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Eleven new species of snakes of the genus *Typhlops* (Serpentes: Typhlopidae) from Hispaniola and Cuba

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Abstract

Here we describe 11 new species of blindsnakes of the genus *Typhlops* from the West Indies. Four of the new species are from southern Hispaniola and were previously confused with *T. hectus* Thomas. Seven other species are described from Cuba and are related to *T. biminiensis* Richmond. Diagnostic morphological differences distinguish all of these species, and at least three pairs are known to be sympatric. With these new taxa, 40 species of *Typhlops* are now recognized from the West Indies, all of which are endemic to the region. Nearly all species are found on single islands or island banks. We classify West Indian *Typhlops* into nine species groups, most of which exhibit geographic patterns. The West Indian species form two clades: the *T. biminiensis* Group with its 12 species is centered in the western Caribbean (Bahamas, Cayman Islands, Cuba) and the remaining species, grouped into eight species groups, form a large clade (Major Antillean Radiation) centered in Hispaniola, but with a closely related pair of lineages in the Puerto Rico region (7 sp.) and northern Lesser Antilles (5 sp.).

Key words: Reptilia, Squamata, Serpentes, Speciation, Cryptic species, West Indies, Caribbean, Greater Antilles

Introduction

The blindsnake genus *Typhlops* is cosmopolitan in distribution, and occurs primarily in tropical regions (Pough, et al., 2003; Zug, et al., 2001). Most species are small (10–30 cm), have tubular-shaped bodies, reduced eyes, and are pinkish or brownish in coloration. They burrow in soil and feed primarily on social insects (ants, termites) and their larvae. Twenty-seven species are recognized from the West Indies, and most of those are endemic to single islands (Breuil, 1999;2002; Powell, et al., 1996; Schwartz & Henderson, 1991).

We have collected specimens of most species of West Indian *Typhlops* and have constructed phylogenetic trees from DNA sequences of three mitochondrial genes from all but one of the new species described herein (the one from Rancho Luna, Cuba). These analyses suggested that at least 15 cryptic species, some of which are sympatric, are confused with two species from Hispaniola (*T. hectus* and *T. pusillus* Barbour) and one species from Cuba (*T. biminiensis*). This result prompted us to examine morphological variation to determine if diagnostic characters could be found that were consistent with the sequence-defined clades. This paper reports the results of those morphological analyses for two of the species (*T. hectus* and *T. biminiensis*) and provides formal descriptions of 11 species. Although the molecular results, which are being presented elsewhere (S. B. Hedges, unpublished), helped to focus our attention on these hidden species, the morphological evidence is sufficient on its own merits to diagnose the new taxa. We also elevate two subspecies to the rank of full species, hence increasing the number of West Indian taxa to 40 species.

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