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A new species of *Australoheros* from the upper rio das Antas, laguna dos Patos System, southern Brazil

(Labroidei, Cichlidae, Cichlasomatinae)

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A new species of *Australoheros*, with the longest snout of the genus, is herein described from small tributaries of the upper rio das Antas, rio Jacuí drainage, a region characterized by rivers with rapids. This new species differs from *A. ribeirae* and other undescribed species from southeastern Brazil by caudal and precaudal vertebrae counts, and differs from *A. ribeirae* by having a deeper body and a lower preorbital depth. It is also distinguished from all the southern species by having pink to red dominant males (except *A. minuano*) and a longer snout (except *A. tembe* and *A. forquilha*). *Australoheros taura* differs in color pattern characters from *A. scitulus* and *A. forquilha* by having no mark on side of head; from *A. facetus* and *A. minuano* by having a very narrow caudal-fin base spot; and from *A. kaaygua* by having a visible caudal-fin base spot. The new species is distinguished from *A. forquilha*, *A. tembe*, *A. scitulus* and *charrua* by having fewer caudal vertebrae; and from *A. tembe* by having fewer total vertebrae. *Australoheros taura* also differs from its congeners from southern Brazil by other meristic and morphometric characters, i.e., more anal-fin rays, longer caudal peduncle, fewer total vertebrae, and longer predorsal length. Based on three apomorphic characters (four scales of dorsal-fin origin series, 12–13 proximal radial and caudal-fin base spot very narrow), *A. taura* is closely related to *A. kaaygua*, *A. charrua* and *A. scitulus* group. Not being included in the group containing *A.* sp. *jacui*, although it is recorded from the same river basin.

Uma nova espécie de *Australoheros*, com o focinho mais longo do gênero, é aqui descrita para pequenos tributários do curso superior do rio das Antas, drenagens do rio Jacuí, uma região caracterizada por rios com corredeiras. Essa nova espécie difere de *A. ribeirae* e outras espécies ainda não descritas do sudeste do Brasil por contagens de vértebras caudais e pré-caudais, e difere de *A. ribeirae* por possuir corpo mais baixo e menor altura pré-orbital. Ela também difere de todas as espécies do Sul por possuir machos dominantes rosados para avermelhados (exceto de *A. minuano*) e um focinho mais comprido (exceto de *A. tembe* e *A. forquilha*). *Australoheros taura* difere em padrão de colorido de *A. scitulus* e *A. forquilha* por não possuir marcas no lado da cabeça; de *A. facetus* e *A. minuano* por possuir mácula da base da caudal muito estreita; e de *A. kaaygua* por possuir uma mácula da base da caudal visível. A nova espécie difere de *A. forquilha*, *A. tembe*, *A. scitulus* and *charrua* por possuir menos número de vértebras caudais; e de *A. tembe* por possuir menor contagem do total de vértebras. *Australoheros taura* também difere das demais espécies do gênero do sul do Brasil devido a outros caracteres merísticos e morfométricos, por exemplo, mais raios na nadadeira anal, pedúnculo caudal mais longo, menos vértebras e maior comprimento pré-dorsal. Com base em três caracteres

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apomórficos (quatro escamas na série da origem da nadadeira dorsal, 12-13 radiais proximais na base da nadadeira anal e mácula da base da nadadeira caudal muito estreita), *A. taura* é proximamente relacionada com o grupo de *A. kaaygua*, *A. charrua* e *A. scitulus*. Não sendo incluída no grupo contendo *A.* sp. *jacui*, apesar de elas serem da mesma bacia hidrográfica.

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Introduction

Australoheros Rícan & Kullander, 2006 is a cichlid genus occurring in southeastern South America, in the Paraná-Paraguay-Uruguay river system and its tributaries (Rícan & Kullander 2006). Among characters employed in studies of systematics of Neotropical cichlids, color patterns are fundamental to the taxonomy of the genus, which is diagnosed by having two xantophores on the caudal peduncle in juvenile specimens and vertical trunk bars 5-6 being interrupted in adults (Rícan & Kullander 2006). In addition, species are often diagnosed by the position and shape of bars and spots, although many authors do not describe the exact position and form of bars and spots in their descriptions (Casciotta et. al. 1995; Rícan & Kullander, 2003; Rícan & Kullander 2006; Rícan & Kullander 2008).

Currently, the genus comprises nine valid species; *Australoheros facetus* (Jenyns, 1842) and eight recently described species: *A. kaaygua* Casciotta, Almirón & Gómez, 2006; *A. tembe* Casciotta, Gómez & Toresani, 1995; *A. scitulus* Rícan & Kullander, 2003; *A. forquilha* Rícan & Kullander, 2008; *A. guarani* Rícan & Kullander, 2008; *A. minuano* Rícan & Kullander, 2008; *A. charrua* Rícan & Kullander, 2008; and *A. ribeirae* Ottoni, Oyakawa & Costa, 2008. All of them described to the rio Uruguay and rio Paraná drainages, except for *A. ribeirae*, endemic from rio Ribeira do Iguape basin, southeast of Brazil (Ottoni et. al. 2008). Nine other undescribed species are known from the southeastern Brazil, and will be published soon (Ottoni & Costa in press).

A new species of *Australoheros* is herein described from small tributaries of the upper rio das Antas, rio Jacuí drainage, Araucárias plateau. This region is located in the northeastern State of Rio Grande do Sul, in a altitude of about 700 to 1000 m above sea level, and is characterized by the occurrence of rivers with rapids.

Materials and Methods

Material is deposited in **CIMC**, divisão de Fauna, Grupo Especial de Estudo e Proteção do Ambiente Aquático do Rio Grande do Sul, Rio Grande do Sul; **MCP**, Museu de ciências e tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Pontifícia Universidade Católica do Rio Grande do Sul, Rio Grande do Sul; **MZUSP**, Museu de Zoologia, Universidade de São Paulo, São Paulo, and **UFRJ**, Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro. Measurements and counts follow Rícan & Kullander (2003), with addition of upper and lower jaw length, head depth (a vertical measurement of head along the posterior margin of orbit), predorsal length (measurement from the end of the snout to the base of the first dorsal-fin spine), prepelvic length (measurement from the end of the snout to the base of pelvic fins), dorsal-fin and anal-fin base length, pelvic-fin spine length, last anal-fin spine length and caudal-fin length; and number of pelvic-fin spines, pelvic-fin rays, caudal-fin rays, ribs, scale series of dorsal-fin origin (scale series between the upper lateral line and the origin of dorsal fin), scale series of anal-fin origin (scale series between the upper lateral line and the origin of anal fin), Number of scales on superior lateral line end to dorsal-fin series (scales series between the end of upper lateral line and the dorsal-fin), caudal peduncle scale series (scales series on a vertical of the middle of caudal peduncle), and proximal radials on dorsal-fin base. Measurements are presented as percentages of standard length (SL), except for those related to head morphology, which are expressed as percentages of head length (HL) (except for the snout length SL that is a percentage of SL). Measurements were taken on the left side of each specimen with digital calipers under a binocular microscope. Osteogical studies were made on cleared and counterstained (C&S) specimens prepared according to Taylor & Van Dyke (1985). Vertical bars are grouped into trunk bars and head bars, numbered from the caudal-fin to the snout. Spots are similarly numbered. Comparisons with *A. tembe*, *A. kaaygua* Casciotta, *A. charrua* and *A. guarani* were based on literature. Comparisons with *A. facetus*, *A. forquilha*, *A. minuano*, *A. ribeirae* and *A. scitulus* were based on examined material and literature.

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Fig. 1. *Australoheros taura*, sp. n.; Holotype, UFRJ 7574, 65.4 mm SL; Brazil, Rio Grande do Sul: rio Jacuí basin: rio das Antas.

Comparative material. *Australoheros facetus*: Uruguay: UFRJ 7596, 8, 32.3-95.7, bañado Higoeritas, Nueva Palmira; Ringuelet.

Australoheros cf. *facetus*: Rio Grande do Sul: CIMC 8002, 3, 106.5-119.2 mm SL; sanga dos Trilhos tributary to arroio Santa Bárbara, Município de Pelotas; M. M. Cheffe, F. L. Silveira & D. Alessandretti, 6.Dec. 2000; CIMC 6260, 5, 109.3-120.1 mm SL; lagon near the Sr. Fetter farm, Município de Turuçu; M. M. Cheffe, M. M. Burns & G. N. Maurício, 18 Oct. 1999.

Australoheros ribeirae: Estado de São Paulo: MZUSP 42289, 1, 43.7 mm SL, lagon near the Sr. Celso farm, road Sete Barras – EL Dorado; M. Damato & O. Oyakawa, 11. Mar. 1990; MZUSP 40016, 4, 19.7-46.6 mm SL, river tributary to rio São Lourenço, Município de Miracatu; O. Oyakawa, F. Langeani, V. Silva & Z. Vasconcelos, 30. Jan. 1988; MZUSP 50677, 1, 33.9 mm SL, river on road Jacupiranga – EL Dorado, Município de El Dorado; L. Travassos & L. Travassos Filho, 16. Sep. 1977; MZUSP 40042, 8, 12.3-61.3 mm SL; lagon near rio São Lourenço, Município de Juquiá; O. Oyakawa, F. Langeani & V. Silva, 30 Jan. 1988; MZUSP 2582, 1, 57.6 mm SL; Município de Iguape, E. Garbe, 1910; MZUSP 70032, 2, 46.5-61.8 mm SL, lago Mimoso, rio Mimoso, rio Juquia tributary, Município de Juquiá; O. Oyakawa, Akama, Nolasco & Paixão, 16. Jun. 2001; MZUSP 2587, 1, 73.4 mm SL; Poço Grande stream, rio Juquiá tributary, Município de Juquiá; Moenkhaus, 1898; MZUSP 3270, 10, 24.2-52.8 mm SL; Poço Grande stream, rio Juquiá tributary, Município de Juquiá; Travassos, 1940; MZUSP 50679, 10, 17.2-29.8 mm SL; Poço Grande farm, Município de Juquiá; W. Bochermann & O. Schultz, 7. Jun. 1953; MZUSP 70011, 2, 36.7-75.5 mm SL; rio Pariquera-Mirim, Município Paraquera-Açú; O. Oyakawa, Akama, Nolasco & Paixão, 15. Jun. 2001; UFRJ 5368, 3 C&S, 32.6-50.5 mm SL; Município de Sete Barras; F. Autran & O. Oyakawa, 27. Oct. 1998; and UFRJ 5369, 1 C&S, 29.7 mm SL; Pedra do Largo, Município de Juquiá; F. Autran & O. Oyakawa, 28. Oct. 1998.

Australoheros scitulus: Rio Grande do Sul: CIMC 10106, 2, 115.8-120.3 mm SL; rio Cati tributary to rio Quaraí, Município de Quaraí, L. R. Vilagran, 21 Jan. 2007.

Australoheros minuano: Rio Grande do Sul: CIMC 10110, 5, 68.5-88.2 mm SL; arroio Macarrão tributary to arroio Quaraí-Mirim, Município de Quaraí, L. R. Vilagran, 23 Jan. 2007.

Australoheros forquilha: Rio Grande do Sul: CIMC 12458, 8, 112.4-129.1 mm SL; river tributary to rio Apuaê, Município de São João da Urtiga; F. L. Oliveira & L. C. Sobral Jr., 16 Oct. 2007.

Australoheros taura, spec. nov.
(Fig. 1)

Holotype. UFRJ 7574, 65.4 mm SL; Brazil: Estado do Rio Grande do Sul: Município de Bom Jesus: near arroio Barreiro (28°48'S 50°30'W); M. Cheffe & L. Rosa, 6 Apr 2004.

Paratypes. Brazil: Estado do Rio Grande do Sul: Município de Bom Jesus: UFRJ 7576, 17 ex., 20.6-60.0 mm SL, collected with holotype; MCP 42363, 4 ex., 35.3-42.5 mm SL, collected with holotype; UFRJ 7575, 4 ex. (C&S), 25.9-40.9 mm SL, collected with holotype; UFRJ 7586, 1 ex., 107.2 mm SL, rio das Antas, Passo do Gabriel; M. Cheffe & L. Rosa, 13 Dec 2004; UFRJ 7587, 3 ex., 78.7-99.9 mm SL, arroio Espulli, arroio Pinheiro Alto basin, road Bom Jesus-Vacaria; M. Cheffe & L. Rosa, 12 Dec 2004; CIMC 12308, 2 ex., 73.0-87.2 mm SL, arroio Barreiro, near Passo do Gabriel; M. Cheffe, L. Rosa & R. Baltar, 28 Mar 2005; Município de São Francisco de Paula: CIMC 12102, 1 ex., 124.5 mm SL, rio das Antas,

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dan of PCH Passo do Meio; M. Cheffe, L. Rosa & R. Baltar, 12 Nov 2004; CIMC 12326, 2 ex. (C&S), 79.0-80.4 mm SL, arroio Barreiro, near Passo do Gabriel; M. Cheffe, L. Rosa & R. Baltar, 28 Mar 2005.

Diagnosis. *Australoheros taura* differs from *A. ribeirae* and some undescribed species from southeastern Brazil by having more caudal vertebrae (13 vs. 12) and fewer precaudal vertebrae (13 vs. 14). In addition, it differs from *A. ribeirae* by having a deeper body (body depth 40.1-42.4 % SL vs. 47.4-51.3 % SL) and lower preorbital depth (53.1-58.9 % HL vs. 64.2-73.3 HL). *Australoheros taura* differs from all species of the genus (except *A. minuano*) by having pink to red dominant males; from *A. forquilha*, *A. tembe*, *A. scitulus* and *charrua* by having fewer caudal vertebrae (13 in *A. taura* vs. 14 in *A. scitulus* and *A. charrua*, and 14-15 in *A. forquilha* and *A. tembe*); from *A. charrua*, *A. kaaygua* *A. minuano*, *A. guarani*, *A. facetus* and *A. scitulus* by having a longer snout (14.4-17.3 % SL / mean 15.4 % SL in *A. taura* vs. 8.0-9.5 % SL / mean 8.5 % SL in *A. charrua*; 7.8-11.4 % SL / mean 9.5 % SL in *A. kaaygua*; 9.2-11.7 % SL / mean 10.6 % SL in *A. minuano*; 8.9-10.5 % SL / mean 9.8 % SL in *A. guarani*; 9.3-12.6 % SL / mean 11.2 % SL in *A. facetus*; and 7.3-12.2 % SL / mean 9.6 % SL in *A. scitulus*); from *A. scitulus* and *A. forquilha* by not having dark marks on the side of head (vs. dark marks below the orbit in *A. forquilha* and dark marks on opercle in *A. scitulus* (Rícan & Kullander, 2008: fig. 5)); from *A. facetus* and *A. minuano* by having a very narrow caudal-fin base spot (vs. rounded spot) (Rícan & Kullander, 2008); from *A. facetus* by having a more slender head (head depth 77.4-82.7 % HL in *A. taura* vs. 96.1-98.3 % HL in *A. facetus*) and lower jaw slightly shorter than upper one (vs. lower jaw projecting in front of the upper jaw); from *A. guarani* by having a more slender body (body depth 40.1-42.4 % SL vs. 46.2-49.9 % SL / mean 48.1 % SL) and longer caudal peduncle (caudal peduncle length 9.4-11.1 % SL vs. 6.9-8.5 % SL / mean 7.8 % SL); from *A. kaaygua* by having a visible caudal spot (vs. not visible caudal spot (Rícan & Kullander, 2008)) and more anal-fin rays (8 vs. 6-7); and from *A. tembe* by having a longer predorsal length (47.4-50.0 % SL / mean 48.5 % SL vs. 31.0-40.0 % SL / mean 35.4 % SL) and fewer total vertebrae (26 vs. 27-28).

Description

Morphometric data are summarized in Table 1, meristic data in Table 2. Body elongated and laterally compressed. Dorsal profile slightly obtuse from snout to caudal peduncle origin. Dorsal-fin base

Table 1. Morphometric data of *Australoheros taura*. H, holotype; n = 15.

	H	Range	Mean
Standard length (mm)	65.4	20.6-107.2	–
Percentages of SL			
Body depth	41.6	40.1-42.4	41.4
Predorsal length	47.4	47.2-50.2	48.5
Prepelvic length	43.0	43.0-45.8	44.8
Caudal peduncle depth	14.5	14.5-16.8	15.5
Caudal peduncle length	11.0	9.4-11.1	9.9
Dorsal-fin base length	56.9	54.5-57.1	55.4
Anal-fin base length	28.1	25.0-28.3	26.7
Pelvic fin spine length	16.5	14.7-16.9	15.9
Pelvic-fin length	31.0	25.7-32.0	29.9
Last dorsal-fin spine length	18.0	14.4-18.0	16.4
Last anal-fin spine length	15.6	14.2-16.9	15.5
Caudal-fin length	29.2	28.6-33.2	30.3
Pectoral-fin length	28.9	26.6-30.9	29.3
Snout length in SL	17.3	14.4-17.3	15.4
Percentages of HL			
Head depth	82.7	77.4-82.7	79.5
Orbital diameter	28.5	28.5-36.2	33.5
Snout length in HL	43.5	36.3-43.5	37.9
Head width	52.3	46.9-52.7	50.8
Interorbital width	42.7	39.4-42.7	41.6
Preorbital depth	58.5	53.1-58.9	55.2
Upper jaw length	32.3	27.4-32.3	30.3
Lower jaw length	25.4	20.1-25.4	22.9

Table 2. Meristic data of *Australoheros taura*. PC, procurrent rays.

	Range	n
Dorsal-fin spines	16-17	6
Dorsal-fin rays	9-11	6
Anal-fin spines	6-7	6
Anal-fin rays	8	6
Pelvic-fin spines	1	6
Pelvic-fin rays	5	6
Caudal-fin rays	22 (PC 3+8+8+PC 3)	6
Pectoral-fin rays	13-15	6
Gill-rakers on first branchial arch	6-7+15-16	6
Total vertebrae	26	6
Rib pairs	10-11	6
Precaudal vertebrae	13	6
Caudal vertebrae	13	6
Scales of upper lateral line serie	16-17	29
Scales of lower lateral line serie	8-10	29
Scales of longitudinal serie	25-28	29
Scales of dorsal-fin origin serie	4	29
Scales of superior lateral line end to dorsal-fin	3	29
Scales of anal-fin origin serie	8	29
Scales from the peduncular serie	7	23
Proximal radial on dorsal-fin base	24-25	6
Proximal radial on anal-fin base	12-13	6

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slightly curved, progressively descending from origin to end. Ventral profile slightly curved. Caudal peduncle approximately straight ventrally and dorsally. Head profile between tip of snout and orbit straight, slightly concave in front of orbit. Nostrils in the middle between the tip of snout and anterior margin of orbit. Opercle not serrated.

Mouth terminal, distal tip of maxilla not reaching vertical tangent to anterior margin of orbit. Lower lip fold covering distal portion of upper lip. Lower jaw slightly shorter than upper one. Jaw teeth caniniform, slightly curved to mouth. Teeth hyaline, red at tip. Outer row teeth increasing in size symphysiad, upper jaw anterior teeth longest, lower jaw anterior teeth subequal. Head and snout shape similar to *A. tembe* (Rícan & Kullander 2008: Fig. 12), with the most elongated snout of the genus (about 27.9 mm HL or 15.4 % mm SL).

Trunk and caudal peduncle covered with ctenoid scales. Chest scales ctenoid. Opercle, preopercle, subopercle and interopercle covered with cycloid scales. Cheek scales forming 4-6 oblique series. Scales on head and chest not distinctly smaller than on flanks. Two scales between lateral lines.

Dorsal-fin origin placed at level of posterior margin of opercle. Dorsal fin rounded, pointed on posterior region. Tip of dorsal fin reaching vertical through middle of caudal fin. Dorsal and anal fins with ctenoid scales on basal third. Dorsal fin scaled from 12th or 13th spines to end. Anal fin rounded anteriorly, pointed posteriorly. Tip of anal fin reaching vertical through middle of caudal fin. First anal fin spine placed opposite to 11th or 12th dorsal-fin spine. Caudal fin long with distal margin curved. Caudal fin with smaller ctenoid scales covering about 25 % of the fin. Pectoral fin with a rounded tip, extending to about first anal-fin spine or vertical trunk bar 4. Pectoral-fin base on vertical through third spine of dorsal-fin. Pelvic fin pointed. Pelvic-fin base on vertical through fourth spine of dorsal fin. Tip of pelvic fin reaching vertical through second spine of anal fin.

Microbranchiospines present only on external side of ceratobranchial 4. Ceratobranchial 5 partly sutured medially and relatively robust, with 6-7 teeth along midline and 22-25 along posterior margin. Posterior teeth tend to be laterally more compressed. Posterior and medial teeth larger than lateral and anterior teeth. Posterior teeth unicuspid, curved forward. Large laterally compressed teeth bicuspid, with second cusp raising anteriorly the shelf.

Coloration in alcohol (Fig. 1)**.** Side of body light brown with seven vertical trunk dark brown bars between caudal peduncle and posterior margin of opercle; bars 1-5 continuous, bars 6-7 interrupted above longitudinal stripe. Trunk bars usually forked ventrally (more often on trunk bars 4-5). Trunk bars 2-4 dorsally inclinated posteriorly. Trunk bar 5 forked dorsally and usually connected diagonally to trunk bar 6, above upper lateral line. Trunk bar 6 interrupted between longitudinal stripe and upper lateral line. Trunk bar 7 not forked dorsally and interrupted above longitudinal stripe. Trunk bar 1 with arch form. Three dark spots; first spot on caudal-fin base, through lower lateral line; caudal-fin base spot very narrow (like *A. scitulus* group); second spot on junction between longitudinal stripe and trunk bar 4; third spot on posterior margin of opercle and longitudinal stripe. Interrupted brown longitudinal stripe from trunk bar 1 to preopercle, lighter and inconspicuous between trunk bars 1-4, darker between trunk bar 4 and head bar 1.

Side of head with three brown bars, all continuous; head bar 1 on post-orbital region, close to eye, head bars 2-3 on supra-orbital zone, between eyes; head bar 2 on posterior orbital margin touching head bar 1 just above preopercle; head bar 3 curved and directed to snout. Head darker than trunk, especially on dorsal part between head bars 2-3. Side of head without dark marks.

Dorsal fin light brown, slightly invaded by dark brown trunk bars. Anal fin color pattern similar to dorsal fin. Caudal fin light brown, darker near caudal peduncle. Pectoral fin light brown, pelvic fin just darker.

Coloration in vivo. Side of body light brown, usually changing to dark brown, to yellowish brown, or to gray; seven dark brown vertical trunk bars often changing from light brown to black. Three black spots. Green or blue iridescence overall body coloration, usually on flank, especially on trunk bars and spots, more concentrated near longitudinal stripe. Usually trunk bars lighter than longitudinal stripe. Body ventrally yellow to purple.

Side of head light brown, often changing to darker or lighter brown, to yellow; three bars with same coloration as trunk bars. Snout usually with purple iridescence. No dark marks on eye, iris with a yellow ring.

Dorsal fin yellowish to brownish hyaline, invaded by trunk bars, usually with purple iridescence. Anal fin with same coloration as dorsal fin. Caudal fin yellowish usually with purple iridescence. Pelvic fin usually with yellow or purple iridescence, darker near spine. Pectoral fin hyaline.

During reproductive period, the region corresponding to rays of dorsal, anal and caudal fins becomes pink to red, more concentrated on posterior margins of fins, in adult dominant males. Trunk usually turns pink to red.

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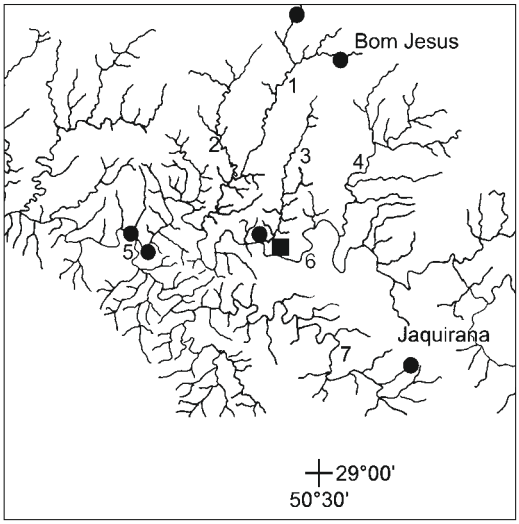

Fig. 2. Collecting localities of *Australoheros taura*, sp. n. A dot may cover more than one collecting site. ■, type locality; **1**, Arroio João Souza; **2**, Arroio Pinheiro Alto; **3**, Arroio Barreiro; **4**, Arroio Moraes; **5**, PCH Passo do Meio dam; **6**, Rio das Antas; **7**, Rio Tainhas.

Habitat and Ecological Notes. *Australoheros taura* has been collected in small, shallow rivers with clear water and moderate water current. The bottom is formed by rocks, loose stones and sand, with few macrophytes. Grass or other vegetation is usually present at the margins. Water may be cold in midwinter and air temperature is often below zero centigrade degrees. Other species collected along with *A. taura* are *Characidium* sp., *Astyanax brachypterygium* Bertaco & Malabarba, 2001, *Astyanax henseli* Melo & Buckup, 2006, *Bryconamericus patriciae* Silva, 2004, *Hyphessobrycon luetkenii* (Boulenger, 1887), *Oligosarcus* sp., *Trichomycterus* sp., *Ancistrus* cf. *brevipinnis*, *Eurycheilichthys* sp., *Hemiancistrus punctulatus* Cardoso & Malabarba, 1999, *Pareiorhaphis hystrix* (Pereira & Reis, 2002), *Rineloricaria cadeae* (Hensel, 1868), *Rineloricaria* sp., *Chasmocranus* sp., *Rhamdella eriarcha* (Eigenmann & Eigenmann, 1888), *Rhamdia* sp., *Gymnotus* cf. *inaequilabiatus*, *Cnesterodon brevirostratus* Rosa & Costa, 1993, *Jenynsia eirmostigma* Ghedotti & Weitzman, 1995, *Crenicichla* cf. *maculata* and *Geophagus* sp.

Distribution. Upper rio das Antas basin, rio Jacuí drainage, Laguna dos Patos system, Rio Grande do Sul, Brazil (Fig. 2).

Etymology. From the southern Brazilian idiomatic expression *taura*, meaning brave, because of its territorial and aggressive behavior and the adverse habitat in which it occurs.

Discussion

Australoheros taura is endemic to the upper rio das Antas basin, Araucárias plateau, a region located about 700 to 1000 m above sea level, characterized by rivers with rapids. This is an uncommon region for a species of *Australoheros*, usually inhabiting lowland rivers with still waters.

This new species has trunk bars 5-6 interrupted, a derived condition proposed as diagnostic for *Australoheros* by Rícan & Kullander (2006), thus justifying its inclusion in the genus. It also has a distinctive color patter characterized by the trunk bar seven not dorsally forked, trunk bar 5 dorsally forked and trunk bars 2-6 usually forked ventrally (Fig. 1). This color pattern is distinct from that undescribed species and *A. ribeirae*, which is characterized by the trunk bar seven dorsally forked, trunk bar 5 not dorsally forked and vertical trunk bars never forked ventrally (Ottoni et. al. 2008). *Australoheros taura* has the longest snout among all species of the genus [with its head very similar to *A. tembe*, because of its long snout and a deeper head (Rícan & Kullander 2008: Fig. 12)]. *Australoheros taura* is allopatric to all other congeners.

Rícan & Kullander (2006) mentioned two undescribed species (*A.* cf. *facetus* and *A.* sp. *jacui*). *Australoheros taura* is distinguished from *A.* sp. *jacui* by having more proximal radial on the anal-fin base (12-13 vs. 11), and from *A.* cf. *facetus* by having a very narrow caudal base spot (vs. distinct, rounded spot). Based on comparison with the phylogenetic tree proposed by Rícan & Kullander (2006), *A. taura* appears to be more closely related to *A. kaaygua*, *A. charrua* and *A. scitulus* group, as all share three apomorphic features (four scales of dorsal-fin origin series, 12-13 proximal radial and caudal-fin base spot very narrow). This is surprising, because although *A. taura* and *A.* sp. *jacui* are recorded from the same river basin (rio Jacuí basin), they appear not closely related, since the latter species does not exhibit the three derived conditions.

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Buchbesprechungen

9. Görner, M. (Hrsg.): Atlas der Säugetiere Thüringens. Biologie – Lebensräume – Verbreitung – Gefährdung – Schutz. – Arbeitsgruppe Artenschutz Thüringen e.V. und Landesjagdverband Thüringen e.V., Jena, 2009. ISBN 978-3-00-026905-9. 279 Seiten, zahlreiche Abbildungen, Tabellen und Verbreitungskarten.

Anders als in vielen anderen europäischen Staaten werden Tier- und Pflanzenarten in Deutschland traditionsgemäß nicht bundesweit kartiert, sondern auf der Ebene von Bundesländern, Regierungsbezirken oder Landkreisen. Dies mag seine Ursache in der föderalen Struktur der BRD und der damit zusammenhängenden Kompetenzverteilung im Natur- und Artenschutz haben. Auch bei den Säugetieren erfolgen faunistische Bestandsaufnahmen normalerweise innerhalb der Grenzen einzelner Bundesländer. So hat Baden-Württemberg vor wenigen Jahren eine umfangreiche Säugetierfauna vorgelegt, für einen Atlas der Säugetiere Sachsens wird seit mehreren Jahren Material gesammelt, und in Bayern sind zumindest die Mäuse und Spitzmäuse landesweit erfasst und publiziert.

Mit dem "Atlas der Säugetiere Thüringens" wird nun eine weitere regionale Lücke geschlossen und ein Mosaikstein zur Erfassung der mitteleuropäischen Säugetierfauna vorgelegt.

Das informative, übersichtliche und mit Abbildungen und Grafiken reich ausgestattete Buch stellt in 71 Artkapiteln alle in Thüringen frei lebenden Säugetiere vor und führt alle bekannten Daten zu ihrer Biologie, Verbreitung, ihrem Lebensraum, möglichen Gefährdungsursachen und Schutzmaßnahmen auf. Für jede Art gibt es eine detaillierte Verbreitungskarte auf der Basis von Messtischblattquadranten, ein oder mehrere Lebendfotos und eine Tabelle mit dem Jahresverlauf biologischer Ereignisse (z. B. Paarungszeit, Geburtszeit usw.). Lediglich für die Fledermäuse waren keine Rasterverbreitungskarten verfügbar, dafür wird hier das Vorkommensgebiet in Deutschland flächenhaft dargestellt. Besonders hervorzuheben ist, dass die typischen Lebensräume der einzelnen Arten nicht nur im Text beschrieben, sondern zusätzlich mit Schemazeichnungen charakterisiert werden. Eine weitere Grafik gibt Auskunft darüber, in welchen nationalen und internationalen Gesetzeswerken und Verordnungen die betreffende Art aufgeführt ist.

In einem einleitenden Kapitel werden ausgewählte Landschafts- und Naturräume Thüringens vorgestellt, denen besondere Bedeutung als Lebensraum für bestimmte Säugetierarten zukommt. Bei Betrachtung der zugehörigen Fotos wird deutlich, welchen Einfluss der Mensch auf die Gestaltung der Kulturlandschaft hatte und noch hat und welche Konsequenzen sich daraus für die Beurteilung von Lebensräumen ergeben. Ausführlich wird auch die Veränderung der Säugetierfauna Thüringens vom Pleistozän bis heute dargestellt. Hier sind vor allem die umfangreichen Tabellen hervorzuheben, in denen für die Epochen vom Unterpleistozän bis zum frühen Holozän alle in Thüringen nachgewiesenen Säugetierarten aufgelistet und auch die jeweils zugehörigen Fundstellen genannt und kommentiert werden.

Das Buch ist das Ergebnis der Zusammenarbeit zahlreicher Einzelpersonen, naturkundlicher Sammlungen, Institute und Fachbehörden, auch aus dem jagdlichen und forstwirtschaftlichen Bereich, die durch die Bereitstellung von Unterlagen und Beobachtungsdaten wesentlich dazu beigetragen haben, dass die Säugetierfauna Thüringens derart ausführlich, aktuell und kompetent dargestellt werden konnte. Besondere Anerkennung verdient aber der Herausgeber, der als Leiter der "Arbeitsgruppe Artenschutz Thüringen e.V." einem weiten Personenkreis als engagierter Natur- und Landschaftsschützer bekannt ist. Seine Handschrift ist das ganze Buch hindurch deutlich zu erkennen, vor allem, wenn es um die Behandlung artenschutzrelevanter Aspekte geht. Der "Atlas der Säugetiere Thüringens" soll eben nicht nur den Status quo der thüringischen Säugetierfauna dokumentieren, sondern darüber hinaus zum Verständnis wildtierökologischer Zusammenhänge in der Kulturlandschaft beitragen und so die wissenschaftlichen Grundlagen für gezielte Maßnahmen des Säugetierschutzes liefern. R. Kraft

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