



<http://dx.doi.org/10.11646/zootaxa.3794.3.10>

<http://zoobank.org/urn:lsid:zoobank.org:pub:DDBA51E5-3E7F-41E7-8A97-D4D7F12430A0>

***Astyanax douradilho*, a new characid fish from the rio Tramandaí system, southern Brazil (Characiformes: Characidae)**

VINICIUS A. BERTACO

Laboratório de Ictiologia, Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul. Av. Dr. Salvador França, 1427, 90690-000 Porto Alegre, RS, Brazil. E-mail: vbertaco@gmail.com

Abstract

Astyanax douradilho, new species, is described from the rio Tramandaí system, coastal drainage of Rio Grande do Sul State, Brazil. The new species is distinguished from its congeners by possessing 37–39 perforated scales along the lateral line, 3–5 maxillary tricuspid teeth, 22–24 branched anal-fin rays, absence of a conspicuous dark stripe from humeral region to caudal peduncle, two vertically elongated humeral spots, head length (26.0–29.9% of standard length), upper jaw length (43.8–50.6% of head length), and snout length (23.0–28.6% of HL).

Key words: Neotropical fish, Atlantic Forest, Rio Grande do Sul, rio Maquiné, Lambari-escuro

Resumo

Astyanax douradilho, espécie nova, é descrita do sistema do rio Tramandaí, drenagem costeira do estado do Rio Grande do Sul, Brasil. A espécie nova distingui-se das suas congêneres pela presença de 37–39 escamas perfuradas na linha lateral, 3–5 dentes tricuspídeos no maxilar, 22–24 raios ramificados na nadadeira anal, ausência de uma faixa escura entre a região umeral e o pedúnculo caudal, duas manchas umerais verticalmente alongadas, comprimento da cabeça (26,0–29,9% do comprimento padrão), comprimento do maxilar (43,8–50,6% do comprimento da cabeça) e comprimento do focinho (23,0–28,6% do CC).

Introduction

The genus *Astyanax* Baird & Girard is a speciose characid genus, comprising 140 valid species distributed from southern United States to central Argentina (Lima *et al.* 2003, Eschmeyer 2013). According to recent phylogenies *Astyanax* does not represent a monophyletic group (Mirande 2010; Javonillo *et al.* 2010; Oliveira *et al.* 2011), and so far it has been defined by a combination of characters proposed nearly a century ago by Eigenmann (1921, 1927): two rows of premaxillary teeth, five teeth in the inner premaxillary series, lateral line complete, adipose fin present, and caudal fin naked. Nevertheless, all these characters are also shared by other genera in the family Characidae.

The rio Tramandaí system is situated in the northeastern of Rio Grande do Sul State, and is divided into two subregions based on both geological origin and environmental characteristics: (1) the rios Maquiné and Três Forquilhas, located on the eastern coast of the steep edge of the Serra Geral, and (2) the lagoons sequentially interconnected situated on the Coastal Plain (Malabarba & Isaia 1992; Malabarba *et al.* 2013).

According to Lucena *et al.* (2013a,b), are recognized seventeen species of *Astyanax* from the rio Uruguay, laguna dos Patos, and rio Tramandaí drainages. During a revisionary study of the genus *Astyanax* from these basins, a new species was recognized from tributaries of the rio Maquiné, rio Tramandaí system, and it is herein described.

freshwater ecoregion Tramandaí-Mampituba as recently recognized by Abell *et al.* (2008). Although extensive collections have been made in the stream and river tributaries of the rio Tramandaí (Maquiné and Três Forquilhas rivers) and rio Mampituba basins in the last decade, *A. douradillo* was not recorded in any other locality.

According to Malabarba *et al.* (2013) the ichthyofauna of the rio Tramandaí system is divided in fish species found in the river valleys located in the Serra Geral Formation and in the lagoons of the coastal plain. *Astyanax douradillo* and at least 20 other species are restricted to the river valleys, indicating the existence of effective barriers separating these species.

Acknowledgments

I would like to thank Fernando G. Becker (UFRGS) for collection data and Ricardo Ott (FZBRS) for assistance with the figure of the teeth. This paper benefited from comments and criticisms by Fernando R. Carvalho (DZSJRP) and two anonymous referees. VAB was financed by a postdoctoral fellowship from CNPq (Proc. 150042/2009-4), and FAPERGS (Proc. 0903014).

References

- Abell, R., Thieme, M.L., Revenga, C., Bryer M., Kottelat, M., Bogutskaya, N., Coad, B., Mandrak, N., Contreras-Balderas, S., Bussing, W., Stiassny, M.L.J., Skelton, P., Allen, G.R., Unmack, P., Naseka A., Ng, R., Sindorf, N., Robertson, J., Armijo, E., Higgins, J.V., Heibel, T.J., Wikramanayake, E., Olson, D., López, H.L., Reis, R.E., Lundberg, J.G., Sabaj-Pérez, M.H. & Petry, P. (2008) Freshwater Ecoregions of the World: A new map of biogeographic units for freshwater biodiversity conservation. *BioScience*, 58, 403–414.
<http://dx.doi.org/10.1641/b580507>
- Bertaco, V.A. & Lucena, C.A.S. (2006) Two new species of *Astyanax* (Ostariophysi: Characiformes: Characidae) from eastern Brazil with a synopsis of the *Astyanax scabripinnis* species complex. *Neotropical Ichthyology*, 4, 53–60.
<http://dx.doi.org/10.1590/s1679-62252006000100004>
- Bertaco, V.A. & Lucena, C.A.S. (2010) Redescription of the *Astyanax obscurus* (Hensel, 1870) and *A. laticeps* (Cope, 1894) (Teleostei: Characidae): two valid freshwater species originally described from rivers of Southern Brazil. *Neotropical Ichthyology*, 8, 7–20.
<http://dx.doi.org/10.1590/S1679-62252010000100002>
- Burns, J.R. & Weitzman, S.H. (1996) Novel Gill-derived gland in the male swordtail characin, *Corynopoma riisei* (Teleostei: Characidae: Glandulocaudinae). *Copeia*, 1996, 627–633.
- Eigenmann, C.H. (1921) The American Characidae. Part 3. *Memoirs of the Museum of Comparative Zoology*, 43, 209–310.
- Eigenmann, C.H. (1927) The American Characidae. Part 4. *Memoirs of the Museum of Comparative Zoology*, 43, 311–428.
- Eschmeyer, W.N. (Ed.) (2013) Catalog of Fishes. Electronic version, 15 November 2013. California Academy of Sciences. Available from: <http://research.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (accessed 10 December 2013)
- Fink, W.L. & Weitzman, S.H. (1974) The so-called cheirodontin fishes of Central America with descriptions of two new species (Pisces: Characidae). *Smithsonian Contributions to Zoology*, 172, 1–46.
<http://dx.doi.org/10.5479/si.00810282.172>
- Garutti, V. & Bristki, H.A. (2000) Descrição de uma nova espécie de *Astyanax* (Teleostei: Characidae) da bacia do alto rio Paraná e considerações sobre as demais espécies do gênero. *Comunicações do Museu de Ciências e Tecnologia, Pontifícia Universidade Católica do Rio Grande do Sul, Série Zoologia*, 13, 65–88.
- Javonillo, R., Malabarba, L.R., Weitzman, S.H. & Burns, J.R. (2010) Relationships among major lineages of characid fishes (Teleostei: Ostariophysi: Characiformes), based on molecular sequence data. *Molecular Phylogenetics and Evolution*, 54, 498–511. <http://dx.doi.org/10.1016/j.ympev.2009.08.026>
- Lucena, C.A.S., Bertaco, V.A. & Berbigier, G. (2013a) A new species of *Astyanax* from headwater streams of southern Brazil (Characiformes: Characidae). *Zootaxa*, 3700 (2), 226–236.
<http://dx.doi.org/10.11646/zootaxa.3700.2.2>
- Lucena, C.A.S., Castro, J.B. & Bertaco, V.A. (2013b) Three new species of *Astyanax* from river drainages of southern Brazil (Characiformes: Characidae). *Neotropical Ichthyology*, 11, 537–552.
<http://dx.doi.org/10.1590/S1679-62252013000300007>
- Malabarba, L.R., Carvalho Neto, P., Bertaco, V.A., Carvalho, T.P., Ferrer, J. & Artioli, L.G.S. (2013) *Guia de identificação dos peixes da bacia do rio Tramandaí*. Via Sapiens, Porto Alegre, 140 pp.
- Malabarba, L.R. & Isaia, E.A. (1992) The fresh water fish fauna of the rio Tramandaí drainage, Rio Grande do Sul, Brazil, with a discussion of its historical origin. *Comunicações do Museu de Ciências e Tecnologia, Pontifícia Universidade Católica*

do Rio Grande do Sul, Série Zoologia, 5, 197–223.

- Melo, F.A.G. & Buckup, P.A. (2006) *Astyanax henseli*, a new name for *Tetragonopterus aeneus* Hensel, 1870 from southern Brazil (Teleostei: Characiformes). *Neotropical Ichthyology*, 4, 45–52.
<http://dx.doi.org/10.1590/S1679-62252006000100003>
- Mirande, J.M. (2010) Phylogeny of the family Characidae (Teleostei: Characiformes): from characters to taxonomy. *Neotropical Ichthyology*, 8, 385–568.
<http://dx.doi.org/10.1590/s1679-62252010000300001>
- Oliveira, C.A.M, Abilhoa, V. & Pavanelli, C.S. (2013) *Astyanax guaricana* (Ostariophysi: Characidae), a new species from the rio Cubatão drainage, Paraná State, Southern Brazil. *Neotropical Ichthyology*, 11, 291–296.
<http://dx.doi.org/10.1590/S1679-62252013000200007>
- Reis, R.E. & Schaefer, S.A. (1998) New cascudinhos from Southern Brazil: Systematics, Endemism, and Relationships (Siluriformes, Loricariidae, Hypoptopomatinae). *American Museum Novitates*, 3254, 1–25.
- Taylor, W.R. & Van Dyke, G.C. (1985) Revised procedures for staining and clearing small fishes and other vertebrates for bone and cartilage study. *Cybium*, 9, 107–119.