



Contribution to the systematics and zoogeography of the East-African *Acomys spinosissimus* Peters 1852 species complex and the description of two new species (Rodentia: Muridae)

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⁶This paper is dedicated to Walter Verheyen and Marco Corti, both passed away before this study was completed

Abstract

We revised the taxonomic status of the putative *Acomys spinosissimus* complex based on the comparative study of specimen collections from Tanzania, Zambia, Zimbabwe, Mozambique, DR Congo and South Africa, by means of analysis of external morphology, craniometry, enzymes, mitochondrial DNA sequences and karyology. Our results confirm that *A. spinosissimus* represents a complex of species with seemingly non-overlapping distribution ranges. The distribution range of *A. spinosissimus* appears to be restricted between the Zambesi and Limpopo Rivers, while the reinstated *A. selousi* (that includes *A. transvaalensis*) occurs further to the South (*i.e.* northern limit seemingly just north of the Limpopo River). The investigated populations north of the Zambezi River are morphologically and genetically distinct from *A. spinosissimus* and *A. selousi*. Based on this evidence, we described *Acomys muzei* **sp. nov.** and *Acomys ngurui* **sp. nov.**, each one occurring separately along one side of the Eastern Arc Mountains. Finally, we lacked sufficient information to describe a third new species from the area north of the Zambesi River.

Key words: *Acomys spinosissimus*, taxonomy, cytochrome *b*, craniometry, morphology, enzymes

Introduction

Acomys or spiny mice are widespread throughout all of Africa, the near and Middle East, and some Mediterranean islands (Corbet 1978). This genus has been the subject of several molecular and morphological analyses due to their basal phylogenetic position within the Muridae (Sarich 1985; Denys *et al.* 1992 a, b; Chevret *et al.* 1993; Chevret & Hänni 1994; Hänni *et al.* 1995).

Since 1939, when G. M. Allen listed the recorded African species of *Acomys* in his “Checklist of African Mammals” (Allen 1939), African members of the genus have been the subject of a series of studies that resulted in different species lists (*e.g.* Setzer 1975). The most recent annotated checklist recognizes 19 species, but as for many other African rodent genera, their taxonomy requires further study (Musser & Carleton 2005).

To date, the information available for documenting species-limits in *Acomys* includes chromosomal studies and reviews (Matthey 1954, 1956, 1963, 1965a,b, 1968; Volobouev *et al.* 1991; Sokolov *et al.* 1992, 1993; Denys *et al.* 1994; Volobouev *et al.* 2007); studies of cranial characters and morphology of molars (Petter 1983; Denys *et al.* 1994), morphology of spermatozoa (Baskevich & Lavrenchenko 1995) and allozyme and mtDNA studies of species-assemblages (Janecek *et al.* 1991; Barome *et al.* 1998, 2000, 2001). The significant contribution by Dippenaar