



A new species of chameleon (Sauria: Chamaeleonidae) from the highlands of northwest Kenya

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Abstract

A new species of chameleon, *Trioceros nyirit* **sp. nov.**, is described from the northwest highlands of Kenya. It is morphologically similar to *T. hoehnelii* and *T. narraioca*, possessing a short rostral appendage, but differs from them by having a straight or weakly curved parietal crest and forward-pointing rostral projection. A phylogeny based on mitochondrial DNA shows that the proposed new taxon is a distinct clade within the *bitaeniatus*-group and a sister lineage to *T. schubotzi*. Its distribution appears to be restricted to the Cherangani Hills and adjacent Mtelo massif to the north. It is associated with afroalpine forest edge, afroalpine ericaceous vegetation and also occurs in agricultural landscapes.

Key words: afroalpine, afroalpine, East Africa, *nyirit*, phylogenetics, taxonomy, *Trioceros*

Introduction

East Africa has a diverse chameleon fauna with over 50 species described to date (Tilbury 2010). The majority of these species are regional endemics and are restricted to highlands areas, adapted to cooler, higher rainfall environments. Phylogeographic studies of the chameleon fauna of East Africa suggest that their diversification has been driven by climatic fluctuations during the Miocene and Plio-Pleistocene thought to have caused repeated range expansion and fragmentation, mountains acting as refugia and speciation occurring through divergence in isolation (Matthee *et al.* 2004, Mariaux & Tilbury 2006). While we understand something about the processes that have generated chameleon diversity in the region, the full extent of species diversity is likely to be significantly higher than is currently recognised and highlighted by the continued discovery of new taxa (Mariaux & Tilbury 2006; Mariaux *et al.* 2008; Necas 2009; Necas *et al.* 2009; Menegon *et al.* 2009; Krause & Böhme 2010; Lutzmann *et al.* 2010).

The classification of chameleon diversity in East Africa has a complex history. Numerous species were described by taxonomists in the 19th and early 20th centuries but many were reduced to synonyms or were designated as subspecies of widespread and morphologically variable species (Werner 1911; Mertens 1966; Loveridge 1957; Klaver & Böhme 1997). Recent molecular studies have shed light on some of these morphologically diverse and taxonomically problematic groups and revealed deep phylogenetic splits within species and the presence of numerous cryptic species (Matthee *et al.* 2004; Mariaux & Tilbury 2006; Mariaux *et al.* 2008; Krause & Böhme 2010).

One group of chameleons in East Africa that requires further detailed investigation, from morphological and molecular perspectives, is the *bitaeniatus*-group (sensu Rand 1963), a sub-lineage within the genus *Trioceros* (Tilbury & Tolley 2009) that are distributed throughout the highlands of the East and Central Africa. Morphologically they are quite distinctive with heterogeneous body scalation, well-developed dorsal and gular crests, absence