



Distribution and variation of the giant alpha anoles (Squamata: Dactyloidae) of the genus *Dactyloa* in the highlands of western Panama, with the description of a new species formerly referred to as *D. microtus*

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Abstract

Six species of giant alpha anoles of the genus *Dactyloa* are known to occur in western Panama: *Dactyloa casildae*, *D. frenata*, *D. ibanezi*, *D. insignis*, *D. kunayalae*, and *D. microtus*. Based on own material collected along the highlands in Bocas del Toro, Chiriquí, and Veraguas provinces and the Comarca Ngöbe-Buglé of western Panama, we review their variation in morphological characters and the 16S rRNA mitochondrial gene. Our results support all six nominal taxa, but reveal considerable genetic differentiation between populations of the two highland species, *D. casildae* and *D. microtus*, respectively, from different localities. Correlated morphological differences confirm the existence of a cryptic species among populations currently assigned to *D. microtus*, which we describe as *Dactyloa ginaelisiae* sp. nov. We provide point distribution maps, morphology and color descriptions, photographs in life, conservation status assessments, and an identification key for all seven species.

Key words: *Anolis*, *Dactyloa*, Lower Central America, Cordillera Central, Talamanca highlands, Tabasará range, morphology, 16S barcoding, conservation

Resumen

Seis especies de alfa anolis gigantes del género *Dactyloa* se han citado para el oeste de Panamá: *Dactyloa casildae*, *D. frenata*, *D. ibanezi*, *D. insignis*, *D. kunayalae* y *D. microtus*. Basado en material propio colectado a lo largo de la Cordillera Central en las provincias de Bocas del Toro, Chiriquí y Veraguas, y en la Comarca Ngöbe-Buglé de Panamá occidental, examinamos su variación en características morfológicas y el gen mitocondrial 16S rRNA. Nuestros resultados soportan las seis especies nominales, sin embargo revelan considerable diferenciación genética entre poblaciones provenientes de diferentes localidades en las dos especies de tierras altas, *D. casildae* y *D. microtus*. Diferencias morfológicas adicionales confirman la existencia de una especie críptica dentro de poblaciones actualmente referidas a *D. microtus*, la que describimos como *Dactyloa ginaelisiae* sp. nov. Presentamos mapas de distribución, descripciones de color y morfología, fotos de animales vivos, evaluaciones del estado de conservación y una clave de identificación para las siete especies.

Palabras clave: *Anolis*, *Dactyloa*, sur de Centroamérica, Cordillera Central, Serranía de Talamanca, Serranía de Tabasará, morfología, 16S barcoding, conservación

Introduction

The anoline fauna of Lower Central America (Costa Rica and Panama) is composed of two principal lineages (Savage 2002; Köhler 2008). Most species are referable to the beta section of Etheridge (1959), and have been included in the genus *Norops* Wagler by Guyer and Savage (1986). These anoles are typically of small to moderate size and rather inconspicuously colored with a predominance of brownish or grayish tones. Besides these, some