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The South American Mailed Catfishes of the genus *Pseudoloricaria* Bleeker, 1862 (Pisces, Siluriformes, Loricariidae)

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ABSTRACT

Two species of South American Mailed Catfishes of the genus *Pseudoloricaria* Bleeker, 1862 are redescribed and figured from type-specimens and additional material: *Pseudoloricaria laeviuscula* (Valenciennes, 1840), and *Pseudoloricaria punctata* (Regan, 1904). Since the provenance of the holotype of *P. laeviuscula* is unknown, the type-locality of this species is restricted to the mouth of the Rio Tapajós at Santarém. The lectotype is selected from the three syntypes of *P. punctata*, and its type-locality is restricted to the Rio Amazonas at Manaus. *P. laeviuscula* is distributed only in the Rio Amazonas basin in Brazil, whereas *P. punctata* occurs in several river systems, viz. the Rio Amazonas basin in Brazil, Peru, and Ecuador, in the Rio Parnaíba, Est. Piauí, Brazil, in the Essequibo River system in Guyana, and in the Río Meta system in Colombia. *Loricaria griseus* Eigenmann, 1909, *Rhineloricaria petleyi* Fowler, 1940, and *Loricariichthys parnahybae* Fowler, 1941, are synonymized with *Pseudoloricaria punctata* for the first time.

INTRODUCTION

The genus *Pseudoloricaria* was established by Bleeker (1862: 3) for *Loricaria laeviuscula* Valenciennes, 1840. Bleeker distinguished *Pseudoloricaria* from *Loricaria* Linnaeus, 1758 on the structure of the lips, the size of the teeth, the development of dermal denticles, and on the position of dorsal fin against the position of the pelvic fins. *Pseudoloricaria* was accepted as a subgenus of *Loricaria* by Eigenmann & Eigenmann (1889, 1890, 1891), Regan (1904), Eigenmann (1910), and Gosline (1945), and as a genus by Fowler (1954), and by Isbrücker & Nijssen (1974a, b, 1976). Other authors have not considered *Pseudoloricaria* and have placed *P. laeviuscula* and *P. punctata* within the genus *Loricaria*. Bleeker (1863) inadvertently cited the type-species of *Pseudoloricaria* as *Loricariichthys laeviusculus*. Three nominal species we synonymize with *P. punctata* were originally published as *Loricaria griseus* Eigenmann (1909), as *Rhineloricaria petleyi* Fowler (1940), and as *Loricariichthys parnahybae* Fowler (1941).

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The original description of *Pseudoloricaria laeviuscula* was based on the unique holotype with a length of eleven (Paris) inches, without locality data: "Notre individu est long de onze pouces, et vient de l'ancien cabinet: on ignore son origine." (Valenciennes, 1840: 477—478).

Regan (1904: 285) described a second species of *Pseudoloricaria* as *Loricaria (Pseudoloricaria) punctata,* based on three syntypes, two from "Manaos", and one from "Porto do Moz". We re-examined the holotype of *Loricaria laeviuscula,* the three syntypes (one of which is selected as the lectotype) of *Loricaria (Pseudoloricaria) punctata,* the holotype and three paratypes of *Loricaria griseus,* the holotype and single paratype of *Rhineloricaria petleyi,* and the holotype of *Loricariichthys parnahybae.* A total of thirty-six specimens of *Pseudoloricaria laeviuscula* and ninety-eight specimens of *Pseudoloricaria punctata* were examined.

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Pseudoloricaria Bleeker, 1862

Pseudoloricaria Bleeker, 1862: 3 (original diagnosis; type-species, by original designation and monotypy, *Pseudoloricaria laeviuscula* (Valenciennes, in Cuvier & Valenciennes, 1840) = *Loricaria laeviuscula* Valenciennes, 1840).

Pseudoloricaria is a genus of the subfamily Loricariinae Swainson, 1838 forming together with *Loricariichthys* Bleeker, 1862 (syn.: *Parahemiodon* Bleeker, 1862) the *Loricariichthys*-group (cf. Isbrücker & Nijssen, 1974a: 67—68). *Pseudoloricaria* resembles *Loricariichthys* in general appearance:

both genera seem more closely related to each other than to the other genera of the subfamily. The *Loricariichthys*-group may be defined as follows: Loricariinae with I,6,i dorsal fin rays, the last ray split to its base; I,4,i anal fin rays, the last ray split to its base; I,6 pectoral fin rays; I,5 pelvic fin rays; I,10,I caudal fin rays; teeth present in both upper and lower jaws; secondary sexual dimorphism in the lips (lower lip enlarged in nuptial males) and in the shape of the teeth (round tips in the males, more acute tips in the females); rostrum not or hardly produced.

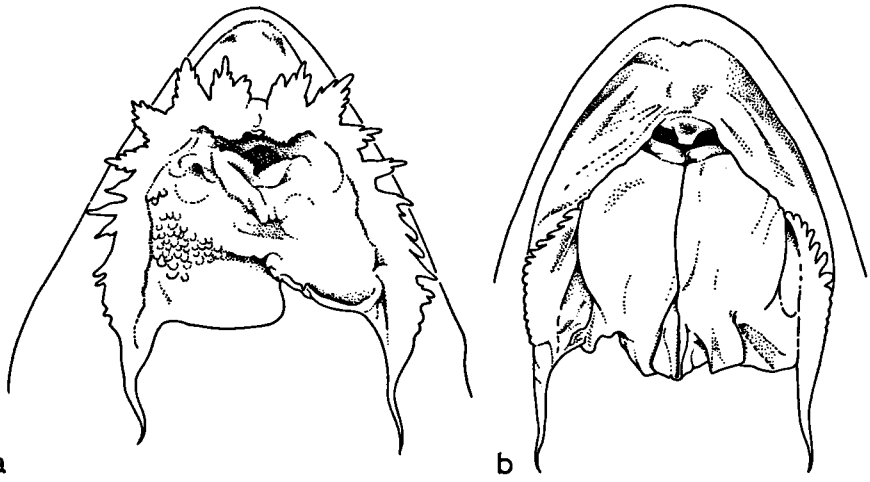

Fig. 1. Differences in lip structure between *Pseudoloricaria* and *Loricariichthys*. (a) *Pseudoloricaria laeviuscula*, ZMA 112.740, sl 209 mm, and (b) *Loricariichthys acutus*, BMNH 1925.10.28:300, sl 223 mm, both females. The upper lip of *Pseudoloricaria* is spread out to show its characteristic flaps.

Diagnosis. — Upper lip (Fig. 1a) narrow, with many minute papillae extending anteriorly into a series of separated, short and broad barbel-like pointed flaps. The largest flaps are situated anterior to each of the upper jaws (cup-like, tooth bearing structures), decreasing in size posteriorly along the outer sides of the rictal barbels. The dorsum of these flaps bulging and smooth; the ventrum flat and covered with minute papillae. The largest flaps may be deeply notched and are often bifid or trifid, and have lumpy edges because of the presence of papillae. Teeth (Fig. 1l) longer and thicker than those in *Loricariichthys*, up to 13 in each of the upper jaws, and up to 15 in each of the lower jaws. Generally more abdominal scutes than in *Loricariichthys*. Posterior orbital notch not as strongly developed as is occasionally found in species of *Loricariichthys*. Pectoral pore absent.

Diagnosis of *Loricariichthys*. — Edges of right and left sides of upper lip separated from each other. A rather smooth-edged flap just anterior to the outer sides of the upper jaws, continues as acute small 'flaps' with principally the same structure as the flaps found in *Pseudoloricaria*. Small, acute barbel-

like papillae (Fig. 1b) are generally present posterior to these flaps. Teeth weakly developed, up to 17 in each of the upper jaws, and up to 34 in each of the lower jaws. Principal abdominal scutes in two to five median series in species like *Loricariichthys stuebelii,* and in a single to double median series in species like *L. nudirostris.* Posterior orbital notch conspicuous, often well developed.

We assign seventeen nominal species to the genus *Loricariichthys: L. maculatus* (Bloch, 1794), type locality: Surinam, district Suriname, ditches in Cultuurtuin (= Botanical Gardens) at Paramaribo West, 05°50′ N, 55°10′ W; *L. brunneus* (Hancock, 1828), originally described from the branches and lakes of the "Orinoko", Venezuela; *L. anus* (Valenciennes, in Cuvier & Valenciennes, 1840), type locality: ". . . sur les bords de la rivière de la Plata près de Buénos-Ayres, . . ."; *L. acutus* (Valenciennes, in Cuvier & Valenciennes, 1840), type locality to be restricted: "On peut croire qu'il venait du Brésil."; *L. nudirostris* (Kner, 1854a) from "Barra do Rio Negro"; *Loricaria amazonica* de Castelnau, 1855, described from ". . . l'Amazone . . .", is a junior synonym of *Loricariichthys maculatus; Loricariichthys castaneus* (de Castelnau, 1855), type locality: ". . . Rio de Janeiro . . . des rivières du voisinage."; *L. typus* (Bleeker, 1862), possibly a junior synonym of *L. maculatus,* or a closely related species; *L. spixii* (Steindachner, 1881), originally described from "Rio Parahyba", but actually based on material from Rio Parahyba, and "Santa Cruz am Rio Quenda, Rio Muriahé, São Matheos, Sambaia, Rio Grande do Sul" (cf. Steindachner, 1882); *L. stuebelii* (Steindachner, 1883), type locality: "Huallaga"; *L. labialis* (Boulenger, 1895), described from "Paraguay"; *L. microdon* (Eigenmann, 1909), type locality: "Rupununi"; *L. ucayalensis* Regan, 1913, from "River Ucayali, Peru"; *L. hauxwelli* Fowler, 1915a, described from "Ambyiacu River, Ecuador" (= Río Ampiyacu, Peru); *L. derbyi* Fowler, 1915b, originally described from "Rio Jaguribé (= Jaguaribe) at Barra Alto, Brazil"; *L. chanjoo* (Fowler, 1940) from "Ucayali River basin, Contamana, Peru"; and finally, *L. cashibo* (Eigenmann & Allen, 1942), described from "Lago Cashiboya", Peru.

In addition to the numerous specimens of the several species of *Loricariichthys* we had the opportunity to examine primary type-material of thirteen of the seventeen nominal species. The original type-material of *Loricariichthys brunneus* and of *L. acutus* no longer exists. We have been unable to trace the place of deposit of the unique holotype of *Loricariichthys cashibo.* Our requests, since 1969, to examine the holotype of *Parahemiodon typus* Bleeker, 1862 from the collections of the Rijksmuseum van Natuurlijke Historie at Leiden, were not granted.

KEY TO THE SPECIES OF *Pseudoloricaria*

Lateral scutes 34 to 36, coalescing scutes 23 to 27, numerous (9 to 15) small scutes bordering pre-anal scute anteriorly (fig. 3) . . . . . *Pseudoloricaria laeviuscula* (Valenciennes, 1840)

Lateral scutes 31 to 32, coalescing scutes 18 to 22, few (3 to 5) small scutes

bordering pre-anal scute anteriorly (fig. 6) . . . . . .
. . . . . *Pseudoloricaria punctata* (Regan, 1904)

Pseudoloricaria laeviuscula (Valenciennes, 1840)

(Figs. 1a, 2—5, 11a—d, 12; Tables I—II)

Loricaria laeviuscula Valenciennes, in Cuvier & Valenciennes, 1840: 476—478 (original description; holotype; no locality), — Kner, 1853: 116 (: 6 of reprint) (lack of ". . . räthselhafte Seitenloch . . ."), — Kner, 1854a: 81—83, pl. 1 figs. 1, 1a, 4a—d, pl. 3 figs. 1—3 (description; Barra do Rio negro, Rio branco [in part], Marabitanos*; in key on: 76; also mentioned on: 66, 68—74, 84, and 85), — Kner, 1858: 349 (in discussion of *Loricaria amazonica* de Castelnau, 1855), — Bleeker, 1858: 331 (listed), — Günther, 1864: 256 (description; northern Brazil, River Capin), — Kner & Steindachner, 1865: 58 (comparison with *Loricaria uracantha* [= *Rineloricaria uracantha*]), — Eigenmann & Eigenmann, 1889: 37 (in part; listed; Rio Madeira, Rio Trombetas, Fonteboa, Lake Jose Assu [= surroundings of Parintins], Gurupa, Silva, Lake Saraca, Xingu; in subgenus *Pseudoloricaria*), — Eigenmann & Eigenmann, 1890: 380—382 (in part; based on material listed in 1889; composite description; in key on: 364, in subgenus *Pseudoloricaria*; also recorded on: 352), — Eigenmann & Eigenmann, 1891: 39 (in part; based on two preceding references; in subgenus *Pseudoloricaria*), — Regan, 1904: 284—285 (description, based on two specimens, including the type of the species; R. Amazon; in distributional table on: 196, and in key on: 272, in subgenus *Pseudoloricaria*), — Eigenmann, 1910: 414 (listed; in subgenus *Pseudoloricaria*), — A. de Miranda Ribeiro, 1911: 122—124 (description, translated from Valenciennes, 1840; fig. 63, reproduced from Kner, 1854, erroneously captioned *Sturisoma barbata*; in key on: 116a, references on: 427—428 (in part) with *Loricaria punctata* Regan, 1904 as junior synonym), — A. de Miranda Ribeiro, 1912: 10 (description; Manáos), — Gosline, 1945: 104 (listed; Amazonas; in subgenus *Pseudoloricaria*), — van der Stigchel, 1946: 174—175 (description; Rio Negro; references partly concern *Pseudoloricaria punctata*), — van der Stigchel, 1947: 174—175 (same as preceding reference).

Pseudoloricaria laeviuscula: Bleeker, 1862: 3 (listed as type-species of new genus), — Fowler, 1954: 111 (listed; references; Amazonas; references partly concern *Pseudoloricaria punctata*), — Isbrücker & Nijssen, 1974b: 198 (secondary sexual dimorphism).

Loricariichthys laeviusculus: Bleeker, 1863: 80 (lapsus; listed as type-species of *Pseudoloricaria* Bleeker).

Loricaria leviuscula: A. de Miranda Ribeiro, 1911: 427 (lapsus; in synonymy).

Sturisoma barbata: A. de Miranda Ribeiro (non Kner, 1854), 1911: 108, fig. 63 (lapsus; reproduction of Kner's illustrations of *Loricaria laeviuscula*).

*Material examined***:*

Locality unknown: MNHN B. 365, holotype, sl 260 mm, South America, provenance and collector unknown.

Brazil, Est. Pará: IRScNB 17871, 17872, 17873 (four), ZMA 112.740, topotypes, sl 106.4 to 214 mm, mouth of Rio Tapajós into Rio Amazonas at Santarém, 02°26′ S, 54°41′ W, coll. G. Marlier & Knowles, I/II—1964; — MCZ 8090, sl 296 mm, Rio Trombetas, coll. Thayer Exp.; — MCZ 8099, sl 240 mm, Rio Xingu (label reads "Xingu Cascade"), coll. Thayer Exp.; — NMW 44948 (three), sl 117 to 214 mm, Rio Xingu, coll. E. Göldi, 1908; —

*) Material from this locality could not be located in NMW.

**) Register numbers without reference to the number of specimens indicate a single specimen.

MCZ 9832, sl 187.5 mm, Rio Amazonas at Gurupá, 01°25′ S, 51°36′ W, coll. Thayer Exp.; MCZ 8089 (juvenile), sl 46.8 mm, Rio Amazonas at Obidos, 01°52′ S, 55°30′ W, coll. Thayer Exp.; — BMNH 1849.11.8.87—88, sl 217 mm (another specimen skeletonized), Rio Capim (Capim, 01°41′ S, 47°44′ W), purch. of Stevens.

Brazil, Est. Amazonas: MCZ 8049, 8050 (juvenile), NMW 44947 (two), sl 46.3 to 268 mm, Rio Amazonas system, surroundings of Parintins, 02°38′ S, 56°45′W (label reads "Lake Jose Assu", which, according to Eigenmann & Eigenmann, 1890: 490, is "Above Villa Bella"), coll. Thayer Exp.; — MCZ 8084, sl 188.5 mm, Rio Amazonas at Silves, 02°48′ S, 58°08′ W, Lago Saracá, coll. Thayer Exp.; — MCZ 8127 (juvenile), sl 128.9 mm, Rio Amazonas at Fonte Boa, 02°33′ S, 65°59′ W, coll. Thayer Exp.; — BMNH 1929.11.18.17, sl 202 mm, Rio Amazonas at Manaus, 03°06′ S, 60°00′ W, coll. C. E. Turner; — NMW 44949, sl 273 mm, Rio Maués (Maués, 03°22′ S, 57°38′ W), Rio Amazonas system, coll. L. Agassiz & F. Steindachner, 1874; — NMW 44938 through 44942 (six), sl 209 to 305 mm, Rio Negro, coll. J. Natterer, 1817-1834; — MCZ 8051, sl 192 mm, Rio Madeira, coll. Thayer Exp.

Brazil, Est. Roraima [= Est. Rio Branco]: NMW 44943 through 44944 (four), sl 119 to 159 mm, Rio Branco, coll. J. Natterer, 1817-1834.

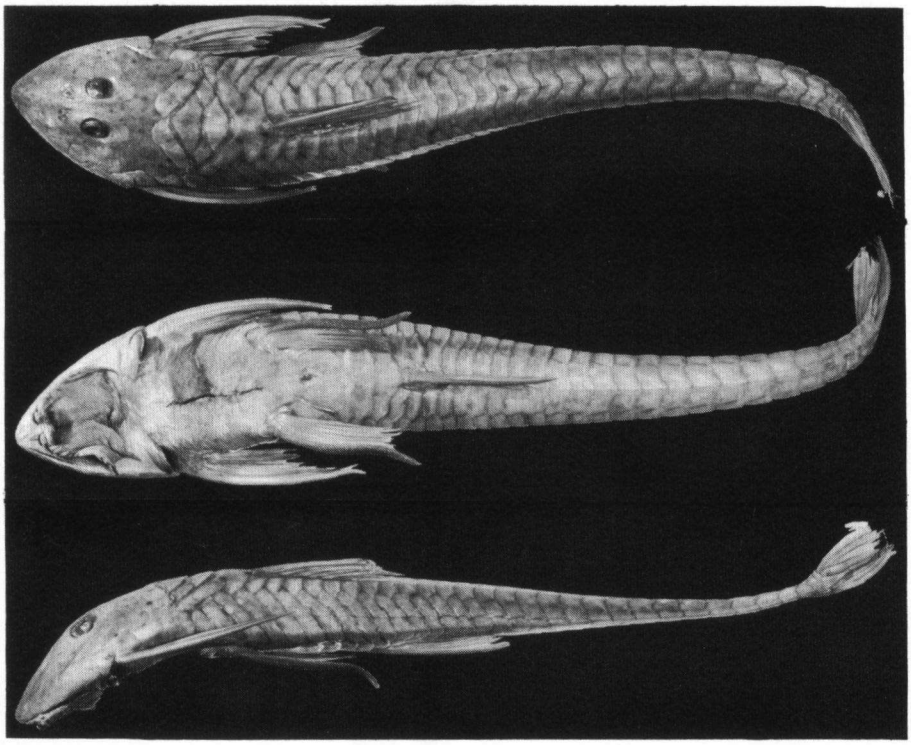

Fig. 2. *Pseudoloricaria laeviuscula*, holotype in dorsal, ventral, and lateral view.

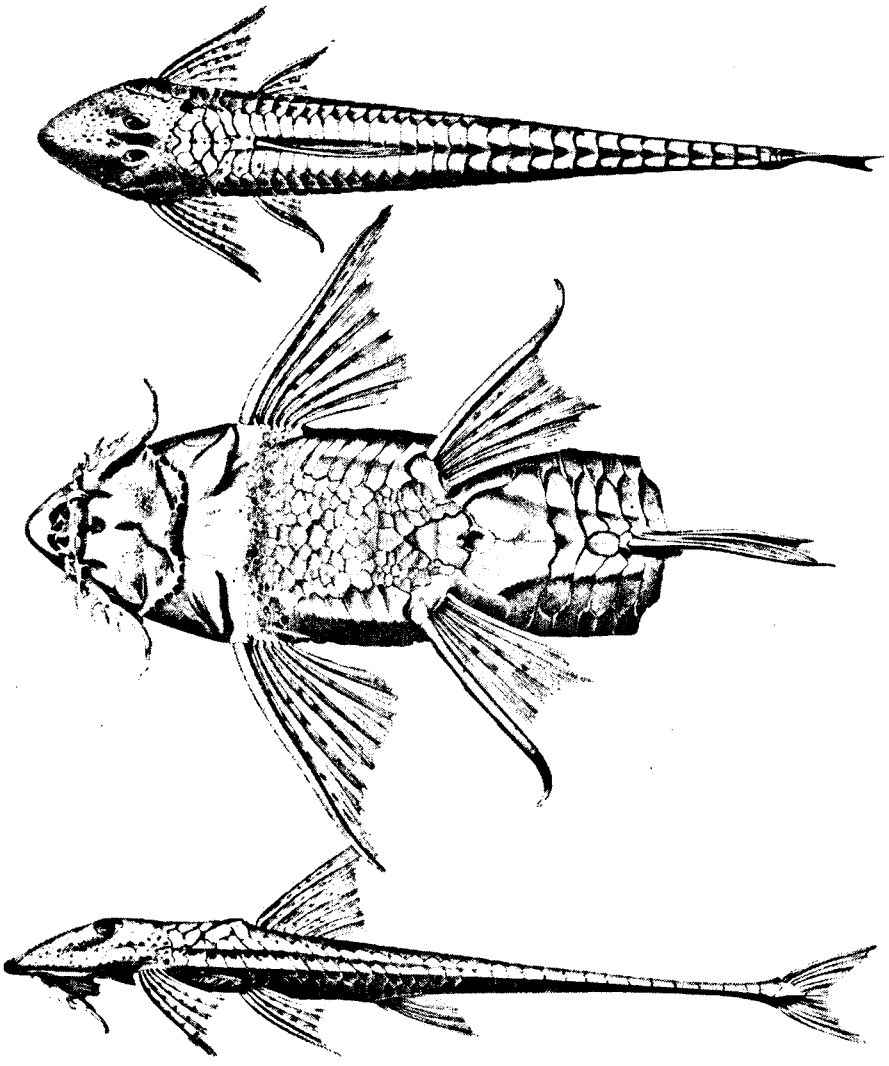

Fig. 3. *Pseudoloricaria laeviuscula*, reproduction of Kner's 1854a plate 3 illustration of a specimen from Rio Negro or Rio Branco.

Description:

Morphometric and meristic data are represented in tables I and II. Definitions of the characters given, can be found in Isbrücker & Nijssen, 1974b: 199—200, and 1976: 110, with the exception of 'length 4th pelvic ray', which is measured from base to tip.

Replacement teeth were found in eight specimens. In one specimen (BMNH 1929.11.18:17) seven replacement teeth were found in the right upper jaw, next to 10 functional teeth, whereas in the left upper jaw of this specimen there are two replacement teeth next to 10 functional teeth. Males

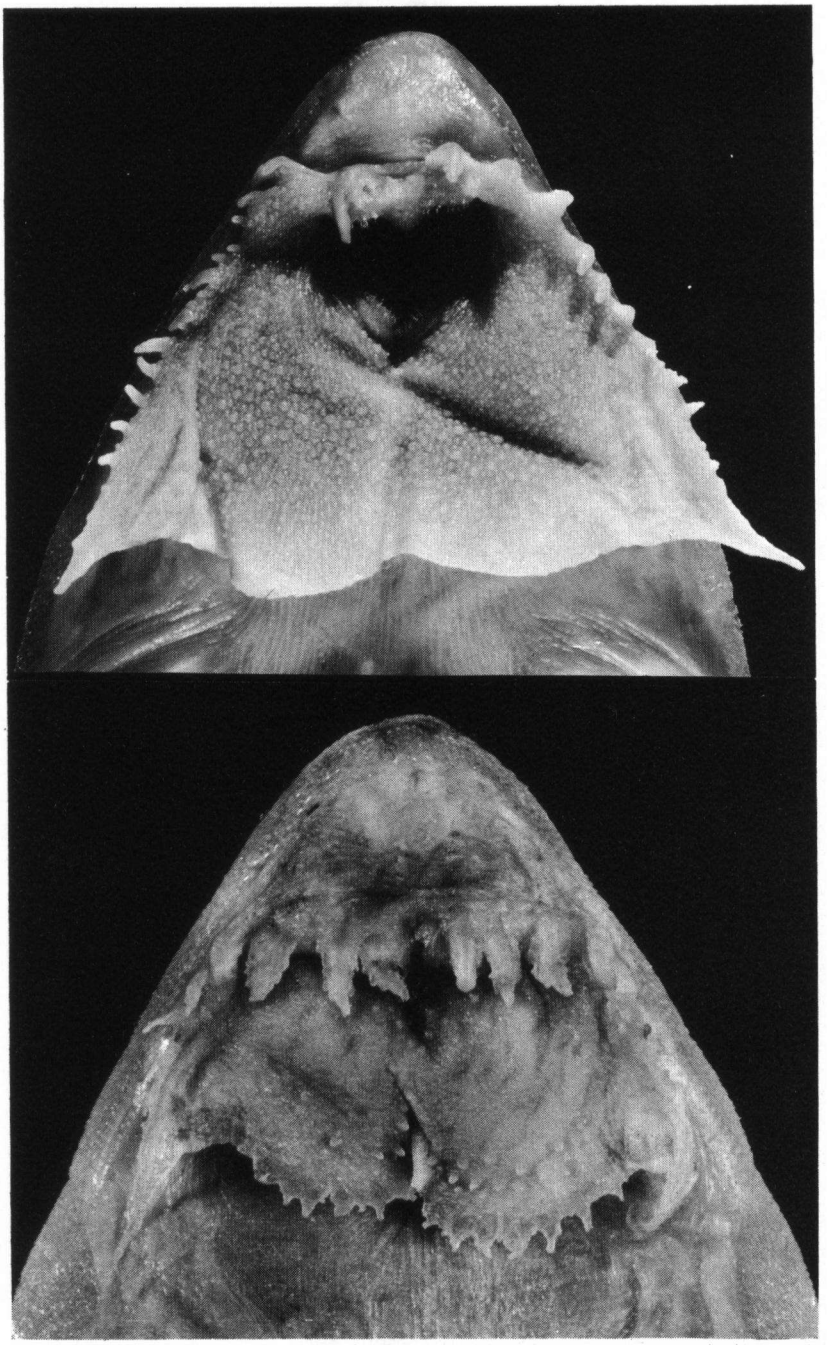

Fig. 4. *Pseudoloricaria laeviuscula* (top, topotype IRScNB 17873, sl 180 mm), and *Pseudoloricaria punctata* (bottom, specimen in CAS 27875, sl 155 mm), showing the lip of the female in detail.

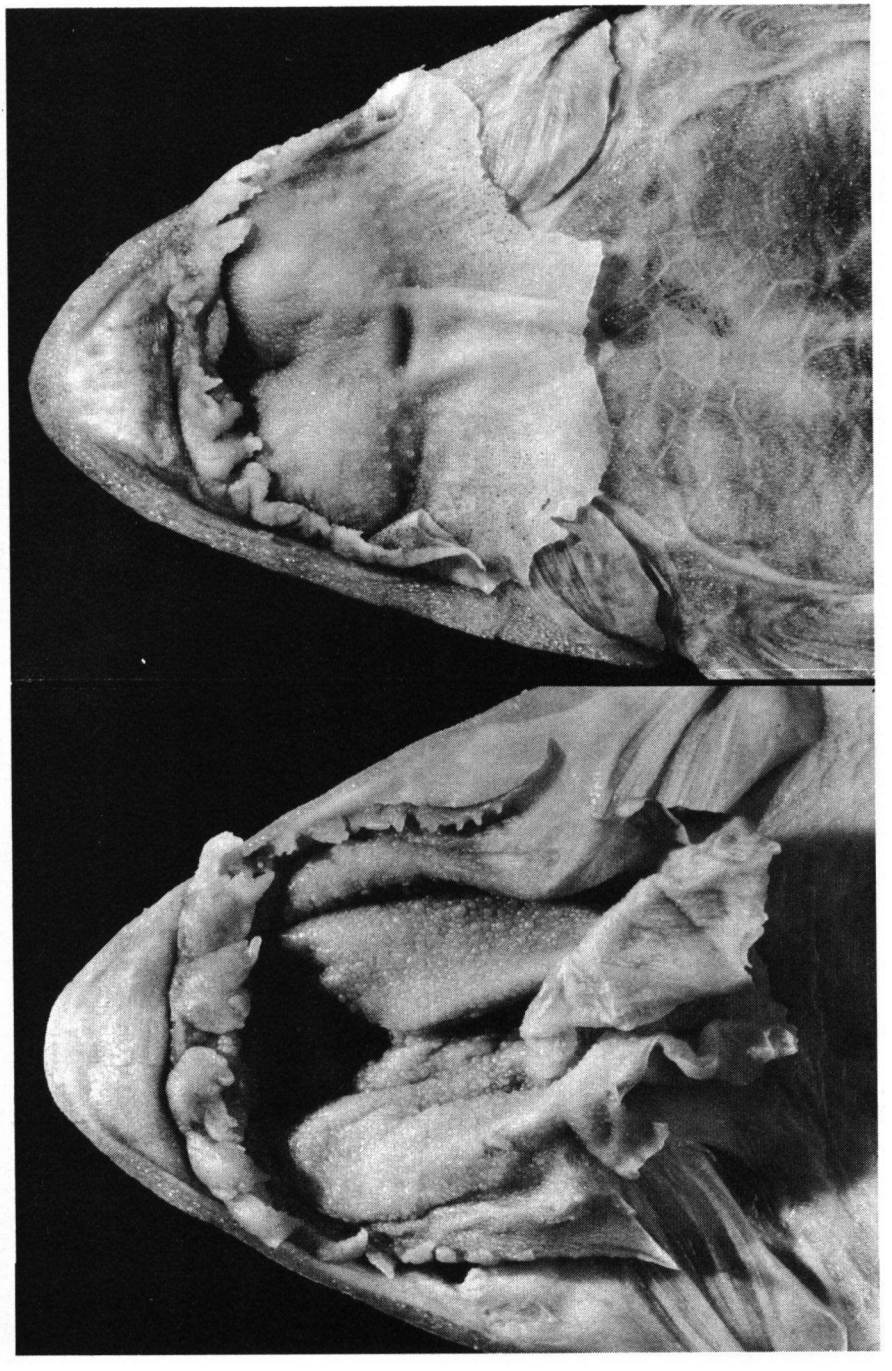

Fig. 5. *Pseudoloricaria laeviuscula* (bottom, topotype IRScNB 17872, sl 198 mm) and *Pseudoloricaria punctata* (top, specimen in CAS 27875, sl 149 mm), showing the lip of the male in detail.

have teeth with rounded tips and the teeth of females have more acute tips (Fig. 11a—d). Except for a specimen in MCZ 8051, which has C I,8,I, all specimens show the normal count for C: I,10,I.

Snout with a narrow naked horizontal area, extending from the tip through about a vertical from the anterior rim of the eye.

Colour in alcohol (Figs. 2—5): Ground colour of ventral side pale tan and of dorsal side median tan. Ventral side unpigmented. Dorsum of head and body with many small brown dots, more numerous on head than on body. In the centre of the lateral body scutes some larger dots may form an irregular line at the level of the lateral pores. Parallel to the first line a second dotted line is often present between lateral and dorsal body scutes. Dorsal, pectoral, and caudal fins are spotted with brown pigment, often forming irregular vertical bars on the caudal fin. The lower lobe of the caudal fin is more dusky than the upper lobe. Pelvic fins scarcely pigmented, anal fin unpigmented.

Juveniles (MCZ 8050 and 8089, sl 46.3—46.8 mm) may have a conspicuous dark brown spot on the caudal fin base and on the surrounding triangular scutes. They also have the posterior part of the caudal fin membrane evenly pigmented with brown.

A comparison of some of the characters of *Pseudoloricaria laeviuscula* and *P. punctata* is given in a separate chapter.

Pseudoloricaria punctata (Regan, 1904)
(Figs. 4—10, 11e—h, 12; Tables I—II)

Loricaria laeviuscula; Kner (non Valenciennes, 1840), 1854a: 81—83 (in part; Rio branco), — Vaillant, 1880: 156 (listed; Caldéron [= Caldeirão], Haute-Amazone), — Eigenmann & Eigenmann, 1889: 37 (in part; listed; Coary, Jutahy, Porto do Moz, Manaos, Tonantins, Hyavary; in subgenus *Pseudoloricaria*), — Eigenmann & Eigenmann, 1890: 380—382 (in part; based on material listed in 1889; composite description; in key on: 364, in subgenus *Pseudoloricaria*), — Eigenmann & Eigenmann, 1891: 39 (in part; based on two preceding references; in subgenus *Pseudoloricaria*), — A. de Miranda Ribeiro, 1911: 427—428 (part of references), — van der Stigchel, 1946: 174 (part of references), — van der Stigchel, 1947: 174 (part of references).

Pseudoloricaria laeviuscula; Fowler (non Valenciennes, 1840), 1954: 111 (listed; part of references).

Loricaria punctata Regan, 1904: 285, pl. 17 fig. 1 (original description; three syntypes; syntype localities: "Manaos, Rio Negro, Middle Amazon", and "Porto do Moz, lower Amazon"; in distributional table on: 196, and in key on: 272, in subgenus *Pseudoloricaria*), — Eigenmann, 1910: 414 (listed; Porto do Moz to Barra do Rio Negro; in subgenus *Pseudoloricaria*), — Eigenmann & Allen, 1942: 206 (short description; Amazons, Peru: Rio Paranapura, Yurimaguas, Rio Huallaga, Yurimaguas, Iquitos, Rio Itaya, Iquitos; also mentioned on: 44, 49, 55), — Fowler, 1945: 107 (listed; Perú), — Gosline, 1945: 104 (listed; in subgenus *Pseudoloricaria*), — Tovar Serpa, 1967: 222 (two times listed, after Fowler, 1945).

L[oricaria] punctatus; Eigenmann, 1909: 8 (name only, in original description of *Loricaria griseus*).

L[oricariichthys] punctatus; Eigenmann, 1912: 246 (name only, in description of *Loricariichthys griseus*).

Pseudoloricaria punctata; Fowler, 1954: 111—112, fig. 715 (references; figures from Green, in Regan, 1904), — Isbrücker & Nijssen, 1974b: 198 (secondary sexual dimorphism).

Loricaria griseus Eigenmann, 1909: 8—9 (original description; holotype and 11 paratypes from Conawaruk, 22 paratypes from Bartica Sand Bank; type locality: Guyana, "Conawaruk"), — Böhlke, 1953: 46 (paratype from Bartica listed).

Loricaria grisea; Eigenmann, 1910: 414 (listed; Essequibo River; in subgenus *Loricariichthys*), — Fowler, 1941: 161—163 (comparison with *Loricariichthys parnahybae*), — Gosline, 1945: 105 (listed; in subgenus *Loricariichthys*), — van der Stigchel, 1946: 178—179 (description; "cotype" from "Bartica, Essequibo, British Guiana"; also recorded on: 5), — van der Stigchel, 1947: 178—179 (same as preceding reference).

Loricariichthys griseus; Eigenmann, 1912: 246—247, pl. 30 fig. 2, pl. 32 fig. 2 (description, based on type specimens; in key on: 244, in subgenus *Rineloricaria;* also mentioned on: 67, 77, 89, and 114), — Fowler, 1914: 274 (listed; Rupununi).

Rhineloricaria petleyi Fowler, 1940: 243—244, figs. 36—38 (original description; holotype, one paratype; type locality: "Ucayali River basin, Contamana, Peru"), — Fowler, 1942: 85 (listed; Perú, Contamana), — Fowler, 1945: 102 (listed; Perú, Contamana), — Tovar Serpa, 1967: 221 (listed, after Fowler, 1945).

Loricaria petleyi; Eigenmann & Allen, 1942: 208 (listed; reference; note; also listed on: 47), — Gosline, 1945: 104 (listed; in subgenus *Rineloricaria*).

Rineloricaria petleyi; Fowler, 1954: 120, fig. 724 (references; figures after Fowler, 1940).

Loricariichthys parnahybae Fowler, 1941: 161—163, figs. 69—71 (original description: holotype; type locality: "Rio Parnahyba, Therezina, Piauhy", eastern Brazil), — Fowler, 1954: 106, fig. 710 (references; figures after Fowler, 1941).

Loricaria parnahybae Fowler; Gosline (non Steindachner, 1907), 1945: 106 (listed; footnote on homonymy of Fowler's specific name after transfer into genus *Loricaria;* in subgenus *Loricariichthys*).

Loricaria filamentosa; Saul (non Steindachner, 1878), 1975: 119 (Ecuador, Río Conejo; ecology also in table 2: 129).

Material examined:

Brazil, Est. Amazonas: BMNH 1893.4.24:18 (lectotype, by present designation), sl 168 mm, and BMNH 1975.6.19:5 (paralectotype), sl 135 mm, Rio Amazonas at Manaus, 03°06′ S, 60°00′ W, coll. J. C. Antony; — MCZ 8053, sl 146.8 mm, topotype, Rio Amazonas at Manaus, coll. Thayer Exp.; — MNHN A.1983, sl 163 mm, Rio Amazonas at Caldeirão, 03°15′ S, 60°15′ W, coll. Jobert, 1879; — MCZ 8057 (male), sl 147.6 mm, Rio Solimões (Rio Amazonas) at Tonantins, 02°46′ S, 67°45′ W, coll. L. Agassiz, Thayer Exp.; — MCZ 8061, sl 131 mm, Brazil, Est. Amazonas/ Peru, Est. Loreto, Rio Javari/Rio Yavari, Rio Amazonas system, coll. Thayer Exp.; — MCZ 8027, sl 128.2 mm, Rio Amazonas at Coari, 04°08′ S, 63°07′ W, mouth of Rio Coari, coll. Thayer Exp.; — MCZ 8081, damaged, length about 137 mm, Rio Jutaí, Rio Solimões (Rio Amazonas), coll. Thayer Exp.; — MCZ 8094 (juvenile), sl 50 mm, Rio Içá, Rio Solimões (Rio Amazonas) system, coll. Thayer Exp.

Brazil, Est. Roraima: NMW 44945, sl 85.3 mm, Rio Branco, coll. J. Natterer, 1817-1834.

Brazil, Est. Pará: BMNH 1889.11.14:65 (paralectotype), sl 149 mm, Rio Xingu at Pôrto de Mós, 01°45′ S, 52°10′ W, Rio Amazonas system, coll. Thayer Exp.; — MCZ 8098, NMW 44946 (two, onle), MNHN 89—298, USNM 41527, sl 108.4 to 147 mm, Rio Xingu at Pôrto de Mós, coll. Thayer Exp.; — NMW 45104 (two), sl 142 to 160 mm, Rio Tocantins at Cametá, 02°14′ S, 49°30′ W, gift from Museum Goeldi at Belém, 1911.

Brazil, Est. Piauí: ANSP 69451 (holotype of *Loricariichthys parnahybae* Fowler), sl 138 mm, Rio Parnaíba (a river between Est. Maranhão and Est. Piauí) at Teresina, 05°09′ S, 42°46′ W, coll. R. von Ihering, 1936.
Peru, Est. Loreto: ANSP 68661 (holotype of *Rhineloricaria petleyi* Fowler), sl 149.5 mm, and ANSP 68662 (paratype of *Rhineloricaria petleyi*), sl 131.5 mm, right bank of Río Ucayali at Contamana, 07°19′ S, 75°04′ W, Rio Amazonas system, coll. W. C. Morrow and party, VII/VIII-1937; — CAS 27875, ex IU 15394 (twenty-seven), ZMA 112.785, ex CAS 27875, sl 35.5 to 160 mm, Río Paranapura at Yurimaguas, 05°54′ S, 76°07′ W, Rio Amazonas system, coll. W. R. Allen, XI-1920; — CAS 27876, ex IU 15395 (eight), USNM 86847, ex IU 15395 (two), sl 38.8 to 156 mm, Río Huallaga at Yurimaguas, Rio Amazonas system, coll. W. R. Allen, XI-1920, — CAS 27877, ex IU 15396, sl 130.4 mm, Iquitos, 03°51′ S, 73°13′ W, Rio Amazonas system, coll. W. R. Allen, 1920; — CAS 27878, ex IU 15399, sl 128 mm, Río Itaya near Iquitos, Rio Amazonas system, coll. W. R. Allen, IX-1920; — CAS 27879, ex IU 15981 (six), sl 104 to 146 mm, Iquitos, coll. Morris, 1922; — USNM 124929, sl 87.4 mm, Shansho Caño, coll. W. G. Scherer, 4-XII-1935; - USNM 124932, sl 177.5 mm, Shansho Caño, coll. W. G. Scherer, IX-1934.
Guyana: FMNH 53077, ex CM 1504 (holotype of *Loricaria griseus* Eigenmann, male), sl 105 mm, Konawaruk Pool, Essequibo River system, coll. C. H. Eigenmann and party, 8-XI-1908; — BMNH 1912.1.31:1—2 (two paratypes of *Loricaria griseus*), ZMA 102.160 (paratype of *Loricaria griseus*), sl 76.1 to 93.5 mm, Bartica sand-bank, coll. S. E. Shideler, 19-X-1908; — BMNH 1934.9.12:424—425 (two), sl 97.8 to 119.5 mm, Mazaruni River, Essequibo River system, coll. Carter; — BMNH 1976.6.18:164—165 (two), ZMA 114.704, sl 119.2 to 135.4 mm, Anarika near Rockstone, Essequibo River, coll. G. J. Howes, 31-I-1976.
Colombia, Est. Meta: FMNH unreg. (three), ZMA 113.743, sl 29.5 to 101.4 mm, Río Meta-Orinoco drainage, mouth of caño into Río Manacacías at Puerto Gaitan, coll. Thomerson, Hicks, Baskin, Rofen & Blanco, 2-IV-1974.
Ecuador, Est. Napo: ANSP 130506 (sixteen), ZMA 114.705, sl 31.9 to 105.4 mm, Río Conejo, a tributary of Río San Miguel, vicinity of Santa Cecilia, 00°06′ N, 76°51′ W, upper Río Amazonas basin, coll. W. G. Saul, 1967/1968.

Description:

Morphometric and meristic data are represented in tables I and II.

Replacement teeth were found in six specimens. In one specimen (ANSP 68661, holotype of *Rhineloricaria petleyi*) 11 replacement teeth were found in the right upper jaw, next to 13 functional teeth, whereas this specimen has nine replacement teeth next to 11 functional teeth in the left upper jaw.

Secondary sexual dimorphism in tips of the teeth same as in *Pseudoloricaria laeviuscula* (Figs. 11e—h).

A specimen in CAS 27875 has an aberrant number of caudal fin rays: I,9,I; another specimen in the same sample has C I,7,I.

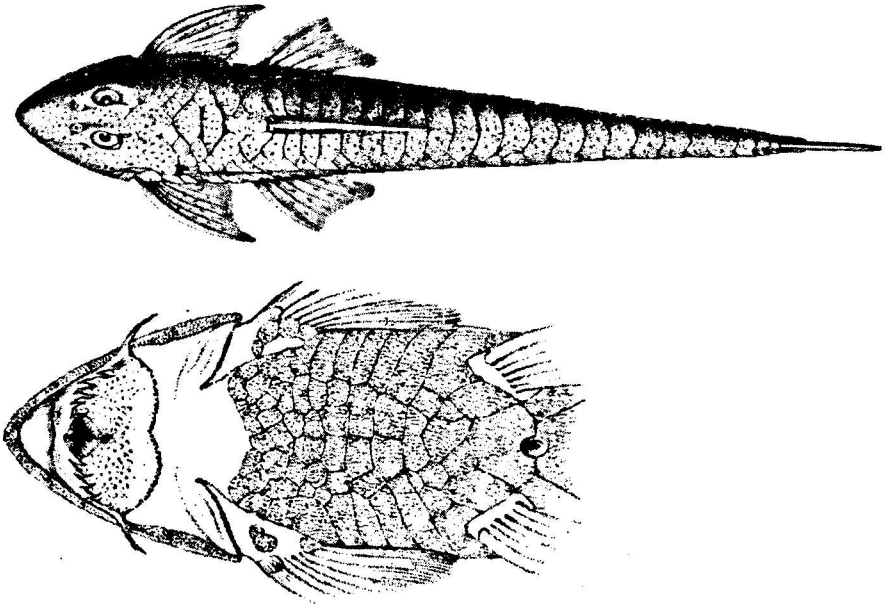

Fig. 6. *Pseudoloricaria punctata*, reproduction of Regan's 1904 plate 17 (fig. 1) illustration of one of the syntypes, presumably the lectotype.

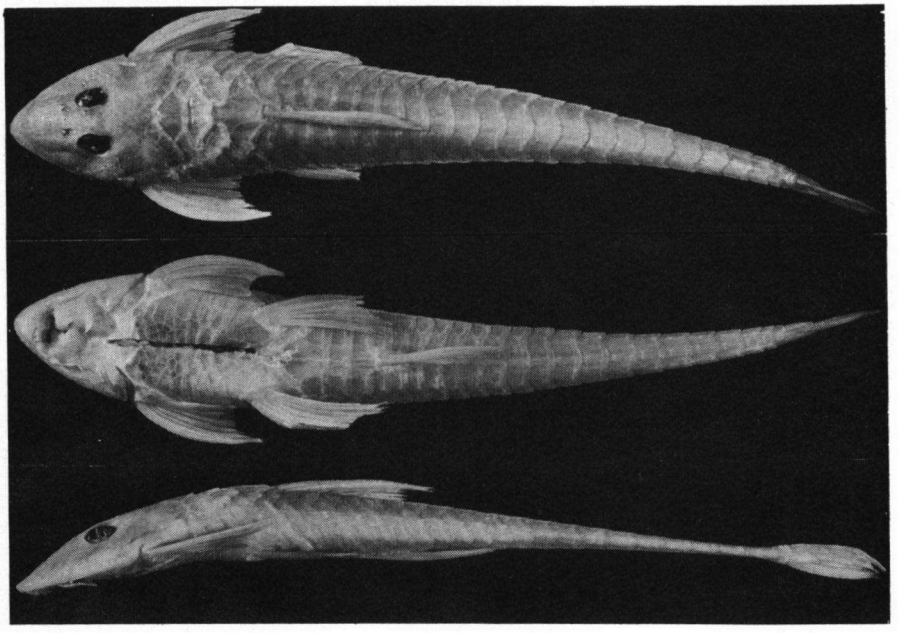

Fig. 7. *Pseudoloricaria punctata*, lectotype in dorsal, ventral, and lateral view.

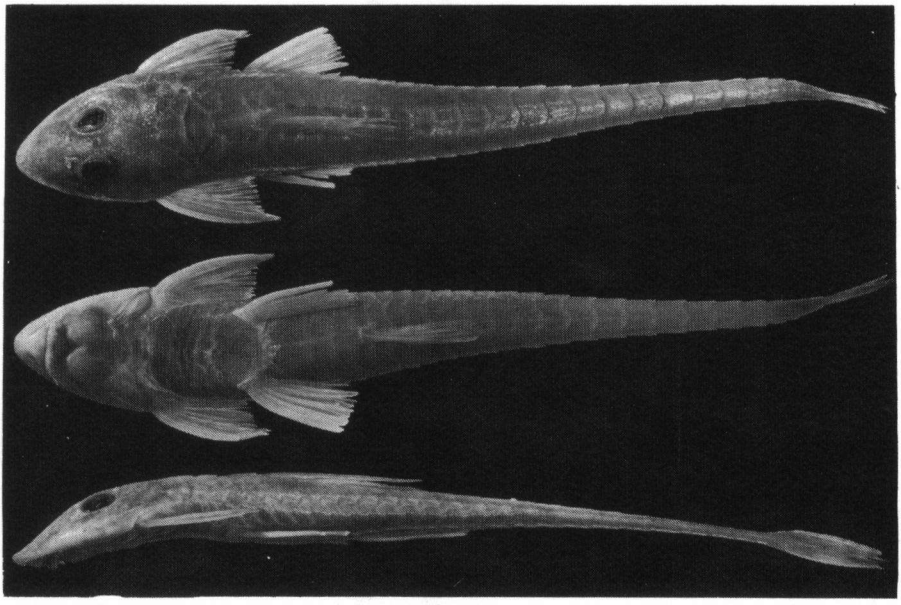

Fig. 8. *Pseudoloricaria punctata,* holotype of *Loricaria griseus* in dorsal, ventral, and lateral view.

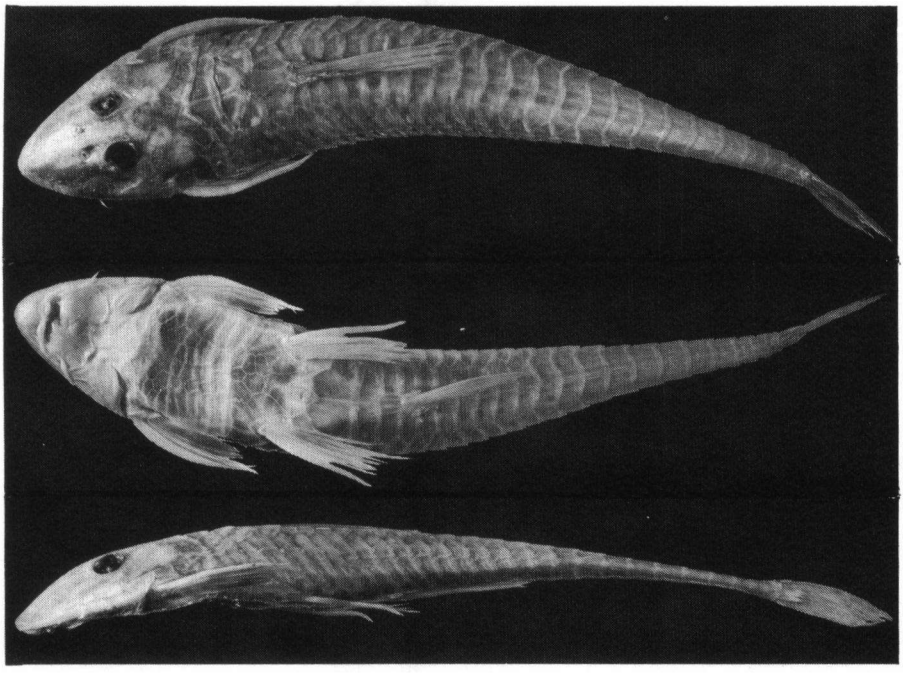

Fig. 9. *Pseudoloricaria punctata,* holotype of *Rhineloricaria petleyi* in dorsal, ventral, and lateral view.

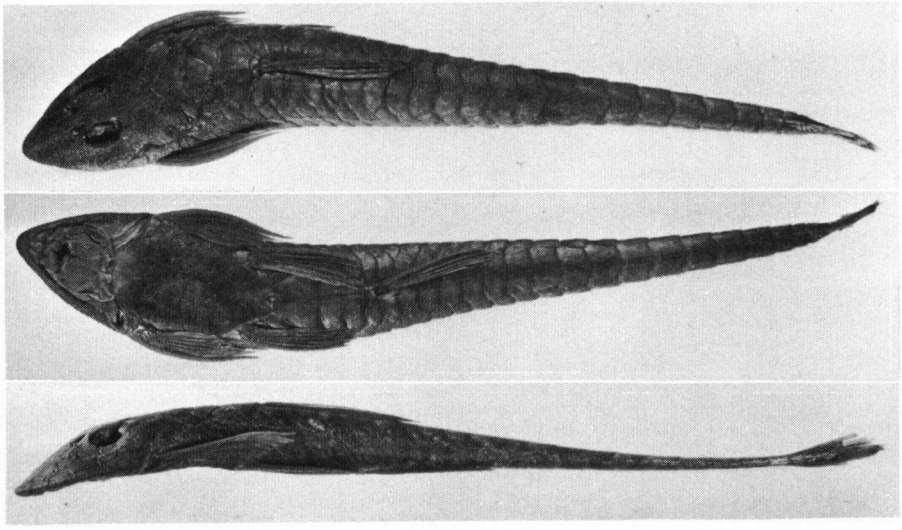

Fig. 10. *Pseudoloricaria punctata*, holotype of *Loricariichthys parnahybae* in dorsal, ventral, and lateral view.

Snout with a narrow naked horizontal area, extending from the tip to a vertical halfway from the eye.

Colour in alcohol (Figs. 6 to 10): General colour pattern much like that of *Pseudoloricaria laeviuscula*. Juveniles (up to about 40 mm sl: CAS 27875, 27876) often showing up to four narrow transverse brown bands on dorsum of body.

The specimens from Ecuador (ANSP 130506 and ZMA 114.705) are darker than all other specimens, the dorsum of body and head being medium tan with up to six brown transverse bands, the head of some specimens with short vermiculate lines (especially about the snout margin), and with the spots between coalescing scutes markedly larger and darker brown than in the remaining specimens. Caudal fin with irregular spots, sometimes forming up to three faint vertical bars, distal third of lower caudal fin lobe with greyish brown pigment forming an indistinct blotch.

Synonymy:

The holotype of *Loricaria griseus* is a nuptial male with a standard length of only 105 mm; the smallest male from Rio Amazonas has a standard length of 131.5 mm (ANSP 68662, paratype of *Rhineloricaria petleyi*). The largest known specimen of *Pseudoloricaria punctata* is 177.5 mm sl (USNM 124932).

The holotype of *Loricaria griseus* has a head depth of 3.0 in hl; the three specimens from Anarika near Rockstone, Guyana, have a head depth of 3.0 to 3.2 in hl. Except for the holotype of *Loricariichthys parnahybae*, which also has a head depth of 3.0 in hl, all other specimens of *Pseudoloricaria punctata* have a head depth of 2.5 to 2.9; included is a specimen from Maza-

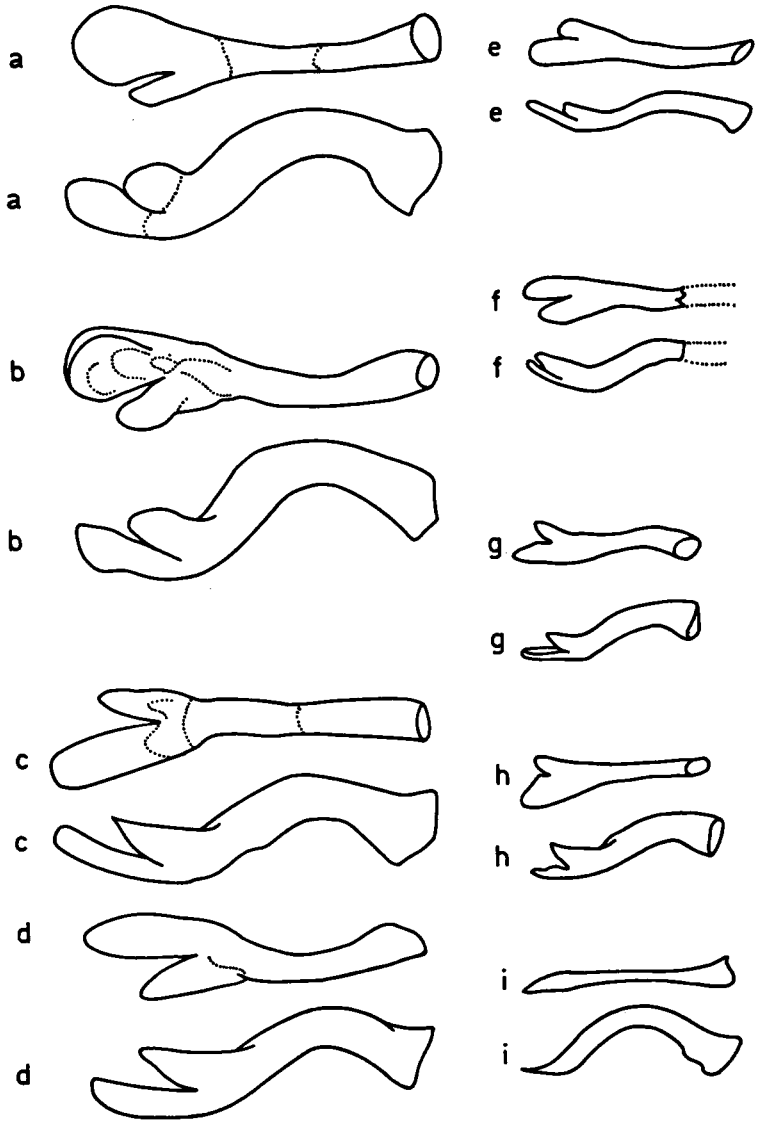

Fig. 11. Profiles of teeth of

(a) *Pseudoloricaria laeviuscula*, ♂, MCZ 8090, sl 296 mm, left upper jaw, — (b) same as a, left lower jaw;

(c) *Pseudoloricaria laeviuscula*, ♀, MCZ 8099, sl 240 mm, left upper jaw, — (d) same as c, left lower jaw;

(e) *Pseudoloricaria punctata*, ♂ BMNH 1976.6.18:164—165, sl 119.7 mm, left upper jaw, — (f) same as e, left lower jaw;

(g) *Pseudoloricaria punctata*, ♀, MCZ 8053, sl 146.8 mm, left upper jaw, — (h) same as g, left lower jaw;

(i) *Loricariichthys spixii*, ♀, NMW 45113, syntype, sl 285 mm, left upper jaw.

Fig. 12. Distribution of the species of *Pseudoloricaria*. L indicates the type-locality of *Pseudoloricaria laeviuscula*, and P the type-locality of *Pseudoloricaria punctata*..

runi River (BMNH 1934.9.12:424, sl 119.5 mm), which has a head depth of 2.8 in hl.

The specimens from the Essequibo River system often have a slightly greenish yellow ground colour (probably due to the method of preservation). Direct comparison of these specimens with specimens from the Rio Ama-

zonas basin does not yield any character by which to separate them on specific level. With the material at hand we do not feel justified in recognising subspecies of *Pseudoloricaria punctata.*

The holotype and paratype of *Rhineloricaria petleyi* do not differ from other specimens from the Rio Amazonas basin assigned to *Pseudoloricaria punctata.*

The holotype of *Loricariichthys parnahybae* is in a poor state of preservation, the lips especially are soft and shrunken. Like the holotype of *Loricaria griseus,* it has a head depth of 3.0 in hl. It is the sole representative of the genus *Pseudoloricaria* recorded from Rio Parnaíba.

Discussion:

Shaw (1804: 35—36) placed *Cataphractus punctatus* Bloch, 1794 in the genus *Loricaria* Linnaeus, 1758, thus creating a new binomen, as: "*Loricaria*

Table I. Morphometric and meristic data of (a) *Pseudoloricaria laeviuscula,* holotype, (b) *Pseudoloricaria punctata,* lectotype, and of the holotypes of the junior synonyms: (c) *Loricaria griseus,* (d) *Rhineloricaria petleyi,* and (e) *Loricariichthys parnahybae.*

	measurements in mm					ratios of sl					ratios of hl				
specimen	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e
sex	♀	♀	♂	♀	♂	♀	♀	♂	♀	♂	♀	♀	♂	♀	♂
morphometric data:															
standard length	260.0	168.0	105.0	149.5	138.0	260.0	168.0	105.0	149.5	138.0	260.0	168.0	105.0	149.5	138.0
head length	56.7	35.6	23.0	33.4	27.7	4.6	4.7	4.6	4.5	5.0					
predorsal length	82.1	56.4	34.0	51.0	43.5	3.2	3.0	3.1	2.9	3.2					
postdorsal length	159.9	97.2	62.4	85.5	82.4	1.6	1.7	1.7	1.7	1.7					
postanal length	134.5	82.0	54.0	69.0	71.1	1.9	2.0	1.9	2.2	1.9					
dorsal spine length	> 38.3	34.7	22.0	> 28.6	25.4	< 6.8	4.8	4.8	< 5.2	5.4					
length 1st dorsal ray	> 35.7	33.5	20.8	—	25.9	< 7.7	5.0	5.0	—	5.3					
anal spine length	45.1	25.9	15.4	25.3	20.1	5.8	6.5	6.8	5.9	6.9					
pectoral spine length	52.9	28.7	16.8	26.5	23.6	4.9	5.9	6.3	5.6	5.8					
pelvic spine length	46.4	22.4	14.2	22.8	18.5	5.6	7.5	7.4	6.6	7.5					
length 4th pelvic ray	33.6	27.6	13.6	27.4	18.6	7.7	6.1	7.7	5.5	7.4					
snout length	33.5	17.9	11.9	17.9	14.3						1.7	2.0	1.9	1.9	1.9
lower lip	26.5	8.4	7.6	5.7	8.1						2.1	4.2	3.0	5.9	3.4
thoracic length	32.0	26.2	13.4	24.6	17.7						1.8	1.4	1.7	1.4	1.6
abdominal length	41.0	26.5	16.3	23.2	21.7						1.4	1.3	1.4	1.4	1.3
maximum orbital diameter	12.0	8.1	5.9	7.6	7.1						4.7	4.4	3.9	4.4	3.9
interorbital width	5.4	5.4	3.0	4.8	3.9						10.5	6.6	7.7	7.0	7.1
cleithral width	42.8	27.8	16.4	26.4	20.6						1.3	1.3	1.4	1.3	1.3
supracleithral width	31.1	21.2	12.1	20.2	15.2						1.8	1.7	1.9	1.7	1.8
head depth	22.0	13.3	7.7	13.0	9.3						2.6	2.7	3.0	2.6	3.0
body depth at dorsal fin	-	17.2	8.8	15.2	11.3						-	2.1	2.6	2.2	2.5
body width at dorsal fin	-	24.0	12.6	23.0	17.6						-	1.5	1.8	1.5	1.6
body width at anal fin	-	20.1	11.0	19.3	14.7						-	1.8	2.1	1.7	1.9
depth caudal peduncle	4.3	2.6	1.4	2.6	1.9						13.2	13.7	16.4	12.8	14.5
width caudal peduncle	8.7	4.2	2.9	4.4	3.4						6.5	8.5	7.9	7.6	8.1
length rictal barbel	27.3.	9.8	5.6	11.1	9.2						2.1	3.6	4.1	3.0	3.0
meristic data:															
lateral scutes	35/35	31/31	31/31	31/31	31/31										
coalescing scutes	23/23	19/20	19/19	20/19	20/20										
thoracic scutes	6/9	6/6	5/5	6/6	5/5										
teeth upper jaws	9/11	12/8	7/9	11/13	10/5										
teeth lower jaws	11/10	15/13	10/10	11/13	2/12										

Punctata". Bleeker (1862: 4) correctly transferred *Cataphractus punctatus* to the genus *Corydoras* Lacépède, 1803 (family Callichthyidae) for the first time; *Corydoras punctatus* (Bloch, 1794) is presently considered a well-established binomen, and "*Loricaria punctata*" sensu Shaw is not a homonym of *Loricaria* (*Pseudoloricaria*) *punctata* Regan, 1904.

Kner (1854b: 281) published a manuscript name "*Loricaria punctata* Natterer" in the synonymy of "*Ancistrus duodecimalis*?" (Valenciennes). Since this name fails to satisfy the provisions in Article 11(d) of the International Code of Zoological Nomenclature (1964), therefore *Loricaria* (*Pseudoloricaria*) *punctata* Regan, 1904 is not subject to the Law of Homonymy.

Table II. Some morphometric and meristic data of 20 specimens of *Pseudoloricaria laeviuscula* and of 24 specimens of *Pseudoloricaria punctata*, arranged according to some localities. N = number of specimens; coal. = number of coalescing scutes; hl = head length; iow = interorbital width; lat. = number of lateral scutes; mod = maximum orbital diameter; $p_1$sl = pectoral fin spine length; $p_2$sl = pelvic fin spine length; $p_2$4th = length of fourth pelvic fin ray; sl = standard length; sn = snout length; thl = thoracic length.
P. laeviuscula — Santarém: IRScNB 17871/17873, ZMA 112.740, — Rio Xingu: MCZ 8099, NMW 44948, — Parintins: MCZ 8049, NMW 44947, — Rio Negro: NMW 44939/44942, — Rio Branco: NMW 44943/44944.
P. punctata — Rio Xingu: BMNH 1889.11.14:65, MNHN 89—298, — Río Paranapura: CAS 27875, — Río Huallaga: CAS 27876, — Iquitos: CAS 27877/27879.

	N	sl in mm	sl/hl	sl/$p_1$sl	sl/$p_2$sl	sl/$p_2$4th	hl/sn	hl/thl	hl/mod	hl/iow	lat.	coal.
laeviuscula												
Santarém	6	170.0-214.0	4.7-4.9	5.2-5.9	6.1-6.7	8.1-9.0	1.7-1.8	1.7-1.8	4.5-4.7	8.5- 9.6	34-35	25-27
Rio Xingu	3	167.0-240.0	4.5-5.0	5.0-5.2	6.2-6.8	7.6-9.1	1.7-1.9	1.4-1.7	4.6-4.7	8.3- 9.7	35-36	25-26
Parintins	3	193.0-268.0	4.6-5.0	4.4-4.7	5.7-6.0	7.6-9.1	1.7-1.8	1.5-1.6	4.5-4.9	8.8- 9.3	36-37	25-26
Rio Negro	5	209.0-305.0	4.5-4.8	4.9-5.4	5.3-5.7	7.0-8.0	1.7-1.8	1.4-1.6	4.4-4.7	9.1-10.8	35-37	23-25
Rio Branco	3	149.5-159.0	4.7-5.1	4.9-5.4	6.8-7.6	7.2-8.7	1.8	1.5-1.6	4.4-4.5	7.4- 8.1	33-34	24-26
punctata												
Rio Xingu	2	147.0-149.0	4.7-4.9	5.7-6.0	6.5-6.9	5.8-7.2	2.1	1.2-1.3	4.0-4.1	6.7- 9.0	30-32	19-22
Rio Paranapura	12	123.0-160.0	4.8-5.4	5.6-6.6	6.7-7.9	5.9-8.0	1.9-2.0	1.2-1.4	3.8-4.1	5.7- 6.5	31-32	18-20
Rio Huallaga	5	113.7-156.0	5.1-5.5	6.2-6.5	7.4-7.8	6.5-8.5	2.0-2.1	1.2-1.3	3.8-4.1	6.0- 6.5	31-32	20
Iquitos	5	128.0-146.0	4.3-4.7	5.7-6.2	5.8-6.7	5.8-7.2	1.9-2.0	1.5-1.6	4.0-4.2	7.2- 7.6	30-31	18-20

Pseudoloricaria laeviuscula VERSUS *P. punctata*

Besides the characters used in the key to the species, with which one easily can identify the two species of *Pseudoloricaria*, 32 morphometric characters were measured and 5 meristic characters were counted in 14 specimens of *P. laeviuscula* (sl 106.4 to 296 mm) and in 21 specimens of *P. punctata* (sl 105 to 168 mm), including all type material.

After comparison of the results, 11 out of the 32 morphometric and 2 out of the 5 meristic characters have been examined in another 18 specimens of *P. laeviuscula* (sl 117 to 305 mm), and in another 23 specimens of *P. punctata* (sl 77.9 to 156 mm) in search for additional specific characters.

Only four characters seem to show specific differences: snout length (sn), maximum orbital diameter (mod), interorbital width (iow), and length of the fourth pelvic fin ray ($P_2$4th).

In 32 specimens of *P. laeviuscula* and in 44 specimens of *P. punctata* the ranges of sn, iow, mod, and $P_2$4th, expressed as ratios of head length (hl), are:

	hl/sn	hl/iow	hl/mod	hl/$P_2$4th
P. laeviuscula	1.7—2.0	7.4—10.8	4.0—4.9	1.5—1.9
P. punctata	1.9—2.2	5.7— 9.0	3.6—4.4	1.2—1.6

In table II these and some other ratios and counts are given for 20 specimens of *P. laeviuscula* and 24 specimens of *P. punctata*, arranged according to some localities.

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