



Gecko on the rocks: an enigmatic new species of *Gonatodes* (Sphaerodactylidae) from Inselbergs of the Venezuelan Guayana

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Abstract

A new species of diurnal gecko of the genus *Gonatodes* is described from Inselbergs (granite outcrops) on the western peripheral lowlands of the Guiana Shield, Venezuela. The new species can be distinguished from all congeners by the following characters: large size (the new species is the largest known sphaerodactyl gecko), supraciliary spine absent, females with immaculate brown dorsal coloration, and a subcaudal scale pattern found in only one other species in the genus. The new species is also unique in the genus in being restricted to rock outcrops and shows potential adaptations to this type of habitat.

Key words: *Gonatodes infernalis*, **sp. nov.**, Sphaerodactylidae, Gekkota, Inselbergs, Venezuelan Guayana

Introduction

Large rock outcrops, known as Inselbergs, have recently received substantial scientific attention, due to the fact that they generally sustain a fascinating biota that includes many species of plants and animals specialized to live in these particular environments (Porembski & Barthlott 2000). Consequently, they function as isolated terrestrial “islands” (in fact, Inselberg is a compound German word meaning “island mountain”) promoting biological diversification at many levels (Prance 1996). Inselbergs are found in many different regions of the world, but are a notoriously common environmental component of the peripheral lowlands of the Guiana Shield, in north-central South America. In terms of geology, the Inselbergs of the Guiana Shield are Precambrian granites and gneisses, and as such are among the oldest geological formations in the world (Schubert *et al.* 1986; Gröger 1994, 2000). In the Guiana Shield, the vegetation associated to Inselbergs has been intensively studied (de Granville & Sastre 1974; de Granville 1991; Gröger 1994, 2000; Sarthou *et al.* 2001), however, there is a general lack of faunal surveys and studies focusing on these rock formations in this region. This is somewhat surprising if we consider that studies in other Inselberg regions have encountered a rich fauna of vertebrates that possess multiple adaptations to dwell on rocky surfaces (Mares & Seine 2000), setting the stage for comparative studies of convergent evolution (e.g., Mares & Lacher 1987; Revell *et al.* 2007).

During recent field work in the Puerto Ayacucho area, Estado Amazonas, Venezuelan Guayana, the first author collected specimens of a distinctive gecko (lizards in the infraorder Gekkota) in the genus *Gonatodes*, which immediately called our attention due to its large size, long digits, and unique coloration not found in any other species in the genus. Additionally, specimens of this gecko were only found on granite, dome-like, Inselbergs. At present, no species of *Gonatodes* is known to be restricted to this type of habitat, even though