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Description and phylogenetic relationships of a new genus and two new species of lizards from Brazilian Amazonia, with nomenclatural comments on the taxonomy of Gymnophthalmidae (Reptilia: Squamata)

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Abstract

We describe a new genus and two new species of gymnophthalmid lizards based on specimens collected from Brazilian Amazonia, mostly in the "arc of deforestation". The new genus is easily distinguished from other Gymnophthalmidae by having very wide, smooth, and imbricate nuchals, arranged in two longitudinal and 6–10 transverse rows from nape to brachium level, followed by much narrower, strongly keeled, lanceolate, and mucronate scales. It also differs from all other Gymnophthalmidae, except *Iphisa,* by the presence of two longitudinal rows of ventrals. The new genus differs from *Iphisa* by having two pairs of enlarged chinshields (one in *Iphisa*); posterior dorsal scales lanceolate, strongly keeled and not arranged in longitudinal rows (dorsals broad, smooth and forming two longitudinal rows), and lateral scales keeled (smooth). Maximum parsimony, maximum likelihood, and Bayesian phylogenetic analyses based on morphological and molecular data indicate the new species form a clade that is most closely related to *Iphisa*. We also address several nomenclatural issues and present a revised classification of Gymnophthalmidae.

Key words: Reptiles, phylogeny, biodiversity, forest, Conservation, Amazon, South America

Introduction

The ongoing biodiversity crisis, primarily driven by human activities, could lead to a mass extinction event comparable to the "Big Five" (Bambach 2006; Benton 1995; Raup & Sepkoski 1982) in just a few centuries (Barnosky *et al.* 2011; Glavin 2007; Leakey & Lewin 1995). Even worse, current estimates of extinction rates may well be seriously biased because a large number of species still awaits formal description (Costello *et al.* 2013; Dirzo & Raven 2003; May 2011). Therefore, discovering and describing species is a fundamental and necessary step towards biodiversity conservation. Previous analyses indicate that most undescribed species are likely cryptozoic, small-bodied, with small geographic ranges, lower abundance and from less-explored regions, including threatened biodiversity hotspots (Mora *et al.* 2011; Scheffers *et al.* 2012).

Gymnophthalmid lizards are an exemplary case of a group that may harbour many undescribed species. They

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