

## First record of *Osteoglossum bicirrhosum* (Cuvier 1829) (Osteoglossiformes: Osteoglossidae) for the state of Maranhão, Brazil

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### Abstract

The present study represents the first published record of *Osteoglossum bicirrhosum* for the State of Maranhão, from the Tocantins River basin, Brazil. Herein we present voucher numbers for the testimony material, as well as the accurate location where the specimens were collected. It is important to emphasize that several previous freshwater fish surveys and studies conducted in the State of Maranhão state did not present voucher numbers nor detailed localities of recorded species.

**keywords:** Amazon, aruanã, Ichthyology, *Osteoglossum ferreirai*, Tocantins River basin

### Resumo

O presente estudo representa o primeiro registro publicado da espécie *Osteoglossum bicirrhosum* para o Estado do Maranhão, na bacia do Rio Tocantins, Brasil. Aqui nós disponibilizamos números de vouchers para o material testemunho, assim como a localidade precisa aonde os exemplares foram coletados. É importante ressaltar que muitos dos inventários e estudos anteriores relacionados à peixes de água doce conduzidos no Estado do Maranhão não apresentam números de vouchers nem as localidades detalhadas das espécies registradas.

**palavras-chave:** Amazônia, aruanã, ictiologia, *Osteoglossum ferreirai*, bacia do Rio Tocantins

### Introduction

*Osteoglossum* Cuvier 1829 is a member of the family Osteoglossidae, popularly known in English as osteoglossids or bonytongues (Nelson et al. 2016). Species of this family are distributed throughout the tropics, occurring in river systems of South America, Africa, and from Southeast Asia to northern Australia (Nelson et al. 2016, Fricke et al. 2021). Currently, the genus *Osteoglossum* comprises two valid species, both occurring in South America: *Osteoglossum ferreirai* Kanazawa 1966, popularly known as black arawana or aruanã preto, restricted to the Negro River basin in Brazil, and *Osteoglossum bicirrhosum* (Cuvier 1829), popularly known as aruana, aruanã or arawana, widely distributed along the Rupununi, Oyapock and Amazon River basins, in Brazil, Colombia, Ecuador, Guyana, French Guiana, and Peru (Ferraris 2003, Froese & Pauly 2019, Fricke et al. 2021).

During two expeditions carried out for environmental monitoring projects along the Carajás railway between the States of Pará and Maranhão, in Brazil, two specimens of *Osteoglossum bicirrhosum* were collected (fig. 1) in a tributary of the Tocantins River basin, in the State of Maranhão (fig. 2). The present study represents the first published occurrence of this species for the State of Maranhão.

## Material and Methods

Specimens were collected with 40 mm mesh waiting nets (fig. 1), fixed in formalin 10%, posteriorly conserved in 70% ethanol, and then deposited in the Coleção Ictiológica do Centro de Ciências Agrárias e Ambientais da Universidade Federal do Maranhão (CICCAA), and at the Museu Paraense Emílio Goeldi (MPEG). Morphological examination followed Escobar et al. (2013). Material was collected under permits number 02001.007241/2004-37 from IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis).

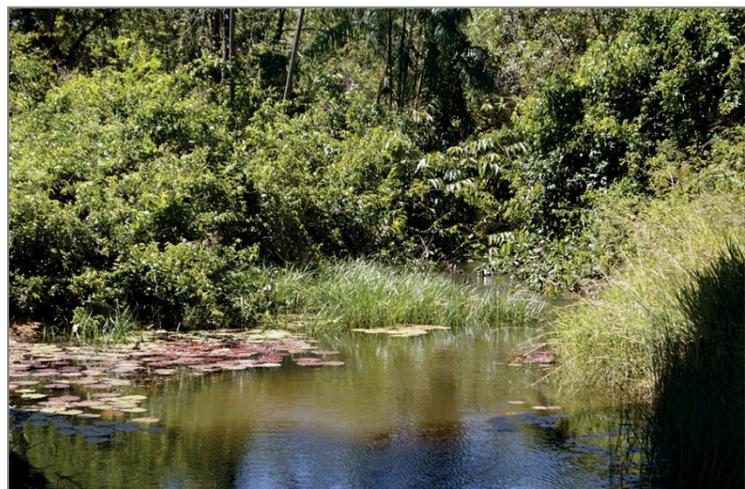


fig. 1. (left)  
*Osteoglossum bicirrhosum*; CICCAA 03485 in the moment of capture.

fig. 2. (above)  
collection site: Igarapé Jatobazinho stream, Tocantins river basin.

## Results

New record. Brazil: State of Maranhão: Municipality of Vila Nova dos Martírios (fig. 3): MPEG 020719 (1). Stream Igarapé Jatobazinho, Tocantins River basin (figs. 2, 3). 05°10'17.48"S 48°5'16.81"W. Coll.: Ferreira, 03.Jun.2011.  
CICCAA 03485 (1) (figs. 1, 4). Stream Igarapé Jatobazinho, Tocantins River basin (figs. 2, 3). 05°10'17.48"S 48° 5'16.81"W. Coll.: Anjos & Brito, 02.Oct.2014.

Identification. *Osteoglossum bicirrhosum* is easily differentiated from *O. ferreirai* by its lower dorsal (42 to 50 vs. 52 to 57 in *O. ferrera*) and anal-fin rays (49 to 58 vs. 61 to 66 in *O. ferrera*) counts. In addition, *O. bicirrhosum* possess fewer lateral-line scales (30 to 37), while *O. ferreirai* possess 37 to 40 (Escobar et al. 2013). The specimen CICCAA 03485 (fig. 4) was identified as *O. bicirrhosum* since its counts are within this species range: this specimen has 44 dorsal-fin rays, 50 anal-fin rays, and 35 lateral-line scales (right side; scales from left side are damaged near caudal fin). Specimen MPEG 020719 was identified by the MPEG staff (A. Ferreira).

## Discussion

*Osteoglossum bicirrhosum* is herein firstly recorded in a published work for the State of Maranhão (see results) (figs. 1-4). The first specimen was collected in 2011 (voucher number MPEG 020719), and three

years later (in 2014) a second specimen was collected (voucher number CICCAA 03485, figs. 1, 4); both sampled in the same collecting site (fig. 2).

The present study contributes to fill distribution and knowledge gaps related to the freshwater fish species of the State of Maranhão by representing the first published register of this species to the area, assigning a voucher number (catalog number), and providing a precise collecting site. It is important to emphasize that several freshwater fish surveys and studies conducted in the State of Maranhão have not provided voucher numbers nor precise sampling locations for collected species (e.g., Garavelo et al. 1998, Soares 2005, Barros et al. 2011, Castro & Dourado 2011, Piorskii et al. 2017, Abreu et al. 2019). This hinders studies focusing at species distribution, biogeography and conservation biology. Moreover, the lack of voucher numbers does not allow species identification and analysis by other researchers.

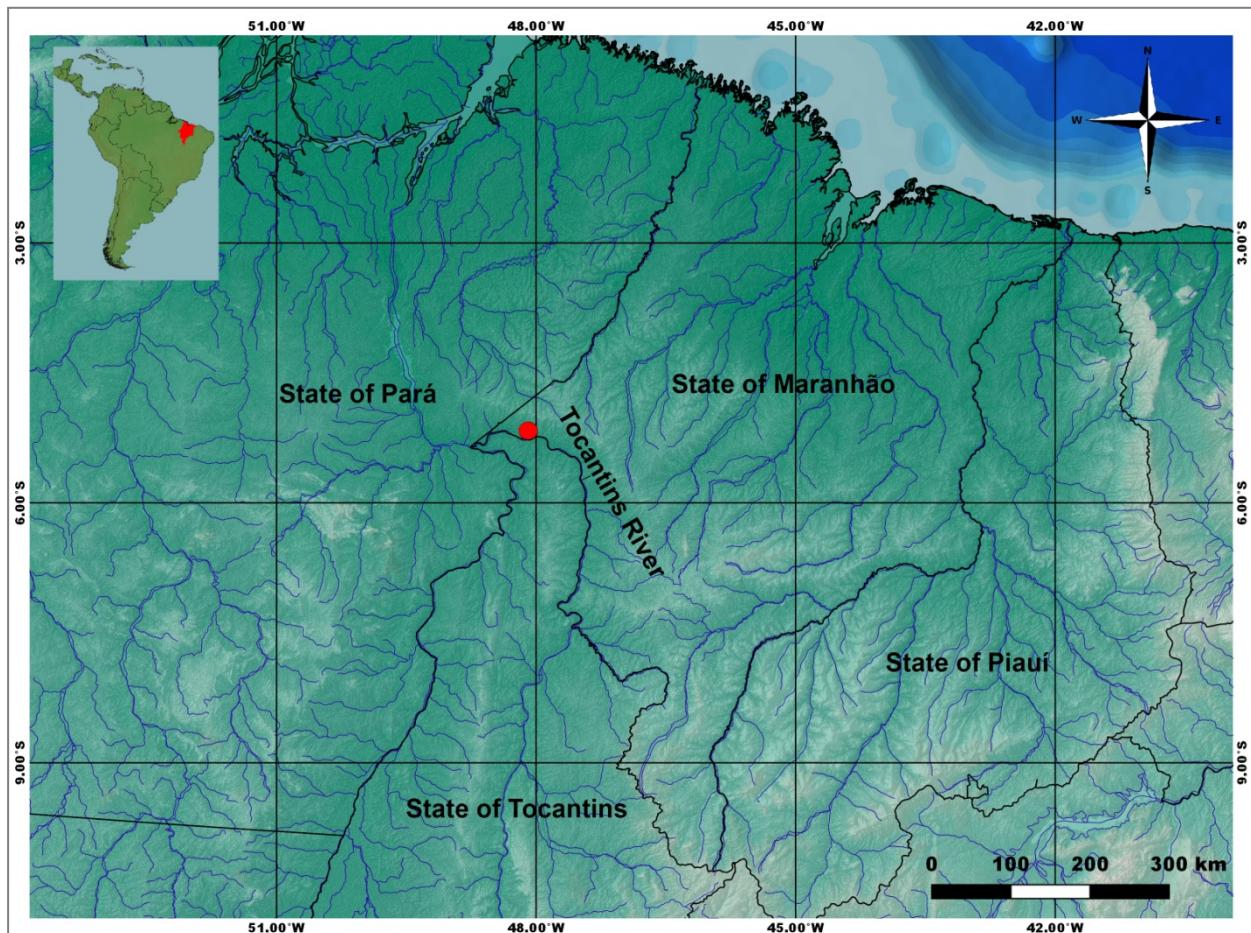


fig. 3. Collection site of the arawana fish *O. bicirrhosum* in the state of Maranhão, Brazil.



fig. 4. Preserved specimen of *O. bicirrhosum*: CICCAA 03485, 1 specimen, 52 cm TL (total length). Vila Nova dos Martírios, Tocantins River basin, State of Maranhão, Brazil.

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