



## A new deep-bodied fossil fish (Actinopterygii) from the Rio do Rasto Formation, Paraná Basin, Brazil

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### Abstract

Fossil fishes from the Paraná Basin are represented by actinopterygians, chondrichthyans, coelacanth and dipnoans. This diverse ichthyofauna comprises mainly fragmentary material with few complete specimens. This paper presents a new Upper Permian ray-finned fish from the Rio do Rasto Formation of the Paraná Basin, southern Brazil. The holotype and only known specimen of *Paranaichthys longianalis* gen. nov. et sp. nov. is an almost complete poorly preserved specimen of a deep-bodied fish that belongs to the collection of the Museu de Ciências e Tecnologia-PUCRS, Porto Alegre, Brazil. The head is slightly deep posteriorly and the oral cavity presents a crushing dentition. The anal fin is remarkably large and long. The heterocercal caudal fin presents the chordal and hypochordal lobe equally in size. Flank scales are deeper than long and covered with ganoine. The dermal bones are also covered by ganoine and present elongated odontodes. The rostral region and the anterior portion of the mandible are covered with conical odontodes. The elongated and long based anal fin is considered apomorphic for this new fish. A reconstruction attempting to correct taphonomic distortions is presented. The systematic relationships of the new taxon suggest that it is related to the platysomids. Its crushing dentition indicates a diet based on hardfood, such as conchostraceans and small mollusks, both very common in the Rio do Rasto Formation. The new genus and species inhabited rivers and lakes during the Wordian-Captanian (Guadalupian, Permian 268 to 260 M.y.).

**Key words:** Permian, Guadalupian, crushing dentition, Platysomidae, freshwater, Serrinha Member

### Introduction

The Paraná Basin is an intracratonic basin on the South American part of Gondwana in which sedimentary and volcanic rocks range from Ordovician to Late Cretaceous times (Milani *et al.* 1998, 2007). The paleoichthyofauna of the Paraná Basin includes chondrichthyans, coelacanth, dipnoans and actinopterygians. Unfortunately, most of the Paleozoic fossil fish occurrences in this basin are represented by fragmentary material and isolated skeletal remains, such as scales, bones, fin spines and teeth (*e.g.* Chahud & Petri 2010; Dias *et al.* 2006, 2010; Ragonha 1989; Richter *et al.* 1985; Richter & Langer 1998; Würdig-Maciel 1975). Well-preserved or at least more complete specimens are proportionally scarce.

Cione *et al.* (2010) present an almost up to date list of the South American fossil fish record. The known Paleozoic actinopterygians of the Paraná Basin related to their ages are as follows. From the Late Carboniferous?/ Early Permian: *Carbonilepis uruguayensis*, *Gondwanichthys maximus*, *Itararichthys microphthalmus*, *Mesonichthys antipodeus*, *Elonichthys macropercularis*, *Daphnaechelus formosus*, *Rhadinichthys rioniger* (all described by Beltan 1978), *Coccocephalichthys tessellatus* Mones 1986, *Irajapintoseidon uruguayensis*, *Monesedeiphus depressus* (both described by Beltan 1989). From the Early Permian: *Santosichthys mafrensis* Malabarba 1988, *Roslerichthys riomafrensis* Hamel 2005; *Tholonosteon santacatarinae* Beltan 1978. And from the Late Permian: *Tholonothus braziliensis* Dunkle & Schaeffer 1956, *Rubidus pascoalensis* Richter 2002, *Angatubichthys mendesi* Figueiredo & Carvalho 2004.

Three distinct unnamed morphotypes were presented in Vega-Dias *et al.* (2000), and Mutter *et al.* (2008) illustrated a Permian actinopterygian from the northern portion of the Paraná Basin in Brazil. Other unnamed Paleozoic fossil fishes were noticed from this basin by Richter (1991) and Figueiredo *et al.* (1998).