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Catalogue of distribution of lizards (Reptilia: Squamata) from the Brazilian Amazonia. II. Gekkonidae, Phyllodactylidae, Sphaerodactylidae

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Table of contents

Abstract	2
Introduction	2
Material and methods	2
Results	3
GEKKONIDAE	3
<i>Hemidactylus</i> Oken, 1817	3
<i>Hemidactylus mabouia</i> (Moreau de Jonnés, 1818)	3
<i>Hemidactylus palaichthus</i> Kluge, 1969	5
PHYLLODACTYLIDAE	6
<i>Gymnodactylus</i> Spix, 1825	6
<i>Gymnodactylus amarali</i> Barbour, 1925	6
<i>Phyllopezus</i> Peters, 1877	6
<i>Phyllopezus pollicaris</i> (Spix, 1825)	6
<i>Thecadactylus</i> Oken, 1817	7
<i>Thecadactylus rapicauda</i> (Houttuyn, 1782)	7
<i>Thecadactylus solimoensis</i> Bergamnn & Russell, 2007	8
SPHAERODACTYLIDAE	9
<i>Chatogekko</i> Gamble, Daza, Colli, Vitt & Bauer, 2011	9
<i>Chatogekko amazonicus</i> (Andersson, 1918)	9
<i>Coleodactylus</i> Parker, 1926	10
<i>Coleodactylus meridionalis</i> (Boulenger, 1888)	10
<i>Coleodactylus septentrionalis</i> Vanzolini, 1980	10
<i>Gonatodes</i> Fitzinger, 1843	10
<i>Gonatodes annularis</i> Boulenger, 1887	10
<i>Gonatodes eladioi</i> Nascimento, Ávila-Pires & Cunha, 1987	12
<i>Gonatodes hasemani</i> Griffin, 1917	13
<i>Gonatodes humeralis</i> (Guichenot, 1855)	13
<i>Gonatodes nascimentoi</i> Sturaro & Ávila-Pires, 2011	14
<i>Gonatodes tapajonicus</i> Rodrigues, 1980	16
<i>Lepidoblepharis</i> Peracca, 1897	16
<i>Lepidoblepharis heyerorum</i> Vanzolini, 1978	16
<i>Lepidoblepharis hoogmoedi</i> Ávila-Pires, 1995	16
<i>Pseudogonatodes</i> Ruthven, 1915	16
<i>Pseudogonatodes gasconi</i> Ávila-Pires & Hoogmoed, 2000	16
<i>Pseudogonatodes guianensis</i> Parker, 1935	17
Discussion	19
Acknowledgments	21
References	21
APPENDIX. Examined material	30

Abstract

I present distribution data of all geckos (Gekkonidae, Phyllodactylidae and Sphaerodactylidae) known from the Brazilian Amazonia, totaling 19 species, belonging to nine genera. This represents six more taxa than previously reported for these families. Data were based on the direct examination of 23,094 specimens deposited in three North American and eight Brazilian museums. Most species (68.4%) are endemic to the Amazonia; non-endemic species are mainly associated with open dry (semideciduous) forest or open vegetation (savanna) enclaves in Amazonia. As a whole, three taxa are widespread in Amazonia, two are restricted to eastern Amazonia, two to western Amazonia, three to northern Amazonia (either widespread or restricted to parts of the Guiana region), one to southern Amazonia, one to southwestern Amazonia, and three to the southern peripheral portion of Amazonia. Additionally, four species have unique distributions and four species have a distribution that is congruent with one of the areas of endemism recognized for other organisms (birds and primates), of which two occur in the area of endemism of Guiana, one in Inambari, and one in Tapajós.

Key words: Reptiles, Gekkota, Brazilian Amazonia, distribution

Introduction

Amazonia represents the largest continuous humid tropical forest in the world, and 60% of its area, estimated to cover 389.3×10^6 ha (Eva *et al.* 2012), lies in Brazil. It harbors a biodiversity that is among the richest in the world, but at the same time it experiences an ongoing deforestation process, with rates that reached $2.24\text{--}2.55 \times 10^6$ ha/year during 2000–2005 (Eva *et al.* 2012). Even if deforestation rates seem to be decreasing (INPE 2012), new (or improved) roads, hydroelectric power plants, mining activities, and other enterprises are now penetrating the region, no longer affecting only its borders, but threatening to fragment the whole region, with unknown consequences. In order to establish efficient conservation policies, knowledge of the distribution of its fauna is important and this is still deficient for the region.

A revision of Brazilian Amazonian lizards was made by Ávila-Pires (1995), but since then research effort increased substantially, with many new localities surveyed, new specimens collected, new species described and some new regional collections established. Data from the collection of Museu de Zoologia da Universidade de São Paulo, Brazil (MZUSP), arguably the largest in South America, and not previously accessed for this kind of study, has been added. Compiling and organizing such data, which are scattered in the literature or restricted to collection databases, not infrequently linked to specimens awaiting proper identification or to mis-identified specimens, is therefore an efficient way of advancing our knowledge.

This paper is part of a project to analyze the diversity, distribution and conservation status of Brazilian Amazonian lizards. In order to do that, I produced the most complete actual distribution map of each lizard species with at least one record in Brazilian Amazonia. Here I present data on the Gekkonidae, Phyllodactylidae, and Sphaerodactylidae (families of infraorder Gekkota) known from Brazilian Amazonia.

Material and methods

Distribution data were obtained from 23,094 specimens deposited in the following herpetological collections (museum acronyms in parenthesis): Universidade de Brasília, Brasília D.F. (CHUNB); Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá, Macapá (IEPA); Instituto Nacional de Pesquisas da Amazônia, Manaus (INPA; APL); Faculdades Integradas do Tapajós, Santarém (LPHA); Museu Nacional do Rio de Janeiro, Rio de Janeiro (MNRJ); Museu Paraense Emílio Goeldi, Belém (MPEG); Museu de Zoologia da Universidade de São Paulo, São Paulo (MZUSP); and Universidade Estadual de Campinas, Campinas (ZUEC)—all in Brazil; American Museum of Natural History, New York (AMNH); Museum of Comparative Zoology, Harvard University, Cambridge (MCZ); and National Museum of Natural History, Smithsonian Institution, Washington D.C. (USNM)—in USA. Specimens were examined and identification verified based on external morphology.

All specimens studied had at least one record within the Brazilian portion of Amazonia. Amazonia, as a whole, was defined based on the biogeographic regions for continental South America (Morrone 2006), with adaptations considering the Amazonian ecoregions according Soares-Filho *et al.* (2006) and Olson *et al.* (2001). The continental islands of Trinidad and Tobago were included with the Amazonian region, as suggested by Duellman