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Trichomycterus giganteus (Siluriformes: Loricarioidea: Trichomycteridae): a new catfish from the Rio Guandu basin, southeastern Brazil

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Abstract

Trichomycterus giganteus, new species, is described from the Rio Guandu basin, Serra do Mendanha, Rio de Janeiro city. Although being the biggest among species from southeastern Brazil and endemic to an older metropolitan area, it has gone unknown until the present, illustrating the poor knowledge of the taxonomy of this genus. It is distinguished from the remaining species of the genus by a combination of long nasal and maxillary barbels, a single median third supraorbital pore, long pectoral filament, nine pectoral-fin rays, high number of odontodes, relative position of the anal-fin origin, and a unique color pattern.

Key words: Catfishes, Siluriformes, Trichomycteridae, *Trichomycterus*, southeastern Brazil, new species

Resumo

Trichomycterus giganteus, nova espécie, é descrita para a bacia do rio Guandu, Serra do Mendanha, cidade do Rio de Janeiro. Apesar de ser a maior espécie do sudeste do Brasil, e endêmica de uma antiga área metropolitana, ela permaneceu desconhecida até o presente, evidenciando o mal conhecimento da taxonomia do gênero. Distingui-se das demais espécies do gênero pela combinação de barbilhões nasal e maxilar longos, fusão do último poro supraorbital, filamento peitoral longo, nove raios na peitoral, número de odontódeos elevado, posição relativa da origem da nadadeira anal, e pelo padrão de colorido exclusivo.

Introduction

Trichomycterus Valenciennes is the most speciose genus of the Trichomycteridae, with over a hundred valid and many undescribed species (de Pinna, 1998). Despite the broad

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distribution of the genus, most species have limited distributions, and usually are restricted to only one river (Eigenmann, 1918).

Although evidence of new species is abundant (Costa, 1992; Barbosa & Costa, 2003; de Pinna, 1992; Trajano & de Pinna, 1996), many can not be formally described because of the systematic problems within *Trichomycterus* (*e. g.*, poorly diagnosed species), and because it is the only genus not supported by any synapomorphy (de Pinna, 1989). Among those problems, the older original descriptions, based only on external morphology of few specimens, are among the biggest obstacles in the knowledge of the real diversity (de Pinna, 1998; Trajano & de Pinna, 1996). The consequence is that only very distinctive species could be easily described in recent years. The new species herein described is one of these species, even though it is the largest species of southeastern Brazil and has a distinctive color pattern.

Material and methods

Measurements and counts follow Costa (1992). Measurements are presented as percentages of standard length (SL) or as percentage of head length (HL). Counts of procurrent caudal fin rays, vertebrae, branchiostegal rays, teeth and odontodes were made only in cleared and stained specimens (c&s) prepared according to Taylor & Van Dyke (1985). Abbreviations for institutions are: MCP, Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre; and UFRJ, Universidade Federal do Rio de Janeiro, Rio de Janeiro.

Trichomycterus giganteus new species

(Fig. 1)

Holotype. UFRJ 5999, 120.6 mm SL; Brazil: Estado do Rio de Janeiro: Município do Rio de Janeiro, Campo Grande, Rio Guandu-Mirim, Rio Guandu basin; S. M. Q. Lima, R. Paiva & R. Salles, 20 February 2003.

FIGURE 1. *Trichomycterus giganteus*, UFRJ 5999, holotype, 120.6 mm SL; Brazil: Estado do Rio de Janeiro: Rio de Janeiro. Photo by W. J. E. M. Costa.

Paratypes. UFRJ 5730, 10 ex., 116.2–138.7 mm SL; MCP 35028, 4 ex., 112.6–137.8 mm SL; UFRJ 5732, 2 ex. (c&s), 109.8–111.2 mm SL; all collected with holotype. UFRJ 5399, 4 ex., 145.5–204.0 mm SL; UFRJ 5733, 2 ex. (c&s), 140.4–147.1 mm SL; Brazil: Represa do Mendanha; H. N. Cunha, 2 February 1986.

Diagnosis: Distinguished from all other species of the genus by having a broad dark bluish gray stripe along lateral midline of body, restricted to inner layer of tegument, overlapped by superficial dark brown spots. Similar to *T. nigricans* Valenciennes and *T. immaculatus* (Eigenmann & Eigenmann), and distinguished from the remaining species of the southeastern Brazil by having nine pectoral-fin rays (vs. eight or less), anal-fin origin at vertical posterior to dorsal-fin base (vs. through posterior portion of dorsal-fin base), and more odontodes (interopercular 59–70 vs. 30–52, opercular 23–30 vs. 10–20). Readily distinguished from *T. nigricans* and *T. immaculatus* by having longer nasal and maxillary barbels (nasal reaching pectoral fin base, vs. between orbit and opercular patch of odontodes; maxillary reaching anterior third of pectoral fin, vs. to interopercular patch of odontodes). Also distinguished from *T. immaculatus* by having a single median third supraorbital pore (vs. third supraorbital pore paired). This new taxon is unique among species of southeastern Brazil by having a dark gray opercular patch of odontodes (vs. light yellow). It is also the biggest species of this region, reaching about 200 mm SL (vs. 50–150 mm SL).

Description: Morphometric data for holotype and paratypes given in Table 1. Dorsal-fin origin in vertical between centrum of 17th and 19th vertebrae. Anal-fin origin in vertical posterior to dorsal-fin base, and through centrum of 23rd or 24th vertebra. Pectoral fin nearly triangular, lateral and posterior edges slightly convex. First pectoral-fin ray terminating in long filament, about 50% pectoral-fin length. Pelvic fin length about 2/3 anal fin length, tip not reaching anal fin nor covering urogenital pore, in vertical through base of 2nd branched dorsal-fin ray; pelvic-fin bases separated by interspace. Caudal fin truncate. Dorsal-fin rays 12–13; anal-fin rays 10–11; pectoral-fin rays 9; pelvic-fin rays 5; caudal-fin principal rays 13, dorsal procurrent rays 15, ventral procurrent rays 13–14. Total vertebrae 36–37; pleural ribs 12–13. Upper hypural plates separated, dorsal plate slightly wider than ventral plate.

Head trapezoidal in dorsal view. Maxilla about as long as premaxilla. Teeth conical. Tip of nasal barbel reaching pectoral-fin base. Tip of maxillary barbel reaching anterior third of pectoral fin. Tip of rictal barbel reaching behind opercular patch of odontodes. Branchiostegal rays 7–8. Interopercular odontodes 59–60; opercular patch of odontodes wide, with 23–24 odontodes; odontodes conical, opercular odontodes wider than interopercular odontodes; opercular odontodes arranged vertically. Medial margin of autopalatine slightly concave; posterior process of autopalatine about half autopalatine length without posterior process. Lacrimal about one fourth supraorbital length; supraorbital rod-like. Metapterygoid small, without distinct processes. Anterodorsal surface of hyomandibula with weak concavity. Single median third supraorbital pore. Anterior section of infraorbital canal present.

TABLE 1. Morphometric data of *Trichomycterus giganteus* n. sp. H: holotype (UFRJ 5999).

	H	Paratypes (UFRJ 5730)								
Standard length (mm)	120.6	138.7	134.8	134.3	132.2	127.6	124.6	123.5	121.4	120.1	116.2
Percents of standard length											
Body depth	16.5	17.0	17.1	17.1	15.8	15.6	16.4	16.5	17.6	16.4	17.2
Caudal peduncle depth	12.8	11.9	12.5	12.8	12.4	12.2	12.7	12.7	12.6	12.6	12.5
Body width	9.8	10.6	9.6	10.1	9.9	10.0	9.5	9.7	10.7	9.9	10.4
Caudal peduncle width	4.4	4.8	4.6	4.8	4.7	4.6	4.2	4.6	4.8	4.7	4.5
Dorsal-fin base length	12.3	12.2	11.9	11.9	11.8	11.2	11.7	11.6	10.9	11.5	10.4
Anal-fin base length	8.3	8.3	8.1	8.3	7.9	8.1	8.7	8.7	8.2	8.3	8.2
Pelvic-fin length	11.1	9.0	9.4	9.7	9.6	10.0	10.3	10.1	10.3	10.2	10.5
Distance between pelvic-fin bases	0.8	1.2	0.9	1.0	0.9	1.0	1.1	0.8	0.7	1.1	0.9
Pectoral-fin length	14.1	11.2	11.7	12.4	12.4	11.5	12.6	12.5	13.1	13.3	13.4
Predorsal length	58.2	58.1	59.2	58.9	57.1	57.1	58.1	60.5	58.4	56.7	59.8
Prepelvic length	54.4	51.4	52.7	51.2	55.3	52.6	53.7	51.5	53.9	54.6	54.4
Head length	19.7	19.6	19.0	19.2	19.1	18.4	19.5	19.4	18.9	19.3	19.3
Percents of head length											
Head depth	44.3	50.5	47.3	47.5	50.1	48.5	48.3	46.0	51.6	49.5	49.4
Head width	83.0	84.7	87.9	86.3	88.7	87.4	87.3	86.4	89.2	84.7	92.1
Interorbital width	30.8	30.8	31.3	31.1	31.4	32.7	32.8	30.7	33.0	31.1	33.3
Preorbital length	46.8	48.8	47.1	46.7	47.5	48.0	47.7	46.8	46.0	47.1	48.1
Eye diameter	8.0	7.7	8.1	8.0	8.0	8.4	8.3	8.2	8.8	8.2	8.5

Coloration: Side of body and head light yellowish brown, slightly greenish between dorsal surface of head and laterodorsal portion of flank anterior to dorsal-fin origin. Slightly purplish on dorsal portion of caudal peduncle; orange on ventral portion of flank between pelvic-fin base and anterior portion of caudal peduncle. Rounded brown blotches on dorsum, dorsal half of flank, and head, both in superficial and inner layer of integument, blotches of distinct layers sometimes overlapped. Broad dark bluish gray stripe along lateral midline, restricted to inner layer of tegument. Superficial brown dots below lateral midline; venter light brownish yellow. Opercular patch of odontodes dark gray, interopercular patch of odontodes pale yellow; barbels gray, dark brown on basal portion. Iris dark green. Dorsal fin orange with brown dots on basal portion, yellowish hyaline on distal portion. Caudal fin dark yellow with vertical rows of small dark brown spots, distal fourth hyaline. Pectoral, pelvic and anal fins pale orange with brown dots; pectoral-fin filament light gray.

Distribution: Upper Rio Guandu basin, Serra do Mendanha, southeastern Brazil.

Habitat notes: The type locality is a clear water stream with strong current. All specimens, however, were found in still water between 50 and 200 cm deep, hidden under rocks.

Etymology: From the Latin *giganteus* (gigantic) referring to the large size of the new species, the biggest among species from southeastern Brazil.

Discussion

Arratia (1998) provided a detailed redescription of the type species of the genus, *Trichomycterus nigricans* based on a single specimen deposited in the Muséum National d`Historie Naturelle, Paris. This redescription reveals some uncommon features among species from southeastern Brazil that are shared by *T. nigricans*, *T. immaculatus*, and *T. giganteus*, as noted in the present study: nine pectoral-fin rays and high number of odontodes in interopercular patch of odontodes (59–69). However, it is not clear at the present if these conditions are evidence of close relationships, since both may occur or not in other Trichomycterinae taxa from the Andean region, making polarization of character states ambiguous.

Another interesting point concerning *Trichomycterus giganteus* is its very distinctive size, the biggest among species from southeastern Brazil. Surprisingly, this species is endemic to the Rio de Janeiro, one of the oldest and largest cities in South America, demonstrating the poor knowledge of trichomycterid diversity.

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