

Generic Reassignment of the Loricariid Species *Monistiancistrus carachama* Fowler 1940, *Plecostomus lacerta* Nichols 1919, and *Rhinelepis levis* Pearson 1924 (Teleostei: Siluriformes)

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The family Loricariidae contains approximately 600 species of catfishes from South and Central America (Isbrücker, 1980). The family is diagnosed by several characteristics including the presence of an armor of bony plates in four or more rows, contact of the metapterygoid with the lateral ethmoid, an expanded mesethmoid disk, and an expanded anterior margin of the anterior ceratohyal (Schaefer, 1987). Of the six subfamilies possibly ascribed to Loricariidae, all except Hypostominae are well diagnosed (Schaefer, 1986, 1987). Schaefer hypothesized that Ancistrinae evolved from within Hypostominae making the latter subfamily paraphyletic; however, he continued to recognize both subfamilies until a thorough study of Hypostominae could be completed. Despite the apparent paraphyly of Hypostominae and the fact that few of the genera of the subfamily are diagnosed, it is still possible to identify most genera by referring to Gosline (1947) and examining type-specimens of type-species or using published diagnoses.

While examining type-specimens of loricariid catfishes, we have discovered three taxa that were placed by the original authors or recent workers into the wrong genera. In this paper, we present evidence to place *Monistiancistrus* Fowler 1940 into the synonymy of *Pseudorinelepis* Bleeker 1862, *Plecostomus lacerta* Nichols 1919 into *Kronichthys* Miranda Ribeiro 1908, and *Rhinelepis levis* Pearson 1924 into *Cochliodon* Heckel 1854.

*Materials and methods.*—Type-specimens were examined for various morphological characteristics associated with the genera of Hypostominae. Placement of species into genera was accomplished by comparison to the type-specimens of the type-species of the genus when possible and published descriptions or topotypic material when direct examination of the type specimens of the type species of the genus was not possible. Institutional abbreviations are as in Leviton et al. (1985) with the addition of IAP for Instituto de Investigaciones de la Amazonia

Peruana, Iquitos, Peru and MUSM for Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos Lima, Peru.

*Pseudorinelepis carachama* (Fowler)

*Monistiancistrus carachama* Fowler, 1940. Proc. Acad. Nat. Sci. Phila. 91:236-238. figs. 26-27.

*Pseudorinelepis carachama*. Nijssen and Isbrücker, 1986. Rev. fr. Aquariol. 13:93.

*Hypostomus carachama*. Isbrücker, 1992. Harnischwelse. September 1992:71.

*Monistiancistrus* was described as a monotypic genus from the Río Ucayali of Peru by Fowler (1940). Recently, the validity of *Monistiancistrus* and the phylogenetic position of the genus have been debated. The genus has been placed in Ancistrinae (Isbrücker, 1980) and Hypostominae (Isbrücker and Nijssen, 1982; Nijssen and Isbrücker 1986; Schaefer, 1986, 1987). Isbrücker and Nijssen (1982) placed *Monistiancistrus* in what they termed the "Hypostomus group" which also included *Hypostomus*, *Isorineloricaria*, *Cochliodon*, *Aphanotorulus*, and *Pterygoplichthys*, and Schaefer (1986) stated that the type differed from *Hypostomus* only by the loss of an adipose fin. Nijssen and Isbrücker (1986) placed *Monistiancistrus* into synonymy with the hypostomine genus *Pseudorinelepis* Bleeker 1862 with little comment. Finally, Isbrücker (1992) removed *Monistiancistrus* from *Pseudorinelepis* and placed it into the synonymy of *Hypostomus* with no comment.

Formerly, *Monistiancistrus carachama* was known only from the holotype (ANSP 68654) which is a juvenile, 72.2 mm standard length. However, Isbrücker and Nijssen (1982) noted the existence of a second specimen from the upper Amazon of Peru, and we recently acquired new material assignable to *Monistiancistrus* from the Amazon near Iquitos, Peru. Upon examination of new material, the holotype of *M. carachama*, and comparative specimens of *Pseudorinelepis*, we have determined that *Monistiancistrus* should be returned to the synonymy of *Pseudorinelepis*.

Species of *Pseudorinelepis* are large-river fish found in backwaters and floodplain lakes of the Río Amazonas and its major tributaries (Fig. 1). Most specimens are dark brown, occasionally with slightly darker spots on the dorsal-fin membrane (Fig. 2A). In breeding males, the body is tan with dark spots located at the junction of the lateral plates and on all fins, and the edges of the cheek, dorsal, caudal, and pectoral fins are orange (see photograph in Burgess, 1989:



Fig. 1. Type localities of *Cochliodon levis* (square) and *Kronichthys lacerta* (diamond) and range of *Pseudorinelepis* (circles). Open circle is the type locality of *P. carachama*. Some symbols represent more than one locality.

748). In one specimen (IIAP 114), the anterior part of the body is uniformly dark, and the posterior half is spotted whereas all other specimens in the same lot are uniformly dark brown. One specimen (INHS 36938) was olive-green when alive.

*Pseudorinelepis* is distinguishable from most Hypostominae by the lack of an adipose fin. The only other Hypostominae that lack an adipose fin are *Rhinelepis*, *Pogonopomoides*, *Pareiorhina*, *Corymbophanes andersoni*, and *Cochliodon levis*. *Pseudorinelepis* can be distinguished from these other hypostomines that lack adipose fins by a combination of the following characteristics: adipose fin completely absent and not replaced by a low ridge as in *C. andersoni*, well-keeled plates (vs flat in all others), odontodes forming tall ridges on the pterotic-supracleithrum (vs nearly flat in *C. levis*, *Rhinelepis*, and *Pogonopomoides*), head short but deep with depth to length ratio of 0.66–0.76 ( $\bar{x} = 0.71$ ,  $n = 11$ ) whereas the head is long and depressed in *Rhinelepis* with a depth to length ratio of 0.47–0.59 ( $\bar{x} = 0.52$ ,  $n = 6$ ), abdomen of adults completely encased in plates (abdomen either without plates or not completely encased in *C. levis*, *Pareiorhina*, and *Pogonopomoides*), posterior margin of the pterotic-supracleithrum not bordered by a patch of numerous small plates as in *Pogonopomoides* and *Rhinelepis*, teeth thin and bicuspid (vs spoon-shaped and usually unicuspid in *C. levis*), and an anal fin with one unbranched and five branched rays (vs four branched rays in *C. levis*).

The type of *M. carachama* is a heavily armored fish that putatively differs from *Pseudorinelepis* by lacking plates on the ventral surface of the head and by the absence of elongate odontodes on the cheek. However, both of these characteristics are associated with the size and age of the type of *M. carachama* which is a juvenile. Plates on the ventral surface of the head and abdomen develop rather late ontogenetically in hypostomine species (Regan, 1904) and are only just beginning to form on the type of *M. carachama*. A series of small (85.7–113.1 mm) *Pseudorinelepis* (INHS 36938) from the Río Amazonas near Iquitos, Peru, demonstrates that plates on the throat first develop in three patches, one on each side and one in the middle just above the cleithrum. As the fish grows, plates are added mesially and anteriorly from these three patches (Fig. 3) such that, in adults, the entire throat region is covered with small plates except for a small bare patch under the lower lip. The type of *M. carachama* does possess small patches of plates on the throat, but the patches are not as well developed as they are on the smaller specimen in Figure 3.

The only characteristic other than plates on the ventral surface of the head used to distinguish *Monistiancistrus* from *Pseudorinelepis* is the latter's possession of elongate odontodes on the cheeks (Burgess, 1989); however, this also is a characteristic that is added late ontogenetically, and the holotype of *Monistiancistrus* is too small to have developed odontodes. In the larger specimens of INHS 36938, development of the cheek odontodes has just begun. Both males and females have elongate cheek odontodes, but the patch of odontodes in males is larger and the odontodes are longer.

Because the characteristics used to diagnose *Monistiancistrus* are found only in juveniles and, in fact, are identical to those of juvenile *Pseudorinelepis*, we conclude that *Monistiancistrus* belongs in the synonymy of *Pseudorinelepis*. With the addition of *P. carachama*, *Pseudorinelepis* contains four nominal species, *P. agassizi*, *P. carachama*, *P. genibarbis*, and *P. pellegrini*, all of which come from the Río Amazonas.

#### *Kronichthys lacerta* (Nichols)

*Plecostomus lacerta* Nichols, 1919. *Revista Mus. Paul.* 11:424–425.

*Hypostomus lacerta*. Isbrücker, 1980. *Versl. Techn. Gegevens*, Univ. van Amsterdam. No. 22:25.

*Plecostomus lacerta* Nichols (1919) was described from the rio Juquiá at Poço Grande, São

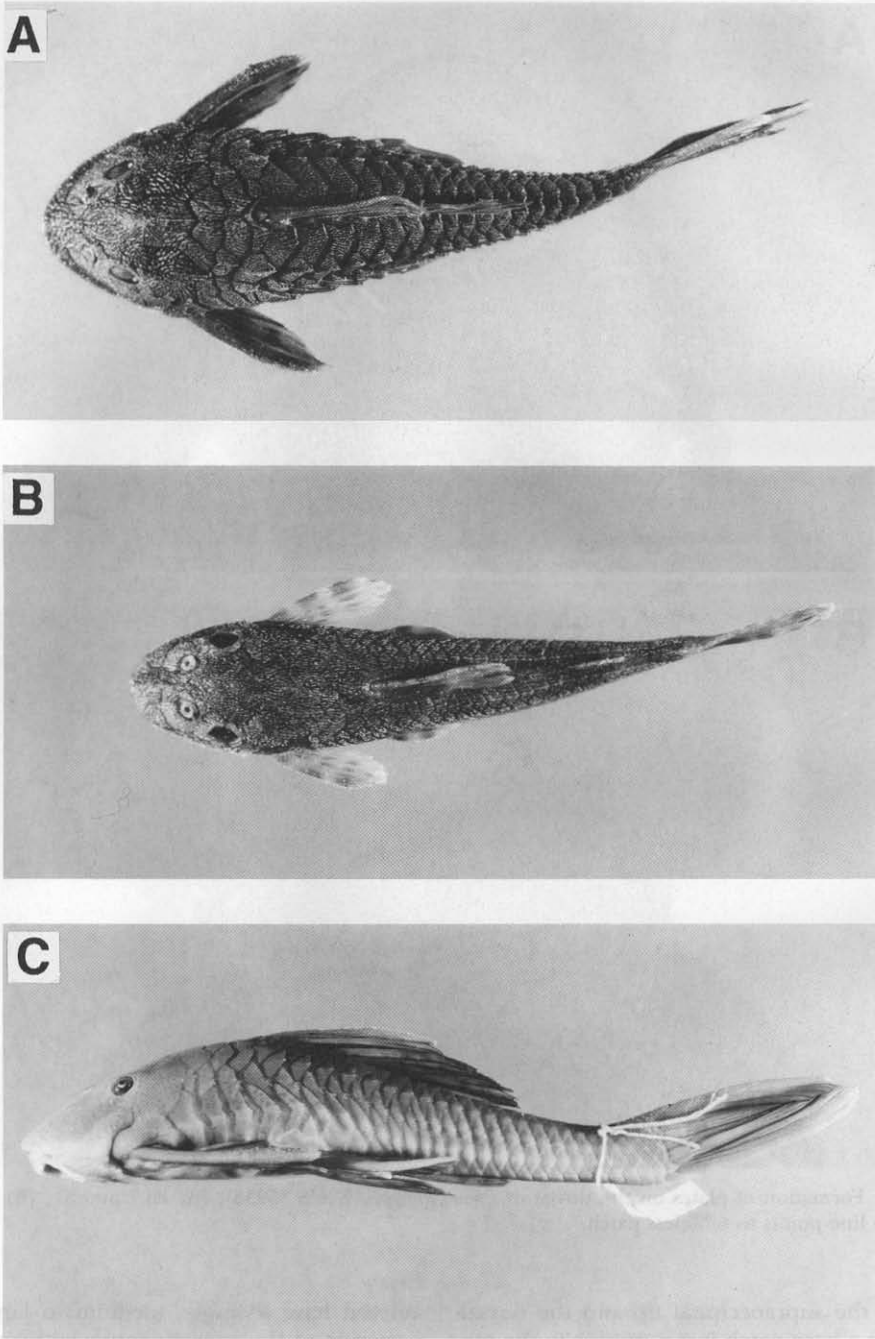


Fig. 2. (A) *Pseudorinelepis pellegrini* (INHS 36938, 95.0 mm), dorsal view; (B) *Kronichthys lacerta* (CAS 56718, 39.1 mm), dorsal view, and (C) *Cochliodon levis* (CAS 77350, paratype, 150.6 mm), lateral view.

Paulo, Brazil (Fig. 1). The only type numbered by Nichols (1919) in his text is the holotype (AMNH 7151); however, he examined three more specimens, and MZUSP 964 ( $n = 1$ ) is labeled as a paratype from Estação de Raiz da Serra, São Paulo, Brazil. *Plecostomus lacerta* was

transferred to *Hypostomus* when *Plecostomus* was synonymized with *Hypostomus* by Boeseman (1968).

Both specimens are cylindrical in body shape and possess a naked abdomen; more than three plates (four and six) along the dorsal midline

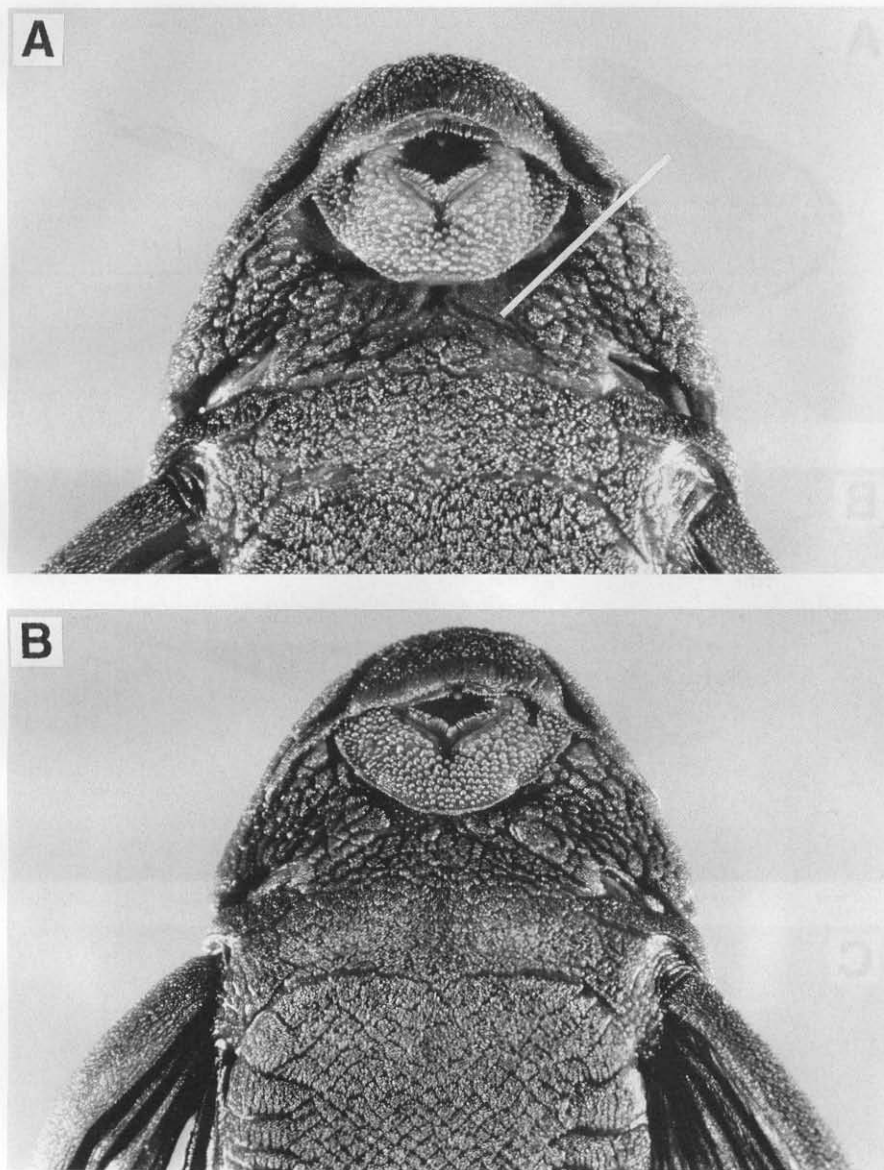


Fig. 3. Formation of plates on the throat of *Pseudorinelepis* (INHS 36938). (A) 85.7 mm SL. (B) 99.4 mm SL. White line points to scuteless patch.

between the supraoccipital tip and the dorsal-fin spine; a bare patch just posterior to the pterotic-supracleithrum; five branched anal-fin rays; a spinelet in the first dorsal fin that has become reduced to a small, rectangular, plate-like structure; short pelvic-fin spines that are wide and clublike; and the plate that bears the anterior segment of the preopercular canal is large and is reflected mesially. Both specimens lack elongate odontodes on the cheek. Species of *Hypostomus* usually have four branched anal-fin rays (Schaefer, 1986), and all *Hypostomus* ex-

amined have a single, medium to large plate posterior to the pterotic-supracleithrum and a V-shaped spinelet. Given the characters, it is necessary to remove the species from *Hypostomus*. *Kronichthys* is the only genus that agrees with all of the characters of *P. lacerta*, and through the use of the key of Gosline (1947), it is apparent that *P. lacerta* can only be ascribed to *Kronichthys*.

The color of both specimens of *K. lacerta* are considerably faded. Nichols (1919) gave little in the way of color characteristics other than to say

that the backs of the specimens were dusky. The paratype appears to have had several saddles along its back. Specimens of *Kronichthys* from near the type locality (CAS 56718) have 4–5 dark saddles (Fig. 2B). The sides of the body below the saddles are uniformly dark brown, and the abdomen is white. The fins have large spots with the spots on the caudal fin often coalescing to form a dark wash. Upper lobe of the caudal fin lighter than the lower lobe. Head mottled with spots along the margin and the upper lip.

Three species of *Kronichthys* have been described, *K. heylandii* Boulenger 1900, *K. subteres* Ribeiro 1908, and *K. lacerta* Nichols 1919, all from the state of São Paulo. It is unknown how *K. lacerta* compares with the two other nominal species or how any of the species can be distinguished from one another because of insufficient original descriptions. Both *K. subteres* and *K. lacerta* are described from the rio Ribeira do Iguape system.

*Cochliodon levis* (Pearson)

*Rhinelepis levis* Pearson, 1924. *Revista Mus. Paul.* 11:424–425.

*Hypostomus levis* Isbrücker, 1980. *Versl. Techn. Gegevens*, Univ. van Amsterdam. No. 22:25–26.

*Rhinelepis levis* was described by Pearson (1924) from the Río Beni drainage near San Miguel de Huachi at the junction of the Río Boopi and Río Cochabamba in Bolivia (Fig. 1). The species was originally placed by Pearson in *Rhinelepis* because of the lack of an adipose fin (Fig. 2C) and later placed in *Hypostomus* by Isbrücker (1980). However, the teeth of the four type specimens (holotype: CAS 77349, paratypes: CAS 77350, UMMZ 66496) are large and spoon-shaped. Among loricariids, spoon-shaped teeth are found only in *Cochliodon* and *Panaque*. Because the specimens lack the evertable plates and elongate odontodes on the cheek characteristic of *Panaque*, the specimens are assignable to *Cochliodon*. No other described species of *Cochliodon* lacks an adipose fin. Although individuals of loricariid species that normally have adipose fins, such as *Hypostomus* and *Aphanotorulus*, are occasionally found without them (JWA, pers. obs.), all of the specimens in the type series of *C. levis* lack an adipose fin, and it is assumed that the loss of the adipose fin is not a developmental abnormality but a characteristic that diagnoses *C. levis* from other species of *Cochliodon*.

From examination of the types, it appears that *C. levis* is light brown with a lighter ventral surface. Small spots are present on the anterior part of the body and the head but are absent from the abdomen. The dorsal, anal, and paired fins all have large, diffuse spots. The caudal fin is dusky and no spots are visible; however, Pearson (1924) reported that the specimens had spots on the caudal fin and that there were fewer than on the other fins. The abdomen is covered with small plates except for broad circular regions around the bases of the pelvic fins, small bare areas at the bases of the pectoral fins, and a small bare patch at the posterior margin of the lower lip. As in other species of *Cochliodon*, the dentaries are angled to form a V-shape, and the body is deepest at the origin of the dorsal fin and tapers dramatically to the caudal peduncle making the body appear humped. There are 12–18 teeth per dentary and 10–17 teeth per premaxilla.

*Specimens examined.*—*Cochliodon levis*: CAS 77349 (IU 17014) (Holotype), CAS 77350 (IU 17014) (2 Paratypes), and UMMZ 66496 (Paratype), Bolivia, Depto. La Paz, Río Beni Drainage, San Miguel Huachi at junction of Río Boopi and Río Cochabamba. *Kronichthys lacerta*: AMNH 7151 (Holotype), Brazil, São Paulo, rio Juquiá at Poço Grande; Brazil, São Paulo, MZUSP 964 (Paratype), Estação de Raiz da Serra; CAS 56718 (3), Brazil, São Paulo, rio Ribeira basin, trib. of rio Ribeira do Iguape at bridge on São Paulo-Curitiba highway. *Pseudorinelepis agassizii*: MCZ 8007 (Syntype?), Brazil, Amazonas, lago Manacapuru, Manacapuru (lago Grande de Manacapuru), 3°6'S, 61°30'W. *Pseudorinelepis carachama*: ANSP 68654 (Holotype), Peru, Depto. Loreto, Río Ucayali Basin, at Contamana. *Pseudorinelepis genibarbis*: FMNH 95569 (1) and MZUSP 6339 (17), Brazil, Amazonas, lago Castro do rio Purus. *Pseudorinelepis pellegrini*: CAS 42325 (1), Peru, Depto. Loreto, Quebrada Yaguas Yacu near Pebas; CAS 58801 (1), Peru, Depto. Loreto, Iquitos; IAP 114 (6), Peru, Depto. Loreto, Río Samiria (Caño Ungurahui); INHS 36938 (6), Peru, Depto. Loreto, Río Amazonas, at Pueblo Gallito; INHS 36941 (1), Peru, Depto. Loreto, Felipe Cocha (Río Itaya), 12 km S Iquitos on road to Quistococha near the community of 29 Enero 1995; MUSM 1847 (1), Peru, Depto. Ucayali, Ivita, Pucallpa; MUSM 1869 (1), Peru, Depto. Ucayali, Santa Carmela de Machangay (laguna), Pucallpa; MUSM 6064 (1), Peru, Depto. Ucayali, Yarinacocha, Coronel Pottillo.

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