



Article

A new small *Phrynobatrachus* (Amphibia: Anura: Phrynobatrachidae) from southern Cameroon

MARK-OLIVER RÖDEL¹, THOMAS DOHERTY-BONE², MARCEL TALLA KOUETE³, PETER JANZEN⁴, KATHERINE GARRETT⁵, ROBERT BROWNE⁶, NONO LEGRAND GONWOU⁷, MICHAEL F. BAREJ¹ & LAURA SANDBERGER¹

¹Museum für Naturkunde, Leibniz Institute for Research on Evolution and Biodiversity, Berlin, Invalidenstr. 43, 10115 Berlin, Germany. E-mail: mo.roedel@mfn-berlin.de

²Department of Zoology, Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom

³Cameroon Herpetology Conservation Biology Foundation (Camherp-CBF), Yaoundé, Cameroon

⁴Rheinallee 13, 47119 Duisburg, Germany

⁵Botany Department, Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom

⁶Royal Zoological Society of Antwerp, Koningin Astridplein 26, 2018 Antwerp, Belgium.

⁷University of Yaoundé I, Faculty of Science, Laboratory of Zoology, P.O. Box 812, Yaoundé, Cameroon

Abstract

We describe a new small *Phrynobatrachus* species from southern Cameroon. The new species exhibits a combination of unique morphological characters and a distinctive colour pattern consisting of a black lateral face mask, a black throat in males, a white throat with uniform black lower mandibles in females and a white belly in both sexes. Morphologically it is characterized by small size, absence of an eyelid cornicle, presence of black spines on anterior part of vocal sac in males, spines on flanks, presence of discs on toe and finger tips, distinct webbing, absence of nuptial pads on male thumbs and scapular ridges converging in a straight line. Analysis of mitochondrial 16S rRNA revealed that the new species differs from 34 other West and Central African species of the genus by a minimum distance of 4.5% and is most similar to several *Phrynobatrachus* species which are almost all endemic to the Cameroon volcanic line or parts of it, i.e. *P. chukuchuku* (4.9%), *P. werneri* (5.1%), *P. steindachneri* (5.2%), *P. schioetzi* (5.6%), *P. batesii* (5.9%), *P. cricogaster* (5.5%), *P. danko* (6.1%), and *P. manengoubensis* (6.1%), respectively. The new species is most similar to *P. batesii*, which was described from forests close to the type locality of the new species. Morphologically the new species differs from *P. batesii* by much smaller size (< 20 mm vs. 25–31 mm), shape of scapular ridges, belly colour, shorter shanks, absence of nuptial pads and presence of gular spines in breeding males.

Key words: *Phrynobatrachus batesii*, *Phrynobatrachus ruthbeateae* sp. nov., Central Africa, Dja Biosphere Reserve, Lower Guinea Forest, rainforest

Introduction

The biodiversity of Afrotropical countries is still far from being fully assessed and amphibians are no exception from that rule. However, due to the many important contributions of e.g. G.A. Boulenger (i.e. 1906a), H.W. Parker (1936), J.-L. Perret (i.e. Perret 1966) and J.-L. Amiet (summarised until 2007 in Amiet 2008a, b) the amphibian fauna of Cameroon is comparatively well known. Two remarkable exceptions are the two leaf litter dwelling frog genera *Arthroleptis* and *Phrynobatrachus*. Concerning the latter genus J.-L. Amiet (2004, pers. comm.), in an unpublished check list, mentions a minimum of 25 species for Cameroon (including the former genera *Dimorphognathus* and *Phrynodon*), only 14 of them being already formally described. Several new *Phrynobatrachus* species have been recently described from either Cameroon or the neighbouring highlands of eastern Nigeria (Zimkus 2009; Blackburn 2010; Blackburn & Rödel 2011), but many puddle frogs still cannot be assigned to a described species (e.g. Lawson 1993; Herrmann *et al.* 2007; Zimkus *et al.* 2010).

Between 25 April and 4 May 2009, within the small rainy season, we surveyed amphibians in an area of pri-