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A revision of the genus *Afroheterozercon* (Acari: Heterozerconidae)

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Abstract

Six new species of *Afroheterozercon*, *A. mahsbergi*, *A. sanghae*, *A. goodmani*, *A. gabonensis*, *A. tanzaniensis* and *A. madagascariensis*, are described from a range of localities in sub-Saharan Africa, bringing the total number of described species in the genus to ten. These mites appear to be common on especially larger millipedes. Distribution data suggest locality, rather than host, specificity. A preliminary analysis of relationships provided relatively weak resolution and no evidence of geographically restricted lineages.

Key words: Diplopoda, Heterozerconidae, taxonomy

Introduction

Mites in the family Heterozerconidae are distributed throughout most tropical and subtropical regions, with the exception of the Australian faunal region. The adults of most species are found attached to medium to large (> 4cm) millipedes, while immatures appear to live off-host either in millipede nests (Gerdeman *et al.* 2000) or in the litter (Gerdeman & Garcia 2009(2010)). Adults of the genus *Amheterozercon* Fain 1989 (= *Zeterohercon* Flechtmann & Johnston 1990) are exceptional in that they are parasitic on snakes (Squamata, Serpentes) and worm lizards (Squamata: Amphisbaenidae). Feeding biology for the adult millipede associates is still not clear, however immatures are predatory and have been observed feeding on immature mites (e.g. Oribatida) and other small arthropods (e.g. Collembola) (Gerdeman *et al.* 2000; Gerdeman & Garcia 2010). So far, only 14 species have been described in the entire family, but this is clearly an underestimate of actual diversity. The current study was undertaken to address this issue, by describing a wider range of taxa, starting with African material.

The genus *Afroheterozercon* Fain, 1989 was described to accommodate adults of three species described from the Democratic Republic of Congo, *A. spirostreptus* (Fain 1988) from *Spirostreptus cornutus* Attems, *A. pachybolus* (Fain 1988) from *Pachybolus macrosternus* Cook, and *A. ancoratus* Fain 1989 from a termite nest (*Cubitermes* sp.). The genus is characterised by the presence of series of anchor-shaped spines on the latero-ventral region of the opisthosoma, and a specific pattern of setal modifications on the femur of legs II in the male (Fain 1989). We also include *Heterozercon cautus* Berlese 1924 (= *Afroheterozercon cautus* (Berlese) comb. nov.), described from “East Africa”. The brief description of this species (Berlese 1924) is not clear on the shape and degree of development of the lateral spines (he mentions “Margo lateralis ventris scutulic minimis subrotundatis 10 numero, seriatis, ornatus”, which may refer to the lateral spines). The description does specify the presence of a single, massive and curved spine on femur II of the male (“calcari robusto”), another condition that is unique to *Afroheterozercon*. A more complete analysis of evidence favoring inclusion of *H. cautus* in *Afroheterozercon* is presented below. After this change all reported Heterozerconidae from sub-Saharan Africa are assigned to the genus *Afroheterozercon*.