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Journal of species lists and distribution

Notes on Geographic Distribution

Pisces, Perciformes, Cichlidae, *Apistogramma borellii* (Regan, 1906): First record for state of Rio Grande do Sul, southern Brazil

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Abstract: This note extends the distribution of the dwarf cichlid fish *Apistogramma borellii*, and is the first record of the species, and the genus for the state of Rio Grande do Sul, southern Brazil, suggesting that the fish diversity of wetlands, although relatively high, is still poorly investigated in southern Brazil.

The South American genus *Apistogramma* Regan comprises small cichlid fishes (SL length less than 60 mm.) and is one of the most species rich genera of cichlids (Kullander 2003). Currently, there are almost 70 valid species within *Apistogramma* (Staeck and Schindler 2008), and many undescribed species are recognized (Kullander 2003). Approximately 36 species of the genus occur in Brazil (Buckup and Teixeira 2007), mostly in drainages of the Amazon River basin. According to literature there are no references of occurrence of the genus *Apistogramma* in watersheds of the state of Rio Grande do Sul in southern Brazil (Kullander 2003; Buckup *et al.* 2007).

Apistogramma borellii (Regan, 1906) whose type locality is Carandazinho drainage, upper Paraguay River, Mato Grosso in Brazil is distributed in Paraguay River basin, and its southernmost record is in Corrientes River, a tributary of the middle Parana River, Argentina (Kullander 1982, 2003).

Five specimens of *A. borellii* (Figure 1) (19.2 - 27.2 mm. SL) were collected on October 13th, 2002, in state of Rio Grande do Sul, southern Brazil (Figure 2A) at a small tributary floodplains of Uruguay River basin (Figure 2B), during a field trip of a research project conducted by the Laboratório de Ecologia e Conservação de Ecossistemas Aquáticos, Universidade do Vale do Rio dos Sinos, aimed to know the diversity of wetlands in southern Brazil.

Figure 1. *Apistogramma borellii* (MCP 44519) [27.2 mm. SL] captured in state of Rio Grande do Sul, southern Brazil.

Although a review of the species considering all its distribution has not been performed, no differences were found between samples collected from the Uruguay River (MCP 44519) and the Paraguay River drainage (MCP 11622).

The site of occurrence of the species (29°30'34.1" S, 56°43'11.8" W) located in municipality of Uruguaiana, district of João Arregui, is a permanent palustrine wetland area, covered by dense macrophytes vegetation (Figure 3).

The specimens collected by hand nets (D-shaped, 30 cm. width) in littoral zone of wetland, were fixed in 10 % formalin, later transferred into 70 % ethanol. Measurements were made with an electronic digital caliper reading to the nearest 0.1 mm., and material is vouched in Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre (MCP 44519).

As a complement of our record, we found a lot of *A. borellii* from Fundação Zoobotânica do Rio Grande do Sul (13 specimens - MCN 16749) obtained in Biological Reserve of Banhado São Donato, Itaqui municipality, RS, Uruguay River basin.

Apistogramma borellii is distinguished from *A. commbrae* (Regan, 1906), the other species of the genus with which it is often in sympatry in La Plata River basin, by the color (metallic blue) and by the lack of 2 or 3 longitudinal discontinuous thin bands in the lower half of the flank (Kullander 1982, Casciota *et al.* 2005).

Recently Zarucki *et al.* (2010) reported the occurrence of *A. borellii* in Uruguay River floodplains in Artigas Department, Uruguay. With this record, there are two species of *Apistogramma* in the Uruguay River basin, *A.*

borellii and *A. commbrae*. Probably *A. commbrae* also occurs in Rio Grande do Sul, because recent studies registered in that state species previously known from other localities, and hydrographic systems (Lanés *et al.* 2008; 2010).

This note extends the distribution of *A. borellii,* and is the first record of the species at the state of Rio Grande do Sul, southern Brazil. Finally this record suggests that the fish diversity of wetlands, although relatively high, is still poorly investigated in southern Brazil. This is an alarming fact, considering that these ecosystems are the habitat of endemic and endangered species (Volcan *et al.* 2009; 2010), and 90 % of wetland systems of the region have already been lost due to anthropogenic activities (Maltchik *et al.* 2010).

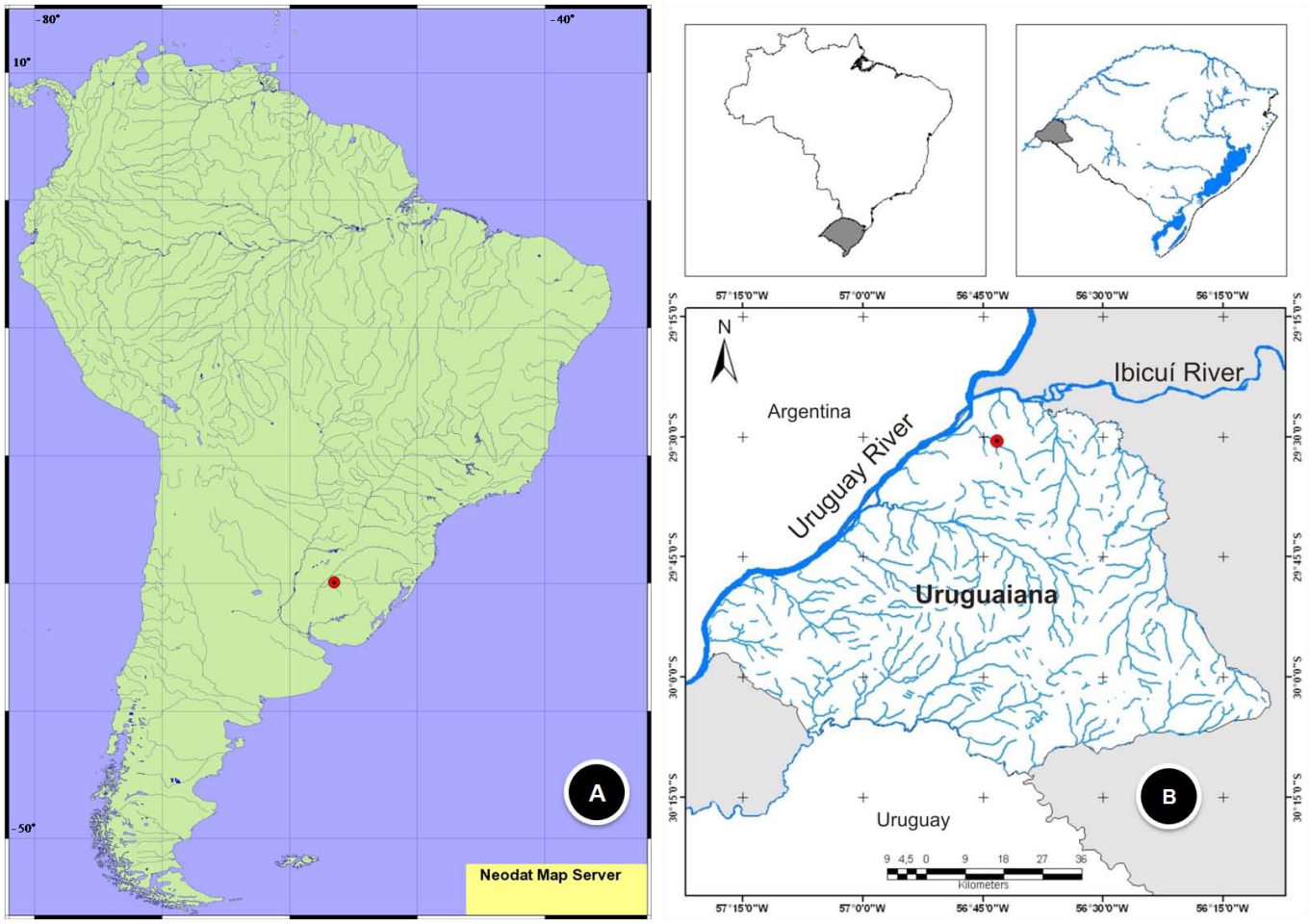

Figure 2. (A) Map showing the occurrence of *Apistogramma borellii* in Uruguay River basin, state of Rio Grande do Sul, southern Brazil in South American context. Modified from NEODAT (2010). (B) Map detailing the occurrence of the species in small tributary floodplains of Uruguay River basin, municipality of Uruguaiana, state of Rio Grande do Sul. Author: H. P. B. Neto. Source: Modified from Embrapa Monitoramento por Satélite (2005) and FEPAM (2005).

Figure 3. Sampling site of *Apistogramma borellii* at small tributary floodplains of Uruguay River basin, Rio Grande do Sul, southern Brazil.

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Literature Cited

Buckup, P.A. and J. M. S. Teixeira. 2007. Família Cichlidae; p. 139-148 *In* P.A. Buckup, N.A. Menezes and M.S. Ghazzi. (ed.). *Catálogo das espécies de peixes de água doce do Brasil*. Rio de Janeiro: Museu Nacional. 195 p.

Buckup, P.A., M.N. Aquino and M. S. Ghazzi. 2007. *Catálogo das espécies de peixes de água doce do Brasil*. Rio de Janeiro: Museu Nacional. 195 p.

Casciotta, J., A. Almirón and J. Bechara. 2005. *Peces del Iberá – Hábitat y diversidad*. Corrientes: Fundación Ecos. 244 p.

Embrapa Monitoramento por Satélite. 2005. *Sistemas Orbitais de Monitoramento e Gestão Territorial. Campinas: Embrapa Monitoramento por Satélite, 2005*. Database accessible at http://www.sat.cnpm.embrapa.br. Captured on 12 December 2009.

FEPAM. 2005. Fundação Estadual de Proteção Ambiental Henrique Luiz Roessler, RS. Biblioteca Digital. *Arquivos digitais para uso em SIG. Base cartográfica Digital do RS 1:250.000*. Database accessible at http://www.fepam.rs.gov.br/biblioteca/geo/bases_geo.asp. Captured on 12 December 2009.

Kullander, S. 1982. Cichlid Fishes from the La Plata Basin. Part IV. Review of the *Apistogramma* Species, with Description of a New Species (Teleostei, Cichlidae). *Zoologica Scripta* 11 (4): 307-313.

Kullander, S.O. 2003. Family Cichlidae; p. 605-654. *In* R.E. Reis, S.O. Kullander and C.J. Ferraris Jr. (ed.). *Checklist of the Freshwater Fishes of South and Central America*. Porto Alegre: Edipucrs. 729 p.

NEODAT. 2010. *Inter-Institutional Database of Fish Biodiversity in the Neotropics*. Electronic database accessible at http://www.neodat.org.. Captured on 16 March 2010.

Lanés, L.E.K., M.D.M. Burns, M. V. Volcan and A.C. Gonçalves. 2008. First

record of *Jenynsia onca* (Teleostei: Cyprinodontiformes: Anablepidae) for Laguna dos Patos hydrographic system, Rio Grande do Sul, Brazil. *Biociências* 16 (2): 160-161.

Lanés, L.E.K., L. Maltchik and C. A. S. Lucena. 2010. Pisces, Perciformes, Cichlidae, Laetacara dorsigera (Heckel, 1840): Distribution extension and first record for Uruguay River basin, and Rio Grande do Sul state, Southern Brazil. *Check List* 6 (1): 116-118.

Staeck, W. and I. Schindler. 2008. *Apistogramma erythrura* sp. n. – a new geophagine dwarf cichlid (Teleostei: Perciformes: Cichlidae) from the río Mamoré drainage in Bolivia. *Vertebrate Zoology* 58 (2): 197-206.

Volcan, M. V., L.E.K. Lanés and A.C. Gonçalves. 2009. Threatened fishes of the world: *Austrolebias nigrofasciatus* Costa and Cheffe 2001 (Cyprinodontiformes: Rivulidae). *Environmental Biology of Fishes* 86 (3): 319-320.

Volcan, M.V., L.E.K. Lanés and A.C. Gonçalves. 2010. Threatened fishes of the world: *Austrolebias univentripinnis* Costa and Cheffe 2005 (Cyprinodontiformes: Rivulidae). *Environmental Biology of Fishes* 87 (4): 443-444.

Zarucki, M., I. Gonzalez-Bergonzoni, F. Teixeira-de Mello, A. Duarte; S. Serra, F. Quintans and M. Loureiro. New records of freshwater fish for Uruguay. *Check List* 6 (2):191-194.

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The last citation (Maltchik *et al.* 2010), page 223, was not included in Literature Cited. The full reference is:

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We apologize for this error.

The authors.