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# Beautiful bright belly: A distinctive new microhylid frog (Amphibia: *Stumpffia*) from eastern Madagascar

FRANK GLAW[1,6], DENIS VALLAN[2], FRANCO ANDREONE[3], DEVIN EDMONDS[4], RAINER DOLCH[4] & MIGUEL VENCES[5]

[1]*Zoologische Staatssammlung München, Münchhausenstraße 21, 81247 München, Germany. E-mail: Frank.Glaw@zsm.mwn.de*
[2]*Naturhistorisches Museum Basel, Augustinergasse 2, CH 4001 Basel, Switzerland. E-mail: Denis.Vallan@bs.ch*
[3]*Museo Regionale di Scienze Naturali, Via G. Giolitti, 36, I-10123 Torino, Italy. E-mail: franco.andreone@regione.piemonte.it*
[4]*Association Mitsinjo, Lot 104 A Gare, Andasibe 514, Madagascar. E-mail: devin@amphibiancare.com; rdolch@gmx.de*
[5]*Division of Evolutionary Biology, Zoological Institute, Technical University of Braunschweig, Mendelssohnstr. 4, 38106 Braunschweig, Germany. E-mail: m.vences@tu-bs.de*
[6]*Corresponding author*

## Abstract

We describe a new red-bellied species of the microhylid frog genus *Stumpffia* from the Andasibe region (18°56' S, 48°25' E, ca. 900 m elevation) in central-eastern Madagascar. *Stumpffia kibomena* **sp. nov.** differs from all other described *Stumpffia* species in coloration, morphology, and by genetic differentiation in the mitochondrial 16S rRNA gene (≥8.6% uncorrected p-distance to all other nominal species of the genus). It is furthermore distinguished from most other *Stumpffia* species by its advertisement calls. The new species is reliably known only from a few specimens collected in the Andasibe region and based on the limited knowledge we suggest its IUCN Red List classification as "Data Deficient".

**Key words:** Amphibia, Anura, Cophylinae, Madagascar, Microhylidae, *Stumpffia kibomena* **sp. nov.**

## Introduction

Within the Malagasy microhylid subfamily Cophylinae two major ecological groups can be distinguished: arboreal species with dilated finger tips and terrestrial species, usually without terminal finger discs (Andreone *et al.* 2005). Terrestrial cophylines include the genera *Madecassophryne*, *Rhombophryne*, *Stumpffia* and most species of the genus *Plethodontohyla* (Wu 2003). Species of *Stumpffia* are relatively well characterized by small to very small body size (adult snout-vent length 10–28 mm) and the absence of maxillary and vomerine teeth (Guibé 1978; Blommers-Schlösser & Blanc 1991; Köhler *et al.* 2010), a character combination shared only with *Madecassophryne*. As primarily terrestrial frogs, most *Stumpffia* species have no terminal finger discs, although exceptions with well developed finger discs are known from *Stumpffia helenae* (Vallan 2000) and several cave dwelling species from karstic habitats (Köhler *et al.* 2010). The majority of *Stumpffia* species form a well-supported monophyletic group sister to *Rhombophryne* but *S. helenae* is only poorly supported in this clade, and some yet undescribed lineages from south-eastern Madagascar might represent a phylogenetically independent radiation of miniaturized cophylines (Wollenberg *et al.* 2008).

*Stumpffia* currently contains 15 described taxa (Köhler *et al.* 2010; Klages *et al.* 2013; Ndriantsoa *et al.* 2013), which are generally characterized by tiny distribution ranges. In Madagascar, a high degree of miniaturization and microendemism is paralleled by a high species diversity in some organism groups (Wollenberg *et al.* 2011; Glaw *et al.* 2012). Thus it is not surprising that many undescribed species and lineages of *Stumpffia* have been identified (Glaw & Vences 2007; Wollenberg *et al.* 2008; Vieites *et al.* 2009; Perl *et al.* 2014). Most of the undescribed species are morphologically similar to each other as well as to described taxa and their taxonomic description requires a careful revision of the genus, which is currently in progress.

In this paper we describe a new red-bellied species that can be distinguised easily from all other *Stumpffia*

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Madagascar. This might indicate that the habits of *S. kibomena* are rather cryptic or seasonal, or that the species is indeed rare and restricted to a relatively small distribution range. The presence of *S. kibomena* in the rather well-protected reserve Analamazaotra might assure its survival. Because *S. kibomena* is known only from two locations (situated close to each other) and a few specimens, we suggest its inclusion in the IUCN category "Data Deficient" (DD) according to the IUCN Red List criteria (IUCN 2001).


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