



Review of the genus *Petropedetes* Reichenow, 1874 in Central Africa with the description of three new species (Amphibia: Anura: Petropedetidae)

MICHAEL F. BAREJ^{1,6}, MARK-OLIVER RÖDEL², LEGRAND NONO GONWOUO³,
OLIVIER S.G. PAUWELS⁴, WOLFGANG BÖHME¹ & ANDREAS SCHMITZ⁵

¹Zoologisches Forschungsmuseum Alexander Koenig, Adenauerallee 160, 53113 Bonn, Germany

²Museum für Naturkunde, Leibniz Institute for Research on Evolution and Biodiversity at the Humboldt University Berlin, Invalidenstrasse 43, 10115 Berlin, Germany

³Université of Yaoundé I, Faculty of Science, Laboratory of Zoology, P.O. Box 812, Yaoundé, Cameroon

⁴Institut Royal des Sciences Naturelles de Belgique, Département des Vertébrés Récents, Rue Vautier 29, 1000 Brussels, Belgium

⁵Muséum d'histoire naturelle, Department of Herpetology and Ichthyology, C.P. 6434, 1211 Geneva 6, Switzerland

⁶Corresponding author: E-mail: michael@barej.de

Table of contents

Abstract	2
Introduction	2
Material and methods	3
Results	3
<i>Petropedetes johnstoni</i> (Boulenger, 1888 “1887”)	4
<i>Petropedetes vulpiae</i> sp. nov.	13
<i>Petropedetes parkeri</i> Amiet, 1983	17
<i>Petropedetes euskircheni</i> sp. nov.	26
<i>Petropedetes perreti</i> Amiet, 1973	28
<i>Petropedetes cameronensis</i> Reichenow, 1874	30
<i>Petropedetes juliawurstnerae</i> sp. nov.	35
<i>Petropedetes palmipes</i> Boulenger, 1905	39
Key to adult Central African <i>Petropedetes</i> species	41
Discussion	41
Acknowledgements	44
References	44
Appendix I. Assignments before official naming and problematic assignments of Central African <i>Petropedetes</i>	48
Appendix II. Gazetteer	49

Abstract

We review and summarize the present knowledge on Central African *Petropedetes*, discuss their taxonomy and describe three new species. We synonymise one name: *P. newtonii* is a junior synonym of *P. johnstoni*. Frogs from the African mainland, namely Cameroon and eastern Nigeria, assigned to “*P. newtonii*” in more recent literature, were misidentified. They are herein described anew as *Petropedetes vulpiae* **sp. nov.** Two further new taxa are morphologically similar to other described species. *Petropedetes euskircheni* **sp. nov.** is morphologically close to *P. parkeri* but differs foremost in the smaller size of the femoral glands in adult males. *P. juliawurstnerae* **sp. nov.** is morphologically similar to *P. perreti* and *P. cameronensis*. It can be distinguished from *P. perreti* by its less developed webbing and from *P. cameronensis* by the size of its tympanum and the occurrence of a tympanic papilla in males. A key to adult males of the currently known Central African *Petropedetes* species is given and an outlook on potential further new taxa is provided.

Key words: *Petropedetes euskircheni* **sp. nov.**, *Petropedetes juliawurstnerae* **sp. nov.**, *Petropedetes vulpiae* **sp. nov.**, Cameroon, Equatorial Guinea, Gabon, Nigeria

Introduction

The African genus *Petropedetes* Reichenow, 1874, as currently defined, comprises ten species of frogs (Scott 2005; Frost 2009). Frogs belonging to the genus are of medium to large size. Most species are stream breeders and inhabit the splash-water zone, where clutches are deposited on moist rock surfaces. The highest species diversity is found in western Central Africa around the Gulf of Guinea (= Biafra Bay). Six species are known from Gabon to Nigeria (Perret 1966, 1984; Amiet 1986), while one species is known from the Upper Guinea forests of West Africa (Boulenger 1905; Rödel *et al.* 2004a) and three more from mountainous East Africa (e.g. Nieden 1911; Channing *et al.* 2002).

Until the work of Frost *et al.* (2006), who placed the genera *Petropedetes*, *Arthroleptides*, *Conraua* and *Indirana* in an own family Petropedetidae, *Petropedetes* has been regarded as basal member of the Ranoidea and within a subfamily Petropedetinae of the cosmopolitan family Ranidae (Noble 1931; van der Meijden *et al.* 2005; Bossuyt *et al.* 2006).

East African species were formerly assigned into their own genus *Arthroleptides*. Nieden (1911) describes the East African *Arthroleptides* with *A. martiensseni* being the type species, on characters partly very similar to *Petropedetes* Reichenow, 1874. Among other characters *Arthroleptides* shares with *Petropedetes* the shape of toe tips, but differs by the absence of the vomerine teeth (Nieden 1911). Klemens (1998) mentions the similarity of male sexual characteristics of both genera and Scott (2005) finally allocates *Arthroleptides* in the synonymy of *Petropedetes*. According to her (citing Inger 1954), slight morphological differences, such as the presence or absence of vomerine teeth, may vary within genera and do not force a separation into different genera.

The type species of the genus is *P. cameronensis* Reichenow, 1874. Boulenger (1888) subsequently describes *Cornufer johnstoni* and du Bocage (1895a) *Tympanoceros newtonii*. The latter two species were later transferred to the genus *Petropedetes* by Boulenger (1900). In 1905 Boulenger describes *P. palmipes* from Central Africa. Two further Central African *Petropedetes* species have been described by Amiet (1973, 1983); *P. perreti* Amiet, 1973 and *P. parkeri* Amiet, 1983, respectively. *Petropedetes obscurus* described by Ahl (1924) was recognized to be a synonym of *P. cameronensis* by Perret (1984). Boulenger (1905) describes the only West African species: *Petropedetes natator* Boulenger, 1905. Three East African *Petropedetes*, formerly belonging to *Arthroleptides*, have been described by Nieden (1911), Loveridge (1935) and Channing *et al.* (2002) as *Arthroleptides martiensseni* Nieden, 1911 “1910”, *Arthroleptides dutoiti* Loveridge, 1935 and *Arthroleptides yakusini* Channing, Moyer & Howell, 2002 respectively. A list of all currently known species with their respective distributions is presented in table 1.

Herein we restrict ourselves to reviewing Central African *Petropedetes*, occurring roughly throughout the Lower Guinean forest belt from east of Cross River in Nigeria to Gabon in the South. We describe new taxa on the bases of morphological characters and summarize all available biological data for all Central African species. Further data concerning the taxonomy of West and East African species and the phylogeny of the whole group will be subject to forthcoming papers of the authors.