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A new leaf-tailed gecko of the *Uroplatus ebenau* group (Squamata: Gekkonidae) from Madagascar's central eastern rainforests

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Abstract

We describe a new leaf-tailed gecko species of the *Uroplatus ebenau* group from the eastern central rainforests of Madagascar, which had previously been considered as a confirmed candidate species. Our description of *Uroplatus fiera* **sp. nov.** relies on integrating evidence from molecular and morphological characters and is based on newly collected material from two localities. A phylogenetic analysis based on multiple mitochondrial DNA fragments places the new species as sister to a lineage of uncertain status (*Uroplatus ebenau* [Ca8]), and the clade consisting of these two lineages is sister to a further undescribed candidate species (*U. ebenau* [Ca1]). This entire clade is sister to *U. phantasticus* plus another candidate species. The new species differs from these close relatives, and all other congeners, by strong differences in DNA sequences of mitochondrial genes (>8.5% uncorrected *p*-distance in 16S rDNA to all nominal species of the genus) and lacks shared alleles with any of the nominal species in the nuclear CMOS gene. From its closest relatives the new species further differs in its much smaller tail size (relative to *U. phantasticus*), and a narrower tail, fewer supralabials, and more toe lamellae (relative to *U. ebenau* [Ca1]). Morphologically the new species is most similar to *U. ebenau* but differs in its larger body size and unpigmented oral mucosa. Given its distribution in central eastern Madagascar, with records from near Fierenana and Ambatovy, its range overlaps with that of *U. phantasticus*. Based on examination of the *U. phantasticus* holotype, we confirm that this latter has a blackish pigmented oral mucosa as do those specimens typically attributed to this nomen, thereby confirming its distinctness from *U. fiera* **sp. nov.**, in which the mucosa is unpigmented.

Key words: *Uroplatus fiera* **sp. nov.**, *Uroplatus ebenau* group, Taxonomy, Phylogeny, Gekkonidae, Fierenana, Madagascar

Introduction

As indicated in numerous recent species descriptions, the knowledge of Madagascar's vertebrate fauna is far from being complete (Yoder & Nowak 2006). For the island's herpetofauna, increased field exploration coupled with routine application of molecular techniques, have led to an unprecedented rate of discovery of new, genetically and morphologically distinctive lineages of amphibians and reptiles (Vieites *et al.* 2009; Nagy *et al.* 2012; Perl *et al.* 2014) which in many cases might correspond to evolutionarily independent entities meriting recognition as separate species. Although these candidate species are usually characterized by substantial genetic divergence, available data on their morphology, ecology and distribution are often deemed insufficient for a formal taxonomic recognition, usually necessitating additional field explorations to gather information needed to characterize them in a biologically meaningful way (e.g. Vences *et al.* 2012).

The central eastern rainforests of Madagascar include some of the biologically best-studied primary habitats of the island. One of these areas is located around the village Andasibe (previously Perinet) including the Mantadia-Analamazaotra National Park and several smaller protected forests (Lees 1996; Lees *et al.* 1999), belonging to the