



## Taxonomic, bioacoustic and faunistic data on a collection of Tettigoniodea from Eastern Congo (Insecta: Orthoptera)

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### Abstract

During a 14-day excursion in March 1990, 28 species of tettigonioids were found at Irangi (1°54'S, 28°27'E), ca. 100 km north west of Bukavu at Lake Kivu (Democratic Republic of the Congo, formerly Zaire), and at other localities near Bukavu. One species — *Arantia (Arantia) gracilicercata* Heller **sp. n.** — is new to science, another one — *Pantecphylus helleri* Schmidt *et al.* 2004 — was already described as new in a generic revision. All our specimens of the morphologically quite diverse and sexually dimorphic phaneropterine genus *Arantia* were studied using molecular methods. We propose a new subgenus *Arantia (Euarantia)* Heller subgen. n. based on relative tegmen width. Songs and stridulatory organs were studied in 9 species. Two phaneropterines, *Horatosphaga leggei* and *Pardalota asymmetrica*, showed remarkable calling songs lasting more than 10 s and produced by quite complicated stridulatory movements. The song of the large phaneropterine *Zeuneria biramosa* is noteworthy because of its unusually low carrier frequency of 3.7 kHz. Based on the examination of other specimens and species, some taxonomic changes are proposed (Phaneropteridae Burmeister, 1838 stat. rev.; *Afromecopoda monrovia* (Karsch, 1886) stat. rev.; *Leprosциrtus ebneri* Karny, 1919, syn. n., *Leprosциrtus karschi* Karny, 1919, syn. n., *Leprosциrtus granulatus aptera* Karny, 1919, syn. n., all synonyms of *Leprosциrtus granulatus* (Karsch, 1886); *Lanistoides* Sjöstedt, 1913 stat. rev.; *Plastocorypha cabrai* Griffini, 1909 stat. n.).

**Key words:** taxonomy, bioacoustics, stridulatory movement, song, ITS2 gene, histone H3 gene, 16S rRNA gene, 28S rRNA gene, numts

### Introduction

While for parts of Africa (South and East) many new studies on at least some groups of Orthoptera are available (see e.g., Naskrecki & Bazelet 2012, Hemp 2013), in other regions no new data have become available since the time the respective countries became independent in the last century. Even if relative recent publications existed, they are often based on material collected during colonial times. One of these regions is the Central African rain forest block in Congo basin. For this huge region only four papers focusing on Orthoptera were published after 1970 (according to Ingrisich & Willemse 2004, updated, and to own literature data, in both search for “Congo”), except for the studies of Schmidt on the pseudophylline genus *Pantecphylus* (Schmidt *et al.* 2004, Schmidt 2006a, b). Schmidt studied old material in different museums and used specimens and data collected during our excursion in the year 1990 (see below). Concerning Tettigoniodea, the last new species in the Congo area seems to have been collected in 1961 (*Enyaliopsis monsteri*; Glenn 1991). Even faunistic and behavioural data are rare, and acoustic recordings do not exist except for the above mentioned *Pantecphylus* and for *Karniella crassicerca* (Hemp *et al.* 2010a), which was also collected during this 1990 excursion.

In the following, we present additional orthopterological results from this journey. In spring 1990, a group of four biologists (KGH, MV, Carmen Liegl (Weber), Alois Liegl) made an excursion to the Kivu region of Congo (Zaire) and Rwanda, mainly looking for bats. The area is biogeographically especially interesting because here the

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