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TWO NEW SPECIES OF PIMELODIDAE FROM NORTH-WESTERN SOUTH AMERICA (PISCES, NEMATOGNATHI)

by

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With 3 text-figures and 3 plates

Since the publication of a paper on Auchenipteridae and Pimelodidae (Mees, 1974), I have received additional material of several of the genera there revised. This material includes a new species of *Pseudopimelodus* from Venezuela, increasing the number of species of that genus to six (two of which have several subspecies), and a new species of *Microglanis* from Ecuador, the eighth member of its genus. The main purpose of this paper is the description of these two new species. In addition, fresh material of *Microglanis iheringi*, a species of which previously I had examined only a single specimen, enabled me to supply some additional notes on it as well as an illustration showing its distinctive characters much better than do the photographs published by Gomes (1946: pl. 1), the only previous illustrations.

For the loan or donation of specimens here discussed and for other valuable ichthyological material I am indebted to Dr. J. E. Böhlke and Dr. W. G. Saul (Academy of Natural Sciences, Philadelphia, U.S.A.), Dr. P. Cala (Dept. de Biología, Universidad Nacional de Colombia, Bogotá, Colombia) and Dr. D. C. Taphorn (Maracaibo, Venezuela).

Pseudopimelodus apurensis species nova (pl. 1)

Material. — One specimen, 11 February 1976, Río Arichuna (tributary of Apure-Orinoco), near San Pedro, municipality of Rincón hondo, Apure, Venezuela (received from Dr. D. C. Taphorn, RMNH no. 27644), standard length ca. 290 mm, holotype.

Diagnostic characters. — Even in its genus, consisting of heavy-bodied bottom dwellers, this species is distinguished by its large head and heavy body; the body is not so strongly tapering towards the tail as in other species; head and body not so depressed as in the other species with broad and heavy

heads. Eyes small. Dentition in roof of mouth with large backward projections as in *P. nigricauda* and *P. fowleri*, but the present species differs from both these and all other members of its genus by the larger number of gill-rakers, most of which are rudimentary and placed very close together (fig. 1).

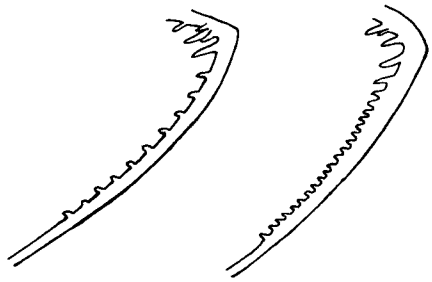

Fig. 1. First (outer) gill-arches of *Pseudopimelodus nigricauda* (left) and *Pseudopimelodus apurensis* (right).

Description. — D I.6, A 11 (iii.8), P I.6, V 6 (i.5), C with 19 divided rays, gill-rakers 1 + 1 + 22, of which only the first four developed, all others rudimentary, placed close together; branchiostegals 10. Mouth wide with protruding lower jaw; teeth in both jaws in a broad band, the band of premaxillary teeth with distinct backward projections laterally. Eyes very small, their greatest diameter 5-6 times in snout, ca. 7 times in bony interorbital and ca. 20 times in head. Two pairs of nostrils; anterior nostrils distinctly tubular, placed on the hind border of the upper lip, the posterior ones some distance behind them and a little nearer to eyes than to the anterior nostrils. The maxillary barbels reach about two-thirds the distance from their implantation to the pectoral base; the outer pair of mental barbels is ca. four-fifths of the length of the maxillary barbels and the inner pair is about half the length of the outer pair. Head covered with thick skin which is not smooth but has numerous small papillae. Postoccipital process narrow, its end forming a small swallow-tail into which the sharp tip of the narrow predorsal plate fits. Postcleithral process small, less than half the length of the pectoral spine, pointed. No axillary pore.

Head from middle of upper lip to end of opercular flap 3.0 times in standard length; greatest width of body 3.0 times in standard length; greatest depth of body 4.33 times in standard length; predorsal length 2.56 times in standard length.

Dorsal fin with one spine and six divided rays; dorsal spine not very strong, encased in skin, equal in length to snout plus eye and ca. four times in predorsal length; when pressed down the dorsal fin just reaches the adipose

fin. Anal fin with three simple and eight divided rays, the seventh and eighth rays longest, a little longer than the basis of the fin and 0.4 times length of head; when depressed it reaches to just beyond the hypural joint. Pectorals rounded, with one spine and six rays; the spine strong, flattened, about 3.2 times in predorsal length, on both sides provided with a series of strong teeth over its whole length, those along the anterior border short, almost knob-like, 21-22 in number, those along the posterior border much longer, numbering 16-18, directed inwards; the spine is covered by thick skin through which, however, the teeth are clearly visible, and it has a tip of thick leathery skin, making spine and tip about one-third longer than the spine alone; the first ray is a little longer than spine with soft tip, the following rays are successively shorter and closer together, the last one being little more than half the length of the first one. Ventrals rounded, with six rays of which the first and shortest one is simple, the others divided, rather large but not reaching the anal fin, the longest ray about 2.4 times in predorsal length. Caudal fin damaged, but is appears to have been rounded, it has the rather high number of 19 divided rays besides, above and below, series of shorter and rudimentary simple rays, the complete number being 39 (xii.19.viii). Adipose fin well-developed as in other members of the genus, originating a little in advance of the anal fin and its base continued to opposite the end of the anal base; the height of the adipose fin is about one-third of the length of its base and half the length of the caudal peduncle.

Sensory canal system well-developed; lateral line complete, almost straight, continued onto the caudal fin, with evenly spaced pores almost to the end; pores on the head behind the lips, near eyes and nostrils, but also a few on the dorsal surface of the head. Reference has already been made to the numerous papillae covering the skin: these might also have a sensory function.

Colours in a preserved condition. Body and fins light grey-brown, covered with numerous ill-defined blackish or dull brownish dots; these dots are darkest, blackish, on the upper surface of the head, gradually changing to dull brownish on flanks and under parts.

Habitat. — At the place of collecting the following notes were taken: water colour brown, turbidity 38 cm, current slow, bottom with mud and leaves, water temperature 26.5° C, pH 5.5.

Discussion. — Besides the specimen described above, a much larger specimen (s. l. ca. 400 mm) was obtained at a different locality nearby; as its size caused mailing problems I have not been able to examine this larger fish, but Dr. Taphorn informed me about it as follows: "It is very similar to the smaller specimen, except that the dorsal fin reaches only a bit more than

half way to the adipose fin. It has the 'bumps' on the skin even more developed than in the small one".

Even the "small" specimen here described is considerably larger than any specimen of *Pseudopimelodus* I have handled when writing my revision of the genus, so that obviously the question arises in how far characters mentioned in the description could be factors of size rather than being of specific value. Whereas this may well be true for certain measurements and proportions, it is definitely not so for others.

The most convincing specific character is that of the gill-rakers. In the material of *Pseudopimelodus* examined by me there does not appear to be much difference in shape and numbers of gill-rakers between small specimens and large specimens, except that in small specimens of *P. z. zungaro* there is possibly a tendency to having one or two more than large specimens (cf. Mees, 1974: 204), a difference I am now inclined to ascribe to normal individual variation. For example, the available material of *P. nigricauda* ranges in standard length from 29 to 212 mm, without noticeable change in gill-raker numbers.

It is generally known that in many species of fishes the relative size of the eye diminishes as individuals grow. However, an actual decrease in size would and could not occur. When therefore in *P. apurensis* the eye diameter is 4 mm and in the much smaller largest specimen of *P. nigricauda* (RMNH no. 26739, s. l. 212 mm) it is 5 mm, one must conclude that the former has definitely smaller eyes. The difference in shape of the head is also real: in all specimens of *P. nigricauda* the head is very flat, the body width between the cleithra being almost twice the depth of the head at the same place; in specimen no. 26739 the actual measurements are: width 71 mm, depth 37 mm, depth: width = 0.52, whereas in *P. apurensis* these measurement are 98 and 63 mm, and 0.64.

Microglanis pellopterygius species nova (pl. 2)

Microglanis iheringi; Saul, 1975, Proc. Acad. Nat. Sci. Philad., 127: 115, 128 (tributary streams of both Aguarico and Cojeno drainages, Amazonian Ecuador).

Material. — Three specimens, 1976/1968, tributary stream of Río Aguarico at Santa Cecilia (00°06' N, 76°51' W), Napo, Ecuador (W. G. Saul, ANSP no. 130437, the 43 mm specimen now RMNH no. 27714), standard length 36½, 43, 70 mm; the largest specimen is the holotype.

Diagnostic characters. — The most conspicuous diagnostic character of this species is found in its colouration, in particular the broad brown bands on all fins; additional characters are the shape of the pectoral spine and the comparatively large size.

Description. — D I.6, A 10 (iii or iv.6 or 7), P I.6, V 6 (i.5), C 13 or 14 divided rays, besides several shorter and rudimentary simple rays, branchiostegals 10, gill-rakers 9 (3 + 1 + 5, 2 + 1 + 6, 2 + 1 + 6), well-developed except for the last one which may be almost rudimentary. Mouth very wide, terminal; teeth in both jaws in a not particularly wide band, the band in the upper jaw laterally rounded with no trace of backward projections and not nearly reaching to the corner of the mouth, the band in the lower jaw is continued farther, almost to the corner of the mouth, towards which it tapers off gradually. Eyes small, entirely covered by skin, their shape more or less round or distinctly elliptical, their greatest diameter 3.5-4.0 times in snout, 3.5-4.0 in bony interorbital and 9-10 in head. The two pairs of nostrils tubular, the anterior pair placed just behind the upper lip, the posterior pair in front of and slightly inwards from the eyes; the distance of each nostril from its counterpart is over half as large as the distance separating anterior and posterior nostril on each side. Maxillary barbels almost or just reaching to below the dorsal origin; the outer mental barbels are about four-fifths of the length of the maxillary barbels; the inner pair of mental barbels is about two-thirds of the length of the outer pair.

Head broad and depressed, its width almost twice its depth; its length 3.0-3.2 times in standard length; greatest width of body 3.4-3.5 times in standard length; greatest depth of body 4.6-5.0 times in standard length.

Dorsal fin with one spine and six divided rays; the spine is rather short, 2.0-2.5 times in head and 2.7-3.2 times in predorsal length, it is smooth, encased in thick and strongly pigmented (blackish brown) skin, and provided with a long soft tip; when pressed down the dorsal fin reaches only half way to the adipose fin. Anal fin with three or four simple and six or seven divided rays, making a total of ten, the sixth and seventh rays are longest, over a third longer than the anal base, and twice in head; when depressed it reaches to the hypural joint. Pectorals with one spine and six rays; the spine is strong, its length is about equal to the distance from tip (middle) of snout to eye, and two in head; anterior border of spine with 10-12 teeth of moderate size, not continued to the end of the spine which is smooth on its anterior face; in shape and direction of the teeth there is much variation: either all may point inwards (smallest specimen), or the distal two or three may point outwards, and in the case of the largest specimen are separated from the others by an Y-shaped tooth; posterior border of the spine with 9-10 larger teeth, which are basally broad but strongly tapering and with the tips curved inwards; these teeth are continued to very near the end of the spine (fig. 2); the spine is provided with a soft tip of about half its length; the first ray is of the same length as spine with soft tip; the second ray is a little shorter

than the first one, and the succeeding rays decrease in length to the last, which is about half the length of the first. Ventrals rounded in outline, consisting of six rays of which the first one is simple, the others divided; the first and sixth rays are about equal in length, the central ones longer; the longest rays about two in head; when depressed, the ventrals do not reach

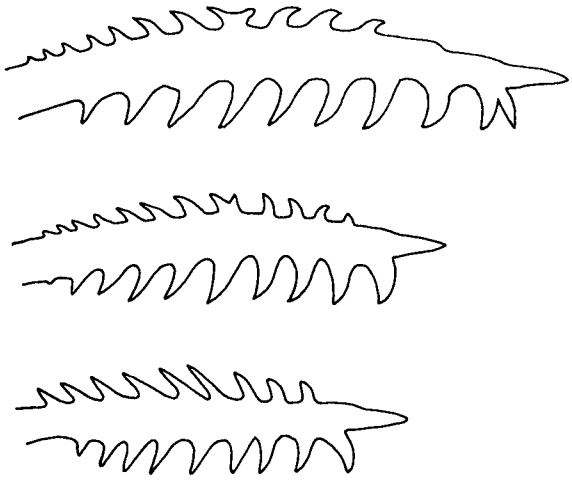

Fig. 2. Right-hand pectoral spines of three specimens of *Microglanis pellopterygius*. 10 ×.

the anal base. Caudal fin scalloped, with 13 or 14 divided rays and, above as well as below, a series of shorter and rudimentary simple rays. Adipose fin well-developed, originating a little in advance of the anal fin; its base is a little longer than the anal fin base; its height is one-third to one-fourth of the length of its base.

The lateral line is well-developed in its anterior part, almost straight, with regularly-spaced pores to beyond the dorsal base, but the developed part does not quite reach to below the adipose fin; the posterior part is rudimentary and barely discernible, or appears to be entirely absent. The sensory canal system of the head is well-developed, with pores below the eyes, near the nostrils, along the upper lip, and also on the flat dorsal surface of the head; also a series of pores ventrally, mainly behind the lower lip. Besides having pores, the skin of the head and the nape is provided with small papillae, especially on the opercles, around nostrils and eyes and on the basal portions of the maxillary barbels; these might also have a sensory function.

Colours in a preserved condition. Body dark brown, its ventral surface from chin to anus much more lightly pigmented; in addition there is a paler area on the cheeks just behind the eyes, there is a broad pale band across the

nape, reaching from cleithrum to cleithrum, and ill-defined paler areas are found behind the dorsal fin, broadening downwards, and on the anterior part of the caudal peduncle. All fins contrastingly marked with blackish brown and white: the dorsal fin is dark with a white window reaching from the first or the second ray backwards and with small white tips to the rays; the anal fin is marked similarly; the pectorals are blackish brown with large white basal parts; the ventrals also have their basal part white, the larger distal part blackish brown and the tip of the rays white; the caudal fin is white with a broad dark cross-bar and a dark base, and the adipose fin is blackish brown with its tip and a spot on its basal origin lighter.

Habitat. — This was described in some detail by Saul (1975) to whose paper I refer for particulars.

Discussion. — The uncanny resemblance between members of this genus and juvenile *Pseudopimelodus* has been commented upon by (and has confused) previous authors. In general appearance the present species resembles *Pseudopimelodus raninus* so much that I felt obliged to make a direct comparison with small specimens of that species. Besides several differences in colour-pattern, I found the difference in premaxillary dentition conspicuous and convincing. The comparison confirmed me in the opinion expressed previously (Mees, 1974: 221-222) that *Microglanis* should be retained as a valid genus differing from the closely related *Pseudopimelodus* by small size, posteriorly poorly developed lateral line and especially shape of the premaxillary band of teeth.

Microglanis iheringi Gomes (pl. 3)

Microglanis iheringi Gomes, 1946, Occ. Pap. Mus. Michigan, 494: 9, pl. I — Río Turmero, near Turmero, Aragua, Venezuela.

Material. — Five specimens, 14 November 1973, Cano San Miguel, tributary of the Río Guatiquía, upper part of the Río Meta, Colombia (P. Cala, RMNH no. 27381), standard length 28-47 mm. One specimen, 20 October 1977, Cano Caicara, Mantecal, Apure, Venezuela (D. C. Taphorn, RMNH no. 27715), standard length 23 mm.

Characters. — D I.5½ or I.6, A 11-12 (iii or iv.8), P I.6, V 6 (i.5), C 13-14 divided rays and several shorter and rudimentary simple rays, branchiostegals 9-10, gill-rakers 5-7 (1 or 2 + 1 + 3 to 5), well-developed, except for sometimes the first and the last ones, which are shorter.

Pectoral spine (fig. 3). The pectoral spine described and figured in my

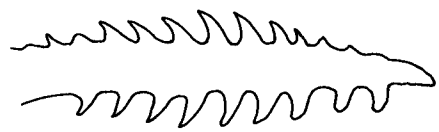

Fig. 3. Right-hand pectoral spine of *Microglanis iheringi*. 10 ×.

previous paper (Mees, 1974: 223 fig. 40 f, 234), when only a single specimen was available to me, was evidently of an unusual type. None of the six fresh specimens has an Y-shaped tooth; indeed, four of the six have all teeth along the anterior edge of the spine pointing inwards and only two have the subdistal tooth pointing outwards, the distal one being too short to show a direction. A similar condition was described by Gomes (1946: 13) from his material, but he had one specimen (out of nine) in which the distal third of the spine bore "antrorse hooks": this specimen would have resembled the one I described in my previous publication. The number of teeth in my six specimens is 9-12 along the anterior border and 7-9 along the posterior border of the spine; there is no evidence of variation with body size in this sample and I cannot explain why the number of teeth is lower than in that of the specimen previously examined (in which it was 16 and 12).

Distribution. — This species is now known from northern Venezuela around the Lago de Valencia (States of Aragua and Carabolo), and in the Orinoco Basin from the drainages of the Río Apure (Mantecal and Calabozo, Venezuela) and the Río Metica (Río Metica and its tributary the Río Guatiquia, Colombia). Indications are that it is widely distributed in the Orinoco Basin. There is no evidence that it occurs in the Amazon Basin, for the specimens from Ecuador listed by Saul (1975) under the name *M. iheringi*, proved to belong to *M. pellopterygius* sp. n.

Discussion. — This material is important for two reasons. The first is that *M. iheringi* was hitherto known from very few specimens, so that all additional material is welcome. The second is that together with the specimens from the Río Metica recently published by Dr. Cala (1977) himself, it constitutes the first record for Colombia with a definite locality. Previously the species was included in the ichthyofauna of Colombia on the basis of a single specimen merely labelled "Colombia" (cf. Gomes, 1946).

As the photographs of *M. iheringi* illustrating Gomes's paper are not particularly good (for example the mainly dark dorsal fin, a character by which the species may be distinguished at a glance from all its congeners except *M. pellopterygius*, is scarcely visible on them), I have considered it useful to provide an illustration of one of the Colombian specimens. It will also serve to show, far better than a description can do, how the new species *M. pellopterygius* differs from it.

There is not much difference between the pectoral spines of *M. iheringi* and *M. pellopterygius* and the evidence that moreover there is a considerable individual variation in the shape of these spines could lead to the question whether in my previous paper I have overestimated the usefulness of their morphology for specific discrimination. Whereas this is partly true: not all

species can be identified by their pectoral spines alone, the character remains a useful aid in the identification of some species. For example, *M. poecilus* and *M. secundus* (I examined a considerable number of both) differ clearly from each other in shape of spines, as well as from *M. iheringi* and *M. pellopterygius*.

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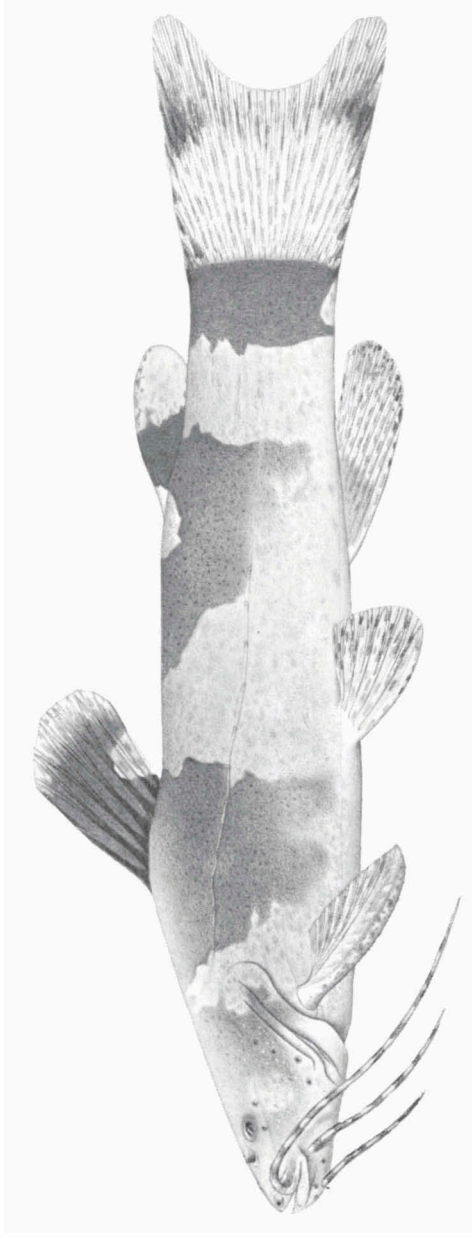
Pseudopimelodus apurensis species nova (holotype, RMNH no. 27644, s. l. ca. 290 mm).
(Photograph: E. L. M. van Esch)

Microglanis pelloptervgius species nova (holotype, from sample ANSP no. 130437, s. l. 70 mm).
(Drawing : A. Bos)



Microglanis iheringi Gomes (from sample RMNH no. 27381, s. l. 47 mm).
(Drawing : A. Bos)