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## A new species of *Bachia* Gray, 1845 (Squamata: Gymnophthalmidae) from the Eastern Brazilian Cerrado, and data on its ecology, physiology and behavior

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### Abstract

A new species of *Bachia* of the *bresslaui* group, *Bachia geralista* **sp. nov.**, is described from Planalto dos Gerais, an old and partially dissected plateau extending along the Cerrados of Bahia, Minas Gerais and Tocantins states, Brazil. The new species is morphologically similar to *B. bresslaui*, with which it has been confused; however head scalation resembles other species from sandy spots within the Cerrado (*B. psamophila* and *B. oxyrhina*). Like in *B. psamophila* and *B. oxyrhina*, the shovel-shaped snout of the new species is highly prominent, a typical trait of psammophilous habits in other gymnophthalmids. The examination of specimens of *B. bresslaui* from several populations within the Cerrado revealed great variation among localities, leading to the reidentification of a specimen from Utiariti, Mato Grosso, previously referred to in the literature as the second record of *B. bresslaui*, as the recently described *B. didactyla*, suggesting that cryptic diversity might remain still undiscovered within this genus in the Cerrado. Despite occurring in a relatively open Cerrado, thermal physiology of *Bachia geralista* **sp. nov.** restricts its occurrence to shaded microhabitats within this habitat.

**Key words:** *Bachia geralista* **sp. nov.**, psammophilous habits, Peruaçu, limb reduction, fossoriality.

### Introduction

At the end of the XVIII century Bonnaterre (1789) described *Chalcides flavescens*, a small worm-like lizard from South America, with vestigial limbs. Few decades later Duméril and Bibron (1839) described *C. dorbignyi*, a second South American species from Bolivia. Later, Gray (1845) recognized Duméril and Bibron' species as belonging to a distinct genus, and described *Bachia* to accommodate it. More than 150 years has passed and the genus *Bachia*, including Bonnaterre' species, currently comprises 22 species distributed mostly over the tropical South America, and southern Central America (Dixon 1973; Castrillon & Strussmann 1998; Kizirian & McDiarmid 1998; Rodrigues *et al.* 2007; Rodrigues *et al.* 2008; Freitas *et al.* 2011).

Forest dwelling species of *Bachia* frequently show a rounded snout, and fingers and toes relatively developed (Dixon 1973). However, in the last few decades, several species have been described from the open areas within the Cerrado of Central Brazil (Castrillon & Strussmann 1998; Rodrigues *et al.* 2007; Rodrigues *et al.* 2008; Freitas *et al.* 2011), all showing reduced limbs, and those from sandy habitats (e.g. *B. micromela* Rodrigues, Pavan & Curcio 2007, *B. psamophila* Rodrigues, Pavan & Curcio 2007 and *B. oxyrhina* Rodrigues, Camacho, Nunes, Recoder, Teixeira, Valdujo, Ghellere, Mott & Nogueira 2008) also showing reduction on head scalation and a shovel-like snout (Rodrigues *et al.* 2007, Rodrigues *et al.* 2008).

The relationship between morphology, ecology, physiology and behavior of species are basic to recognize potential limitations to their ecological or geographical distribution, and support further conservation actions or evolutionary studies. However, as for most gymnophthalmids, these traits are very poorly known in *Bachia* (Colli 1998; Wiens *et al.* 2006; Henderson & Powell 2009; Bentz *et al.* 2011).