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A new species of the genus *Norops* from Darién, Panama, with comments on *N. sulcifrons* (Cope 1899) (Reptilia, Squamata, Dactyloidae)

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Abstract

We describe the new species *Norops triumphalis* sp. nov. from Darién, Panama. *Norops triumphalis* differs from all congeners by having a combination of (1) smooth, bulging, subimbricate ventral scales; (2) a short tail, ratio tail length/SVL 1.54; (3) short hind legs, longest toe of adpressed hind leg reaching to ear opening, ratio shank length/SVL 0.24; (4) a lichenous body pattern; and (5) a very large yellowish orange dewlap in males. In external morphology, *N. triumphalis* is most similar to the species of the *N. pentaprion* group. *Norops triumphalis* differs from the other species in the *N. pentaprion* group, except *N. sulcifrons*, by having a very large orange male dewlap (vs. a large red or pink dewlap) and an unpigmented throat lining. *Norops triumphalis* differs from *N. sulcifrons* by having the supracaudal scales not forming a serrated crest (vs. a distinct serrated caudal crest present in *N. sulcifrons*), 4 supracaudal scales per segment (vs. 3 supracaudal scales per segment in *N. sulcifrons*), greatly enlarged outer postmental scales, about four times the size of adjacent medial scales (vs. moderately enlarged outer postmental scales, about twice the size of adjacent medial scales, in *N. sulcifrons*), and no enlarged postcloacal scales in males (vs. a pair of moderately enlarged postcloacal scales present in male *N. sulcifrons*). We further provide a standardized description and illustrations of the holotype of *N. sulcifrons*.

Key words: Dactyloidae, hemipenial morphology, new species, *Norops triumphalis* sp. nov., Panama, Reptilia, Squamata

Introduction

The anole species related to *Norops pentaprion* (Cope 1862) form a tight cluster of small to moderate-sized anoles that would fit the criteria of a twig anole sensu Williams (1983). Currently, the following eight Central American species are assigned to the *Norops pentaprion* group sensu Köhler (2010): *N. beckeri* (Boulenger 1881), *N. charlesmyersi* (Köhler 2010), *N. cristifer* (Smith 1968), *N. fungosus* (Myers 1971), *N. pentaprion* (Cope 1862), *N. salvini* (Boulenger 1885), and *N. utilensis* Köhler 1996. Additionally, three South American species have been assigned to this species group: *N. ibague* (Williams 1975), *N. ortonii* (Cope 1868), and *N. sulcifrons* (Cope 1899) (see Myers 1971, Williams 1975). A recent expedition to eastern Panama led by KEN resulted in the collection of a single adult male of an anole that could not be assigned to any of the known species from Central or South America. Based on its external morphology, it is clearly a member of the *N. pentaprion* species group. A thorough comparison with all known species currently assigned to this group confirmed that it represents an undescribed species. Thus, we provide a formal description of this new species below.

Material and methods

In evaluating whether multiple species exist within a certain species complex, we follow the Evolutionary Species Concept (Simpson 1961; Wiley 1978), and operationalize this concept by identifying species based on consistent differences between populations (Frost & Kluge 1994). Recently, Nicholson *et al.* (2012) proposed a new classification for the anoles. Despite published criticism (Castañeda & de Queiroz 2013; Poe 2013), rebutted by

opportunity to compare them to Caribbean twig ecomorphs. Such a comparison would be highly informative with respect to understanding the evolution of adaptive radiations and constraints within anoles.

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APPENDIX 1. Comparative material examined.

Anolis beckeri—**Belize**: Cayo: Five Sister Lodge; 16 mi S on Caracol Rd. then W 2 mi: POE field number 1217, 1183–84; San Ignacio, 12 mi SW of, Xunantunich ruins: USNM 220398. **Guatemala**: Chiquimula: Ceiba: UMMZ 79081; Izabal: Morales, Sierra de Caral, Camino Quebradas-La Firmeza: UTA R39784; Fronteras: Puente de Río Dulce: UVG 452; El Petén: Parque Nacional Tikal: UF 13773, 24616, UMMZ 117822; Flores, Carretera de Yaxha a Nakum: UVG 1355. **Honduras**: Atlántida: Guaymas District [=an old United Fruit Company Plantation located 40 km WSW of Tela at 10 m elev.]: UMMZ 58392–95; Lancetilla, MCZ 38835; Colón: mountains just S of Trujillo: CM 64619; Salamá: USNM 242056; Cerro Calentura, LSUMZ 33678; Gracias a Dios: Palacios, BMNH 1985.1121; Olancho: Montana del Ecuador,