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WILSON J. E. M. COSTA



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## Taxonomic revision of the seasonal South American killifish genus *Simpsonichthys* (Teleostei: Cyprinodontiformes: Aplocheiloidei: Rivulidae)

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## Abstract

Fifty species in five subgenera of *Simpsonichthys* (family Rivulidae) are recognized as valid. *Xenurolebias*, from the coastal plains of eastern Brazil, includes one species, *S. myersi*; *Ophthalmolebias*, from the coastal river basins of eastern and southeastern Brazil, comprises *S. constanciae*, *S. suzarti*, *S. bokermanni*, *S. perpendicularis*, and *S. rosaceus*; *Simpsonichthys*, from the central Brazilian plateau, in the upper Paraná, upper Araguaia and upper São Francisco river basins, comprises *S. cholopteryx*, *S. parallelus*, *S. nigromaculatus*, *S. punctulatus*, *S. boitonei*, *S. santanae*, and *S. zonatus*; *Spectrolebias*, from the Middle Tocantins, middle Araguaia, Xingu, Mamoré, and Paraguay river basins, in Brazil, Bolivia and Paraguay, includes *S. reticulatus*, *S. costai*, *S. chacoensis*, *S. filamentosus*, and *S. semiocellatus*; and *Hypsolebias*, from the São Francisco, Tocantins, Middle Jequitinhonha and lower Jaguaribe river basins and isolated coastal basins of northeastern Brazil, comprises *S. ocellatus*, *S. rufus*, *S. stellatus*, *S. nielsenii*, *S. notatus*, *S. radiosus*, *S. similis*, *S. gibberatus*, *S. virgulatus*, *S. trilineatus*, *S. auratus*, *S. hellneri*, *S. adornatus*, *S. fulminantis*, *S. carlettoi*, *S. magnificus*, *S. picturatus*, *S. antenori*, *S. macaubensis*, *S. mediopapillatus*, *S. ghisolfii*, *S. igneus*, *S. flavicaudatus*, *S. flagellatus*, *S. janaubensis*, *S. marginatus*, *S. delucai*, *S. alternatus*, *S. fasciatus*, *S. multiradiatus*, *S. flammeus*, and *S. brunoi*. No new species are described here in the above groups. Detailed descriptions and keys to identification for all species of *Simpsonichthys* are provided.

**Key words:** Killifishes, *Simpsonichthys*, Neotropica, Systematics, Annual fishes

## Resumo

Cinquenta espécies em cinco sub-gêneros de *Simpsonichthys* são reconhecidas como válidas. *Xenurolebias*, das planícies costeiras do leste do Brasil, inclui uma espécie, *S. myersi*; *Ophthalmolebias*, das bacias costeiras do leste de sudeste do Brasil, compreende *S. constanciae*, *S. suzarti*, *S. bokermanni*, *S. perpendicularis* e *S. rosaceus*; *Simpsonichthys*, do planalto central brasileiro, nas bacias do alto rio Paraná, alto rio Araguaia e alto rio São Francisco, compreende *S. cholopteryx*, *S. parallelus*, *S. nigromaculatus*, *S. punctulatus*, *S. boitonei*, *S. santanae* e *S. zonatus*; *Spectrolebias*, das bacias do médio rio Tocantins, médio rio Araguaia, rio Xingu, rio Mamoré e rio Paraguai, no Brasil, Bolívia e Paraguai, compreende *S. reticulatus*, *S. costai*, *S. chacoensis*, *S. filamentosus* e *S. semiocellatus*; e *Hypsolebias*, das bacias dos rios São Francisco, Tocantins, médio Jequitinhonha e baixo Jaguaribe e bacias costeiras isoladas do nordeste do Brasil, compreende *S. ocellatus*, *S. rufus*, *S. stellatus*, *S. nielsenii*, *S. notatus*, *S. radiosus*, *S. similis*, *S. gibberatus*, *S. virgulatus*, *S. trilineatus*, *S. auratus*, *S. hellneri*, *S. adornatus*, *S. fulminantis*, *S. carlettoi*, *S. magnificus*, *S. picturatus*, *S. antenori*, *S. macaubensis*, *S. mediopapillatus*, *S. ghisolfii*, *S. igneus*, *S. flavicaudatus*, *S. flagellatus*, *S. janaubensis*, *S. marginatus*, *S. delucai*, *S. alternatus*, *S. fasciatus*, *S. multiradiatus*, *S. flammeus* e *S. brunoi*. São fornecidas descrições detalhadas e chaves para identificação de todas as espécies de *Simpsonichthys*.

## Introduction

The genus *Simpsonichthys* Carvalho is the most speciose and geographically widespread genus of neotropical seasonal rivulids. It occurs over a vast region of South America, including the Jaguaribe, São Francisco, Pardo, Jequitinhonha and Doce river basins and smaller isolated river basins of northeastern, eastern and southwestern Brazil; southern tributaries of the Amazon River basin, including the Tocantins, Araguaia, and Xingu drainages in Brazil; the Mamoré River basin in Bolivia; the Paraguay River basin in Paraguay and Bolivia; and the upper Paraná River basin in central Brazil (Costa, 1996, 2006a). All species of *Simpsonichthys* spend their entire lives in shallow seasonal pools formed by rains, in different natural areas of South America (Costa, 1995), including rainforests (the Amazonian forest and the Atlantic forest, including the adjacent coastal Restinga); semiarid areas (the Caatinga of northeastern Brazil, the Gran Chaco of Paraguay and Bolivia, and a coastal area of Rio de Janeiro state, southeastern Brazil); and savanna-like regions such as the Brazilian Cerrado, which includes forested vegetation formations such as the Mata Ciliar and Mata de Galeria, and open vegetation formations as Campo Limpo, Brejos, and Buritizal (Buriti-palm). The pools in all these regions are dry during some months of the year (usually between July and November), when all indi-