A new species of Coleodactylus Parker, 1926 (Squamata: Sphaerodactylidae) from the Atlantic Forest of northeast Brazil

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Abstract

A new species, Coleodactylus elizae sp. nov., is described for the Atlantic Forest of Northeastern Brazil. It is distinguished from other Coleodactylus species by the following character combinations: one nearly completely divided or two rostral scales, dorsal scales smooth and four scales forming the ungual sheath. The color pattern consists of white spots distributed over a pinkish background. Coleodactylus elizae sp. nov. is a forest species inhabiting bromeliads.

Key words: lizard, bromeliad fauna, rainforest, Brazil

Introduction

The genus Coleodactylus Parker (Squamata: Sphaerodactylidae) is distributed in South America east of the Andes range. Up to now, it was composed of five species of small leaf-litter diurnal geckos: C. amazonicus (Andersson), distributed in Central and Eastern Amazonia, including Southern Venezuela, Southern Guyana, Suriname, and French Guyana; C. brachystoma (Amaral) in the Cerrado in the Brazilian states of Goiás, Mato Grosso, Mato Grosso do Sul and Piauí; C. meridionalis (Boulenger), in the Atlantic Forest, from the coastal Brazilian states to more mesic open formations from Ceará to Bahia; C. natalensis Freire restricted to the forest in the dune fields of Natal and Parnamirim, in Rio Grande do Norte State, and C. septentrionalis Vanzolini, which occurs in the northern state of Roraima (Vanzolini 1957, 1980; Ávila-Pires 1995; Freire 1999; Vitt et al. 2005; Geurgas et al. 2008; Geurgas & Rodrigues 2010).

Until recently the characteristic considered most informative in recognizing genera of Sphaerodactylidae, due to its conservative nature, was digital scutellation, particularly of the ungual sheath. Kluge (1995) conducted a cladistic analysis using 25 internal and external morphological synapomorphies. However, he explored the ungual sheath arrangement, based on the homology and heterogeneity of individual digital scales, as the element of greatest weight to sustain the hypothesis regarding the historical evolution of the group. The most parsimonious hypothesis of his study established the following relationship (Gonatodes (Lepidoblepharis (Sphaerodactylus (Coleodactylus, Pseudogonatodes)))), corroborating the monophyly of each genus described in other studies (Parker 1926; Vanzolini 1968; Huey & Dixon 1970; Hoogmoed 1985).

More recently, molecular genetic studies have been carried out to help interpret relationships based on morphological aspects. The phylogenetic study of Coleodactylus conducted by Geurgas et al. (2008) based on mitochondrial 16S and two nuclear genes, identified the monophyly of the genus, albeit weakly supported, as well as two main clades. The first composed of populations attributed to C. amazonicus and the second of C. meridionalis, C. brachystoma, C. natalensis and C. septentrionalis. The last was named as the C. meridionalis group.

However, in a phylogenetic study by Gamble et al. (2011), using fragments of five nuclear genes from New World geckos, established that Coleodactylus was polyphyletic with regard to other genera. Coleodactylus amazonicus was reported as the sister taxon to the remaining Sphaerodactylini, a clade consisting of Gonatodes, Lepi-