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Contributions to the herpetofauna of the Albertine Rift: Two new species of chameleon (Sauria: Chamaeleonidae) from an isolated montane forest, south eastern Democratic Republic of Congo

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Abstract

Two new species of chameleons from the genera *Rhampholeon* and *Kinyongia* are described from an isolated montane forest remnant situated toward the southern end of the Albertine Rift bordering Lake Tanganyika. The closest known localities of species from these genera are 200km and 400km to the north respectively, separated by large intervening tracts of lowland savannah and *Brachystegia* (Miombo) woodland - habitats not normally inhabited by species of these genera. *Rhampholeon hattinghi* **sp. nov.** and *Kinyongia mulyai* **sp. nov.** bear superficial resemblances to previously described species (*Rh. boulengeri* Steindachner and *K. adolfifriderici* (Sternfeld)). *Rhampholeon hattinghi* **sp. nov.** has a relatively smooth supra-orbital ridge, deep axillary but absent inguinal mite pockets, prominent white spots on the base of the tail and a uniquely derived hemipenal morphology with billowing parasulcal evaginations. Like *K. adolfifriderici*, *Kinyongia mulyai* **sp. nov.** is devoid of a rostral appendage but differs in having a longer and narrower head, a higher upper labial scale count and by the absence of a dorsal crest in the male. To place these new chameleons within the context of their respective genera, Bayesian and maximum likelihood phylogenetic analyses were carried out utilising two mitochondrial (ND2 and 16S) and one nuclear marker (RAG1). Both chameleons were found to have morphological features that distinguish them from other congeners. Based on phylogenetic analysis they are clearly separate evolutionary lineages and are described as new species.

Key words: Albertine Rift, Democratic Republic of Congo, Katanga, Afromontane, Biodiversity, Chamaeleonidae, East Africa, new species, reptiles, *Rhampholeon*, *Kinyongia*

Introduction

The Albertine Rift forms the western arm of the East African Rift valley system extending for 1200km from Uganda in the north, to Zambia at the southern tip of Lake Tanganyika (Fig. 1). The rift is bordered by several montane regions, including some of the highest mountain ranges in Africa (Rwenzori, Virunga, Mitumba mountains), and includes one of the largest and deepest freshwater lakes in the world (Lake Tanganyika – 676km long, 1470m at its deepest point). West of the rift, the Mitumba Mountains stretch southward from the western edge of Lake Edward to terminate just to the north of Kalemie. The Mitumba's encompass major topographic features such as the Itombwe Plateau, and to the south contain large tracts of montane and sub-montane forest around Mt. Kabobo (2650m a.k.a. Kabogo) and Mt. Misotshi (2725m) that are estimated at around 800km² in area (Plumptre *et al.* 2008). Efforts to have this region formally declared as a conservation zone (the proposed Ngamikka National Park) have been led by the Wildlife Conservation Society (Plumptre *et al.* 2007, 2008,), but as yet these forests are still not formally protected.

Approximately 200km from the southernmost montane forest margin on the Mitumba Mountains, Lake Tanganyika is bordered on its south western side by the Marungu Plateau, a grassy montane highland averaging 1700 metres a.s.l. Between the southern end of the Mitumba Range and the northern edge of the Marungu Plateau, two isolated highland areas emerge from the surrounding miombo woodlands. The Muganja Hills inland from the

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