patch	386	362	400	400	388	382	381	
Width of mandibular tooth patch*	351	362	320	320	351	394	344	

* The width of the mandibular tooth patch was taken from the middle obliquely to the posterior extremity.

holotype; A.M.N.H. No. 8665a,b (2), 49.0 and 31.5 mm., collected in the state of Carabobo, Venezuela; M.C.Z. No. 32124, 52.0 mm., from Colombia, collected by Niceforo Maria, in 1929.

DESCRIPTION.—For proportionate measurements see Table I. Body compressed, especially toward caudal peduncle, its cross section at dorsal origin roughly triangular, the depth and width progressively decreasing to the tail. Body depth, 4.6 in standard length;³ body width at tip of humeral process, 4.9. Standard length, 1.3 in total length. Head broad, with a few scattered pores on top and side, the dorsal profile straight, inclined downward to tip of snout; head length, 3.5 in standard length; head width, 1.2 in head length. Eye minute, superior, its length, 13 in head length, 5.7 in the interocular width; interocular width, 2.2 in head length. Nostrils far apart, the anterior tubular, close to margin of snout, the posterior near eye, with a flap; distance from posterior nostril to anterior margin of eye about twice in the distance between nostrils. Snout short, rounded, sharp, its length, 2.5 in head length, 1.2 in interocular width. Frontal fontanel small, ovoid, extended backward to the level of posterior margin of eye. Occipital with minute, circular fontanel, smaller in largest specimens, just in front of base of occipital process. Occipital process strong, short, in contact with the much longer dorsal plate.

Mouth rather wide, anterior, the gape more or less horizontal, 1.7 in head length. Premaxillary tooth patch without backward projecting extensions, rounded laterally, with a small notch in the middle of the rear edge. Mandibular tooth patch much longer than premaxillary one, crescent shaped, very narrow posteriorly. Maxillary barbel long, reaching at least the middle of humeral process, sometimes extended beyond tip of humeral process and middle of pectoral spine, as in the holotype. A groove extends backward from the origin of maxillary barbel to level of eye. Outer mental barbel reaching beyond insertion of pectoral spine, its origin posterior to origin of inner mental barbel. Inner mental barbel short, roughly two-thirds the length of the outer. Gill-rakers fili-

³ Proportionate measurements given in the text are those of the holotype.

form, 2 + 5 on first branchial arch of a paratype 29.6 mm. in standard length; longer on lower ramus than on upper ramus.

Dorsal rounded, slightly higher than long, the spine short and smooth, its origin somewhat anterior to level of tip of depressed pectoral spine, its distance from tip of snout, 2.7 in standard length; last dorsal ray above insertion of pelvic fin or a little anterior to it; distance from dorsal to adipose (excluding fin bases), 4.9 in standard length. Humeral process elongate, pointed, extended to level of middle of pectoral spine, its length, 2.0 in head length. Pectoral truncate, its first branched ray the longest, the distance from its insertion to tip of snout, 3.9 in standard length. Pectoral spine longer and stronger than dorsal spine, slightly recurved near tip, 1.4 in head length, with hooks along both the anterior and the posterior edges, those on posterior edge stronger. On the proximal part of the anterior edge the hooks are small and more or less perpendicular to the spine; those distad are stronger, slightly curved and retrorse, except for a few near the tip, which are antorse or perpendicular to the spine. In one specimen (52 mm.) the distal third of the pectoral spine bears antorse hooks. Posterior hooks slightly curved, retrorse, except near the tip of the spine where they are more or less perpendicular to the spine. Pelvic rounded, its insertion situated at middle of body. Adipose free posteriorly, the distance from its origin to tip of snout, 1.4 in standard length; adipose base, 5.8 in standard length; length of adipose fin, 7.0 in standard length. Anal rounded, deep, the distance from its origin to tip of snout, 1.4 in standard length. Distance from tip of snout to last well-developed pore on lateral line, 1.3 in standard length. Caudal slightly forked, the lobes pointed. Caudal peduncle relatively long, 5.8 in standard length; caudal peduncle depth, 7.1 in standard length, 1.2 in caudal peduncle length. Dorsal rays, *r*, 6; anal rays,⁴ *iv* or *v*, 7 or 8 (*v*, 8 in holotype); pectoral rays, *r*, 5; pelvic rays, *i*, 5.

Coloration of body variegated, the light areas minutely stippled with dark and the dark areas with light. Upper part

⁴ First two soft unbranched rays difficult to count unless good illumination and high magnification are used.

of head and body dark brown, in largest specimens darker between the nape and posterior base of dorsal fin; upper part of head with a few whitish points in some specimens; snout somewhat lighter; a transverse light band from the insertion of pectoral fin of one side, across nape, to the other side; an elongate, more or less elliptical spot, wider posteriorly, in front of and at the origin of adipose fin. Side of head lighter than top, with two light spots, very distinct in the holotype, but not as well marked in all specimens. Side of body mostly lighter than the upper part, with a dark brown band from between pectoral and pelvic fins of one side to the other, confluent on top with the dark brown of the back; another band, which is very narrow inferiorly and much wider superiorly, extends from the anterior part of anal to adipose, and a dark wide crossband across peduncle and base of caudal rays; both are confluent with the dark coloration of the back. Lower surface uniformly whitish, stippled with dark brown, much darker on largest specimens. Dorsal fin mostly dark brown, with a large light spot on the posterior four or five rays; tips of rays light. Adipose dark brown in the middle, light anteriorly and posteriorly. Other fins mostly light, with spots of dark brown, which form one or two indistinct irregular bands, lacking in part in some small specimens, including the holotype, more distinct in largest specimens, which have the fins darker. Caudal fin with a broad, dark band parallel to the posterior edge. The specimen from Colombia is darker than are the others, and the contrast between dark and light areas is not as well marked as in the holotype and paratypes collected in Aragua; the specimens from Carabobo are intermediate in color between those from Colombia and from Aragua.

M. iheringi is the only species in the genus known from northwestern South America. The coloration of the body is more similar to that of *M. cottoides* and *M. zonatus* than to that of the other species of *Microglanis*. The chief characteristics of *M. iheringi* are the typical coloration, the relatively narrow width of the head and body, the gently rounded contour of the snout, the rather well-developed lateral line, and the relatively long caudal peduncle.

The two largest specimens are adult females; in one of them (the 52 mm. specimen from Colombia) the ovaries are full of ripe eggs.

Microglanis poecilus Eigenmann

Microglanis poecilus.—Eigenmann, 1912: 155, Pl. 12, Fig. 2 (original description; type locality, below Packeoo Falls, Essequibo River, British Guiana). Caporiacco, 1935: 58 (Rupununi River, British Guiana, Essequibo basin; listed only). Gosline, 1941: 85; 1945: 28 (listed only).

Forty-six specimens examined: C.M. No. 1676a,b (two—labeled *Batrachoglanis raninus*, but the largest specimen is the holotype and the smaller a paratype of *M. poecilus*), 27.5 and 17.0 mm. in standard length, from below Packeoo Falls in Essequibo River, British Guiana, collected by C. H. Eigenmann; A.M.N.H. No. 14663a,b (2), 68.0 and 69.0 mm., from ?Amazon basin; N.H.M. Nos. 40189 (30) and 40190 (12), 21.0 to 28.0 mm., from Caño de Quiribana, some 34 kms. north of the mouth of Río Apure into Río Orinoco, Venezuela, collected by Carl Ternetz.

Microglanis zonatus Eigenmann and Allen

Microglanis zonatus.—Eigenmann and Allen, 1942: 89, Pl. 3, Figs. 1 and 2 (original description; type locality ?Río Morona, Peru). Gosline, 1945: 29 (listed only).

One specimen examined: C.A.S. No. 17970 (holotype, Ind. Univ. Mus. No. 15890), 19.5 mm. in standard length, from ?Río Morona, Peru, collected by W. R. Allen.

Microglanis cottoides (Boulenger)

Pseudopimelodus charus.—Steindachner, 1876: 632, *nec* Valenciennes (description; Rio Paraíba and Santa Cruz, Rio de Janeiro, Brazil).

Pseudopimelodus parahybae.—Steindachner, 1880: 60, Pl. 1, Figs. 2 and 2a (original description; type locality, Rio Paraíba and Santa Cruz, Rio de Janeiro, Brazil). Eigenmann and Eigenmann, 1888: 122 (listed only); 1890: 110 (description; same locality).

Pimelodus (*Pseudopimelodus*) *parahybae*.—Boulenger, 1891: 233, *nec* *Pimelodus* (*Rhamdia*) *parahybae* Steindachner, 1876: 615.

Batrachoglanis parahybae.—Eigenmann, 1910: 383 (listed only).

Microglanis parahybae.—Arnold and Ahl, 1936: 248, fig. Gosline, 1941: 85; 1945: 28 (listed only).

Pimelodus (Pseudopimelodus) cottoides.—Boulenger, 1891: 233, Pl. 25, Fig. 2 (original description; type locality, Rio Camacuã, Rio Grande do Sul, Brazil).

Microglanis cottoides.—Gosline, 1941: 85; 1945: 28 (listed only).

As a consequence of Boulenger's action (1891: 233) in uniting Steindachner's species, *Pimelodus (Rhamdia) parahybae* (1876) and *Pseudopimelodus parahybae* (1880) in the genus *Pimelodus*, the latter specific name becomes a homonym, and is not available even though the species was subsequently placed in *Microglanis*. Boulenger correctly indicated that the name *cottoides* was necessary even if the nominal species *parahybae* and *cottoides* should prove to be identical. It is now apparent, after the study of the specimens indicated below, that *Pseudopimelodus parahybae* Steindachner, 1880, and *Pimelodus (Pseudopimelodus) cottoides* Boulenger, 1891, are the same, and the species must be known as *Microglanis cottoides* (Boulenger).

Seventy-four specimens examined: C.A.S. No. 17969 (fifty-nine, ?paratypes), ranging from 18.5 to 42.0 mm. in standard length, from Rio Grande do Sul (probably Rio Camaquã), Brazil, collected by H. von Ihering; and No. 17972 (two, ?paratypes of *M. parahybae*), 27.0 and 29.0 mm., from Santa Cruz, Rio de Janeiro, Brazil; U.M.M.Z. No. 143294, 36.0 mm., from the Lagôa dos Quadros basin, Conceição do Arroio County, Rio Grande do Sul, Brazil, collected by H. Kleerekoper; U.S.N.M. No. 94298 (2), 22.0 and 32.5 mm., from Rio Paraíba, Rio de Janeiro, Brazil; C.M. No. 7140a, 56.0 mm., from Rio Ribeira, São Paulo, Brazil, collected by J. D. Haseman; and C.M. No. 6931a-g (9), 21.0 to 51.0 mm., from Uruguaiana, Rio Grande do Sul, Brazil, collected by Haseman.

Microglanis ater Ahl

Microglanis ater.—Ahl, 1936: 109 (original description; type locality, "Mittelbrasilien"). Arnold and Ahl, 1936: 248, fig. Gosline, 1941: 85; 1945: 29 (listed only).

LITERATURE CITED

AHL, ERNST

- 1936 Beschreibungen dreier neuer Welse aus Brasilien. *Zool Anz.*, 116 (3-4): 109-11.

ARNOLD, J. PAUL, and ERNST AHL

- 1936 Fremdländische süßwasserfische. Braunschweig: Gustav Wenzel & Sohn. Pp. 1-592, frontisp., 2 pls., 752 figs.

BLEEKER, P.

- 1858 Siluri. *Ichthyologiae Archipelagi Indici*. Batavia: Lange & Co. 1 (Act. Soc. Reg. Scient. Ind. Neerl., IV): i-xii, 1-370.
- 1862 Atlas ichthyologique des Indes Orientales Néerlandaises. Amsterdam: Frederic Muller. 2: 1-112, Pls. 49-101.

BORODIN, NIKOLAI A.

- 1927 Some New Catfishes from Brazil. *Amer. Mus. Novit.*, 266: 1-7, Figs. 1-4.

BOULENGER, GEORGE A.

- 1887 An Account of the Fishes Collected by Mr. C. Buckley in Eastern Ecuador. *Proc. Zool. Soc. London*, pp. 274-83, Pls. 20-24.
- 1891 An Account of the Siluroid Fishes Obtained by Dr. H. von Thering and Herr Sebastian Wolff in the Province Rio Grande do Sul, Brazil. *Ibid.*, pp. 231-35, Pls. 25-26.

CAPORIAMCO, LODOVICO DI

- 1935 Spedizione Nello Beccari nella Guiana Britannica. *Pesci. Monitore Zool. Italiano (Firenze)*, 46 (3): 55-70.

CUVIER and VALENCIENNES

- 1840 Histoire naturelle des poissons. Strasbourg: Levrault. 15: i-xxxii, 1-540, 2, Pls. 421-455. (This volume accredited solely to Valenciennes.)

EIGENMANN, CARL H.

- 1910 Catalogue of the Fresh-Water Fishes of Tropical and South Temperate America. *Repts. Princeton Univ. Exp. to Patagonia, 1896-1899*. 3 (4): 375-511, 1 map.
- 1912 The Freshwater Fishes of British Guiana, Including a Study of the Ecological Grouping of Species and the Relation of the Fauna of the Plateau to That of the Lowlands. *Mem. Carnegie Mus.*, 5: i-xxii, 1-578, Pls. 1-103, Figs. 1-39.
- 1922 The Fishes of Western South America, Part I. The Fresh-Water Fishes of Northwestern South America, Including Colombia, Panama, and the Pacific Slopes of Ecuador and Peru, Together with an Appendix upon the Fishes of the Rio Meta in Colombia. *Ibid.*, 9 (1): 1-346, Pls. 1-38, Figs. 1-21.

- EIGENMANN, CARL H., and WILLIAM R. ALLEN
 1942 Fishes of Western South America, I. The Intercordilleran and Amazonian Lowlands of Peru; II. The High Pampas of Peru, Bolivia and Northern Chile, with a Revision of the Peruvian Gymnotidae and of the Genus *Orestias*. Lexington: Univ. Kentucky. Pp. i-xv, 1-494, Pls. 1-22, Figs. 1-48, 1 map.
- EIGENMANN, CARL H., and ROSA S. EIGENMANN
 1888 Preliminary Notes on South American Nematognathi, I. Proc. Cal. Acad. Sci., 2 (1): 119-72.
 1890 A Revision of the South American Nematognathi or Cat-Fishes. Occ. Papers Cal. Acad. Sci., 1: 1-509, Figs. 1-55, 1 map.
- EIGENMANN, CARL H., ARTHUR HENN, and CHARLES WILSON
 1914 New Fishes from Western Colombia, Ecuador and Peru. Indiana Univ. Studies, 19: 1-15.
- GILL, THEODORE
 1858 Synopsis of the Fresh-Water Fishes of the Western Portion of the Island of Trinidad, W. I. 38—Synopsis of the Fresh-Water Fishes of Trinidad. Ann. Lye. Nat. Hist., 4: 363-430.
- GOSLINE, WILLIAM A.
 1941 Synopsis of the Genera of Pimelodid Catfishes Without a Free Orbital Rim. Stanford Ichth. Bull., 2 (3): 83-88.
 1945 Catálogo dos Nematognatos de água-doce da América do Sul e Central. Bol. Mus. Nac. (Rio de Janeiro), n. s., Zool., 33: 1-138.
- HUBBS, CARL L.
 1944 Fin Structure and Relationships of the Phallostethid Fishes. Copeia, 2: 69-79.
- HUBBS, CARL L., and KARL F. LAGLER
 1941 Guide to the Fishes of the Great Lakes and Tributary Waters. Bull. Cranbrook Inst. Sci., 18: 1-100, Figs. 1-118.
- HUMBOLDT, A. VON, and VALENCENNES
 1811 Recherches sur les poissons fluviatiles de l'Amérique équinoxiale, in A. von Humboldt and A. Bonpland, Voyage aux régions équinoxiales du nouveau continent, fait en 1799-1804. Paris: F. Schoell. 2 (4): 145-216, Pls. 45-48.
- PEARSON, NATHAN E.
 1924 The Fishes of the Eastern Slope of the Andes, I. The Fishes of the Rio Beni Basin, Bolivia, Collected by the Mulford Expedition. Indiana Univ. Studies, 11 (64): 1-83, Pls. 1-12, Figs. 1-4.
- REGAN, C. TATE
 1913 The Fishes of the San Juan River, Colombia. Ann. Mag. Nat. Hist., 8 (12): 462-73.

RIBEIRO, ALIPIO DE MIRANDA

- 1914 Pimelodidae, Trachycorystidae, Cetopsidae, Bunocephalidae, Auchenipteridae e Hypophthalmidae. Comm. L. Telegr. Estr. de Matto Grosso ao Amazonas (Rio de Janeiro), Anexo 5, Zool., 15: 1-13, Pls. 1-2, 2 figs.

SCHULTZ, LEONARD P.

- 1944 The Catfishes of Venezuela with Descriptions of Thirty-Eight New Forms. Proc. U. S. Nat. Mus., 94: 173-338, Pls. 1-14, Figs. 1-5.

STEINDACHNER, FRANZ

- 1876 Die Süßwasserfische des Südöstlichen Brasilien (III). Sitzungb. K. Akad. Wiss. Wien, 74 (1): 559-694, Pls. 1-13.
1880 Zur Fisch-Fauna des Cauca und der Flüsse bei Guayaquil. Denks. K. Akad. Wiss. Wien, 42: 55-104, Pls. 1-9.

A. Lourenço Gomes

PLATE I

Microglanis iheringi, new species

FIG. 1.—Holotype from Río Turmero, Aragua, Venezuela; 35 mm. in standard length; C.M.N.H. No. 35350. Lateral view.

FIG. 2.—The same. Dorsal view.

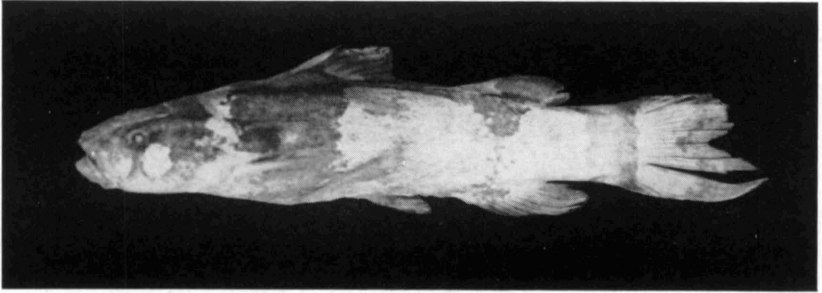


FIG. 1

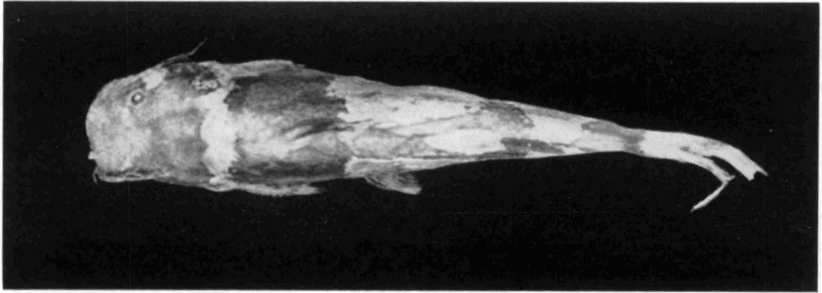


FIG. 2

