



## Description of a new and critically endangered species of *Atheris* (Serpentes: Viperidae) from the Southern Highlands of Tanzania, with an overview of the country's tree viper fauna

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### Abstract

A new species of arboreal forest viper (Serpentes: Viperidae: *Atheris*) from a forest fragment in the Southern Highlands of Tanzania is described and named *Atheris matildae* **sp. nov.** The species resembles the forest horned viper, *Atheris ceratophora* Werner, by bearing horn-like supraciliary scales but it differs in size, body proportions, scalation, scale ultrastructure, and distribution. Genetic divergence is also assessed and the two species have an estimated divergence time of approximately 2.2 million years. An overview of the genus *Atheris* in Tanzania, including new distribution data, is presented and the conservation status of the new taxon is discussed.

**Key words:** Viperidae, *Atheris*, new species, Southern Highlands, Tanzania, Conservation

### Introduction

Until recently Tanzania's Southern Highlands were largely unexplored biologically, the assumption being that they were of comparatively little significance. However, extensive work over the last decade by the Wildlife Conservation Society has shown that not only are the montane forests and grasslands north of Lake Nyasa extremely species rich, but they also demonstrate a high endemism and thus are as important for conservation as the Eastern Arc chain to the northeast (Davenport, 2005; 2006). New taxa discovered from this area include the chameleon *Kinyongia vanheygeni* (Necas, 2009) and most notably Africa's first new genus of monkey for 83 years, the kipunji *Rungecebus kipunji* (Davenport *et al.*, 2006). Furthermore, a number of novel vertebrates are currently being described of which the distinctive forest viper that is the subject of this work, is one.

The genus *Atheris* Cope, 1862 occurs across tropical Africa, south to Mozambique. Of the 14 recognised species, five occur in Tanzania. With one exception, all *Atheris* species are to some degree, arboreal and share a similar morphology; a relatively slender body, large broad head, and a prehensile tail. The only leaf litter-dwelling species, *Atheris barbouri* Loveridge, 1930 is a small heavy-bodied snake, with a short, blunt head, lacking the prehensile tail; and little is known about its biology (see Fig. 7). The conservative morphology of the arboreal *Atheris* species has, over the decades, led to a poor resolution of their taxonomy (Ernst & Rödel, 2002). Despite this and although the genus is still in need of full taxonomic revision (Broadley, 1998), several recent contributions have improved our understanding of its taxonomy, usually prompted by the discovery of new species (Broadley, 1998; Lawson & Ustach, 2000; Ernst & Rödel, 2002; Branch & Bayliss, 2009). Recent investigations in Tanzania's Southern Highlands have brought to light a new species of forest viper. The type series of this new taxon includes one subadult individual and three adult male specimens sufficiently distinctive to be taxonomically assessed and named. Along with *A. ceratophora*, it is the only *Atheris* species bearing horn-like scales above the eyes. Little is known yet about its ecology but it is likely to occur in only one or a very few isolated forest fragments and be of very considerable conservation concern.