Hypostomus rhantos (Siluriformes: Loricariidae), a new species from southern Venezuela

JONATHAN W. ARMBRUSTER1, LEIGH A. TANSEY2 & NATHAN K. LUJÁN3
1Department of Biological Sciences, Auburn University, 331 Funchess, Auburn, AL 36849, USA: Telephone: (334) 844-9261, FAX: (334) 844-9234. E-mail: armbrjw@auburn.edu
2Franklin High School, 810 Hillsboro Road, Franklin, Tennessee 37064 USA: Telephone: 615-472-4450. E-mail: leight@wcs.edu
3Department of Biological Sciences, Auburn University, 331 Funchess, Auburn, AL 36849, USA: Telephone: (334) 844-9261, FAX: (334) 844-9234. E-mail: lujannk@auburn.edu

Abstract

Hypostomus rhantos is described for a uniquely pigmented species of loricariid catfish from the upper Río Orinoco of Amazonas, Venezuela. Hypostomus rhantos can be separated from all other Hypostomus except H. micromaculatus by having its head and dorsal and lateral surfaces of body densely covered in very small spots (greater than 15 spots on the first plate in the dorsal series of specimens less than 100 mm SL vs. less than 10; greater than 30 spots in specimens greater than 100 mm SL vs. less than 15). The new species is distinguished from H. micromaculatus by having round spots (vs. longitudinally oval) that are unordered (vs. in longitudinal lines), by having well-developed keels on the lateral plates (vs. keels weak), by the presence of a ridge on the pterotic that is contiguous with the supraorbital ridge (vs. pterotic ridge absent), and by having the abdomen fully plated (vs. partially plated or naked).

Key words: Amazonas, Catfish, Hypostominae, Hypostomus micromaculatus, Neotropics, Siluriformes, Taxonomy

Resumen

Se describe Hypostomus rhantos para una especie de loricariido con una pigmentación única de la parte alta del Río Orinoco en Amazonas, Venezuela. Hypostomus rhantos se separa de todos los otros Hypostomus excepto H. micromaculatus por presentar la cabeza y las superficies dorsal y laterales del curepo cubiertas densamente por puntos muy pequeños (más de 15 puntos en la primera placa de la serie dorsal en especímenes con longitud estándar menor a 100 mm vs. menos de 10 puntos; más de 30 puntos en especímenes con longitud estándar mayor a 100 mm vs. menos de 15). La nueva especie se distingue de H. micromaculatus por presentar puntos redondeados (vs. longitudinalmente ovales) dispuestos en desorden (vs. dispuestos en líneas longitudinalines), por presentar quillas bien desarrolladas en las placas laterales (vs. quillas incipientes), por la presencia de una cresta en el pterotico que es contigua con la cresta supraorbital (vs. cresta en el pterotico ausente), y por presentar el abdomen completamente cubierto por placas (vs. parcialmente cubierto o desnudo).

Introduction

The genus Hypostomus has 138 species currently recognized as valid making it the largest genus in the Loricariidae (suckermouth armored catfishes; Armbruster, 2004). Few of the species are well defined, and a comprehensive review of the genus is lacking. Other than individual species descriptions, the taxonomic reviews that have been done on Hypostomus are limited to geographic reviews (Boeseman, 1968; Reis et al., 1990) or to small monophyletic groups such as the H. unicolor group (Armbruster and Page, 1996; Armbruster, 1998) and the H. cochliodon group (Armbruster, 2003b; Hollanda Carvalho and Weber, 2004).
The type species of Hypostomus is *H. plecostomus*, a species from the coastal Guyanas (Boeseman, 1968). It is characterized by dentaries angled just greater than 90° (Armbruster, 2004), viliform teeth, and a generalized morphology consisting of a fairly broad, fairly short body, that is mildly dorsoventrally flattened and brown with dark spots (Boeseman, 1968). There are species of similar morphology in lowlands of most major river basins of tropical South America.

Armbruster (2004) recognized very few subdivisions within Hypostomus, recognizing only an *H. emarginatus* group and an *H. cochliodon* group. For the purposes of this paper, Hypostomus is recognized in two main groups the *H. emarginatus* group (as defined in Armbruster, 2004) and the *H. plecostomus* group (all the other species). The *H. plecostomus* group additionally has the *H. cochliodon* subgroup as defined in Armbruster (2003b, 2004), Hollanda Carvalho and Weber (2004), and Armbruster and de Souza (2005). Few species of the *H. plecostomus* group (excepting species of the *H. cochliodon* subgroup) have been described from the Orinoco River basin (just *H. argus*) and none from the Negro (Weber, 2003, pers. obs.). In addition, there is a species of *Hypostomus* in the Orinoco that is very similar to *H. robinii* (described from Trinidad, pers. obs.). Some specimens of a *Hypostomus* with extremely small spots have been found in the Orinoco River drainage of southern Venezuela, and Armbruster (2004) referred these specimens to *H. micromaculatus* (a species described from Suriname, Boeseman, 1968). Examination of types of *H. micromaculatus* reveals that the Venezuelan specimens do not belong to this species, and comparison of the specimens to types or original descriptions of all other species of *Hypostomus* reveals that the specimens represent a new species.

Methods

Counts and measurements follow Armbruster (2003a). Specimens were cleared and stained according to the methods of Taylor and Van Dyke (1985). Institutional abbreviations are as in Leviton et al. (1985). Names of skeletal characteristics are as in Schaefer (1987) and of plate rows as in Schaefer (1997). Types of nearly all species of Hypostomus have been examined excepting some recently described species, species for which the types are unknown or lost, some species that are considered synonyms of others, and a couple of Boeseman’s species from Suriname. For most species for which types have not been examined, the original descriptions provide adequate information on color (the main character used to separate *H. rhantos*). For the few that don’t, it is unlikely that the species are similar, and they are not from localities near the range of *H. rhantos*. Given that there are 157 nominal species in Hypostomus and thousands of lots of the genus have been examined, the material examined below includes only information for paratypes of *H. micromaculatus* (the only species of Hypostomus with a similar color pattern). A list of the species of Hypostomus and the types examined can be found at: http://www.auburn.edu/academic/science_math/res_area/loricariid/fish_key/hypostom/hypos.html. The following abbreviations are used in the text: D. = distance, Dia. = diameter, Dp. = depth, dr. = drainage, L. = length, W = width.

**Hypostomus rhantos** New Species

Figs. 1–2 and 3b

**Holotype:** MCNG 55352, 157.2 mm SL, Venezuela, Amazonas, Río Manapiare-Río Ventuari-Río Orinoco Drainage, Río Parucito at Raudales Salomon, 2.7 km NE of San Juan de Manapiare, 05.34637°, -066.03347°, D.C. Werneke, N.K. Lujan, O. León, 16 April 2004.

**Paratypes:** 63 specimens. All collections Venezuela, Amazonas, Río Orinoco drainage: ANSP 160774, 11, 76.7–103.5 mm SL, Morichal 26.9 km from Puerto Ayacucho, along Puerto Ayacucho – Caicara highway,
B. Chernoff et al., 15 November 1985; ANSP 162365, 2, 134.4–139.0, Backwater of Río Orinoco behind sand playa ca. half hour upstream from Isla Temblador, 03°04’ N, 066°28’ W, B. Chernoff, et al., 10 March 1987; ANSP 185240, 4, 56.8–124.5, AUM 39273, 3 c & s, 5, 53.5–149.7, MCNG 55353, 5, 52.0–154.5, UF 164255, 2, 54.4–145.5, Same data as holotype; AUM 39308, 1, 124.0, MCNG 55354, 2, 94.7–99.2, RMNH 35500, 1, 99.0, Río Manapiare, tributary of Río Ventuari, 14.5 km NW of San Juan de Manapiare, 05.42863°, -066.13616°, N.K. Lujan, M.H. Sabaj, L.S. de Souza, and D.C. Werneke, 12 April 2004; AUM 39235, 1, 52.9, Río Ventuari, beach across the river from Picua Village, 34 km ENE of Macuruco, 104 km E of San Fernando.

Diagnosis: Hypostomus rhantos is unique among Hypostomus (except for H. micromaculatus) by having extremely small spots (see especially Fig. 2). Hypostomus rhantos is a member of the H. plecostomus group, but is not a member of the H. cochliodon subgroup (Armbruster, 2004). Hypostomus rhantos can be separated from the H. emarginatus species group by having a dark brown base color (vs. light tan), by having a small buccal papilla (vs. large), and by lacking hypertrophied odontodes on the lateral plates of nuptial males (vs. hypertrophied odontodes present); and from the H. cochliodon species subgroup of the H. plecostomus group by having viliform teeth (vs. spoon-shaped). Hypostomus rhantos can be separated from all other members of the H. plecostomus group (including species of the H. cochliodon subgroup) except H. micromaculatus by having extremely small spots (greater than 15 on the first plate in the dorsal series in H. rhantos vs. five or fewer). Hypostomus rhantos can be separated from H. micromaculatus by having all of the spots round and evenly distributed (vs. spots longitudinally oval and restricted to rows Figs. 1–2 vs. Fig. 4), keels of lateral plates well-developed (vs. weak), a ridge present on the pterotic that is contiguous with the supraorbital ridge (vs. ridge absent, Fig. 3), and by having a fully plated abdomen (vs. abdomen partially plated or naked). In addition, smaller specimens of H. rhantos have spots on the dorsal fin whereas small specimens of H. micromaculatus have the dorsal fin entirely dark.

Description: Morphometric data given in Table 1. Largest specimen 195.8 mm SL. Head and nape forming arch from tip of snout to origin of dorsal fin. Body depth decreasing from origin of dorsal fin to dorsal procurent caudal spines then increasing to caudal fin. A rounded ridge present from anterodorsal corner of orbit, running ventral to nares, and ending slightly anteroventral of anterior nare. Longitudinal ridge of raised bone and slightly larger odontodes present on pterotic-supracleithrum beginning at posteroventral corner of orbit and contiguous with supraorbital ridge. Space between orbits concave such that supraorbital ridge higher than medial surface of head. Supraoccipital convex medially with slight crest. Nares separated by flap of skin held erect in life. Dorsal, middorsal, median and midventral plate rows complete from head to caudal fin, ventral plate row begins at insertion of pelvic fin and continues to caudal fin. Lateral plates with short, median keels with enlarged, dull odontodes. Keels on first two plates of dorsal row and sometimes first three plates forming line from supraoccipital to posterolateral corner of nuchal plate, not confluent with keel on dorsal plate row beginning on fourth plate. Base of caudal fin covered in elongate, roughly triangular plates. Entire ventral surface of head and body (except region around insertion of pelvic fin) covered in small platelets. Platelets on abdomen increase in number with standard length. Head covered in small plates. Frontal, nasal, sphenotic, infraorbitals, opercle, pterotic-supracleithrum, suprapreopercle, and
 supraoccipital supporting odontodes. Platelets that cover anteroventral corner of opercle slightly separated from opercle allowing plates to be marginally everted (angle of eversion less than 30º).

Dorsal fin moderately long, usually just barely reaching preadipose plate when depressed, consisting of small, V-shaped spinelet, fairly strong spine, and seven rays. Caudal fin forked, lower lobe longer than upper. Pectoral-fin spine strong, extending posteriorly to pelvic-fin rays when depressed ventral to pelvic fin; cleithrum with exposed process dorsal to pectoral-fin rays that tapers posteriorly to point; pectoral fin inserted on same plane as pelvic fin such that spine, when depressed parallel with body, lies on top of and in contact with

**FIGURE 5.** Distribution of *Hypostomus rhantos*, open symbol is type locality. Base map by M. Weitzman.

**Coloration:** Light gray to tan when alive, becoming tan when preserved. Body densely covered with tiny spots, head spots even smaller than body spots. Spots present on all fins, generally larger than spots on body, evenly distributed on rays, spines, and membranes. Caudal fin membranes light and spotted anteriorly, fading to dark wash posteriorly. Abdomen lighter than sides, with tiny spots. Occasionally with four dorsal saddles,
first below anterior dorsal-fin rays, second below and slightly behind posterior dorsal-fin rays, third below and slightly anterior to adipose-fin spine, and fourth at base of caudal peduncle; all saddles angled anteriorly, saddles one and two combine and continue to base of pelvic fin, third and fourth terminating at middle of mid-ventral plate row. Fin spines usually lighter than rest of body. Spots relatively larger in juveniles. Juveniles with fewer spots distally on all fins, lower half of caudal fin much darker.

**Range:** Currently known from the Río Ventuari, a tributary of the upper Río Orinoco, and the mainstem upper Orinoco above Puerto Ayacucho to the Río Casiquiare in Amazonas, Venezuela (Fig. 5).

**Ecology:** *Hypostomus rhantos* was collected in loricariid assemblages with an average of 7.2 loricariid species per site (n=16 sites). Habitats from which *H. rhantos* were collected range from consolidated lateritic rocks in flow, to bedrock cracks in flow, to branches and trunks of trees in slack water.

**Etymology:** *Rhantos* is Greek for sprinkled, speckled, or spotted and refers to the tiny randomly placed spots of the species.

**Discussion:** Specimens of *Hypostomus rhantos* were analyzed in Armbruster (2004a) but were incorrectly referred to as *H. micromaculatus*. *Hypostomus rhantos* was found to be the sister to *H. robinii*; however, support for this was very weak (Bremer decay index = 1), and derived from only from two homoplastic characteristics: posteromedial invagination of the fifth ceratobranchial present (character 11 state 1 from Armbruster, 2004) and a reversal to a short levator arcus palatini crest (44-1). This clade was part of a larger clade consisting of the *H. cochliodon* subgroup, *Hypostomus plecostomus*, the potentially undescribed *Hypostomus* similar to *H. robinii* from the Orinoco, and *H. cordovae*, with this clade being supported by a reversal to a wide posterior edge to the posterior process of the coracoid (158-0). This clade is also poorly supported with a Bremer decay index of one. Most of the relationships within *Hypostomus* are poorly resolved and need much further study.

*Hypostomus rhantos* is most similar in coloration to *H. micromaculatus* from Suriname. In addition to coloration, *H. rhantos* appears taller and wider than *H. micromaculatus*; however, we do not have enough specimens available to provide confident measurements of this. There are no species that have been described or that we have examined between the Upper Orinoco and Suriname with a similar color pattern. Given the vast distance between the two species, it would be unlikely that they would be sister species. They are different in the size of the keels (relatively well-developed in *H. rhantos* and almost absent in *H. micromaculatus*) and the amount of abdominal plating (fully plated in *H. rhantos* and absent or nearly so in *H. micromaculatus*). Although these characteristics change a lot in loricariids, they do suggest when coupled with locality data that the two species may have small spots via convergence.

**Paratypes of Hypostomus micromaculatus examined:** RMNH 25482, 1; RMNH 25484, 2; 25487, 3.

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**References**


