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## Annotated list of Tettigoniidae (Orthoptera) from the East Usambara Mountains, Tanzania and new Tettigoniidae species from East Africa

CLAUDIA HEMP

University of Würzburg, Dept. Animal Ecology and Tropical Biology (Zoology III), Am Hubland, 97974 Würzburg, Germany. Email: [claudia.hemp@uni-wuerzburg.de](mailto:claudia.hemp@uni-wuerzburg.de)

### Abstract

A list of the Tettigoniidae (Orthoptera) of the East Usambara Mountains is presented and 16 new species are described from East Africa. A total number of 29 Tettigoniidae species is recorded for the East Usambara Mountains. New species are described from the Shimba Hills in Kenya, coastal Tanzania from the Kazimzumbwi forest reserve, Mt Kilimanjaro, the East and West Usambara and Uluguru Mountains in Tanzania, namely in Conocephalinae *Afroagraecia pwania* n. sp., *Afroagraecia shimbaensis* n. sp., *Afroanthracites discolor* n. sp., *Afroanthracites jagoi* n. sp. and *Afroanthracites viridis* n. sp., in Meconematinae *Afrophisis flagellata* n. sp., *Afrophisis kisarawe* n. sp., *Afrophisis mazumbaiensis* n. sp. and *Afrophisis pseudoflagellata* n. sp., in Hexacentrinae *Aerotegmina megaloptera* n. sp., in Mecopodinae *Apteroscirtus cristatus* n. sp., and *A. planidorsatus* n. sp., in Phaneropterinae *Gelotopoia amabilis* n. sp., and in Pseudophyllinae *Cymatomerella pardopunctata* n. sp. and *Cymatomera viridimaculata* n. sp. Seven species are endemic to the East Usambara Mountains which are 25% of the recorded forest-bound bush crickets. The Tettigoniidae fauna is compared between the East Usambara Mountains and Mt Kilimanjaro and mechanisms of speciation discussed in Orthoptera for the area. New Tettigoniidae records are given for Mt Kilimanjaro (*Oxyecous apertus* Ragge, *Tropidonotacris grandis* Ragge and *Eurycorypha conclusa* Hemp).

**Key words:** New species, new records, species list, diversity, endemism, speciation, East Africa, Tettigoniidae

### Introduction

The Eastern Arc Mountains are famous for their high biodiversity and their degree of endemism (e.g. Burgess *et al.* 2007). Thirteen separate mountain blocks ranging from southern Tanzania to southern Kenya belong to the Eastern Arc Mountains harbouring about 3300 km<sup>2</sup> of montane forest. Burgess *et al.* (2007) listed 96 endemic and another 71 near-endemic vertebrate species and about 800 plant species in the Eastern Arc Mountains. Except for millipedes (mostly Enghoff working group, e.g. Enghoff 2011; Frederiksen & Enghoff 2012), part of Lepidoptera (Technical papers of FRONTIER Tanzania, e.g. Cunneyworth & Stubblefield (1996), Doody *et al.* (2001)), Odontata (e.g. Clausnitzer 2001), Homoptera (McKamey *et al.* 1999), and part of the Orthoptera (e.g. Hochkirch 1998), invertebrate biodiversity in the Eastern Arc Mountains is poorly known. Especially for groups with limited dispersal ability and narrow habitat demands a high degree of endemism must be assumed.

FRONTIER Tanzania undertook intensive biodiversity surveys between 1996 and 2002 published via Technical Reports (accessible at <http://www.easternarc.or.tz/eusam>). While comprehensive knowledge about vegetation, birds, mammals, amphibians and part of the Lepidoptera in the East Usambara Mountains was gained, most invertebrate groups were not studied although numerous specimens were sampled via pitfall traps and during fogging campaigns. McKamey *et al.* (1999) evaluated the sample set for Homoptera. However nearly all other invertebrate groups are still stored in various museum collections. Part of the Orthoptera samples collected 1995 by McKamey *et al.* and FRONTIER Tanzania were evaluated in this study (also see Hemp 2013b).

First collections giving a rough overview of the Orthoptera fauna of the West and East Usambaras were made by a Swedish Expedition at the beginning of the last century (Sjöstedt 1909). Hochkirch (1996) described one Catantopinae species from the East Usambara Mountains and listed 42 Caelifera (Hochkirch 1998) in a faunistic

enabling me to visit the Natural History Museum London, UK, the Naturkunde Museum of Vienna, Austria, the Orthoptera collection of the Naturhistoriska Riksmuseet, Stockholm, Sweden, the Orthoptera collection of the Africamuseum, Tervuren, the Natural History Museum Paris, France and the collection of the Zoological Museum in Copenhagen, Denmark. Thanks also to Prof Henrik Enghoff for his kind assistance allowing me to study the Orthoptera collection in the Zoological Museum of Copenhagen. Special thanks to Simon Poulain assisting in taking images of *Afrophisis pseudoflagellata*.

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