Zootaxa 2753: 42–52 (2011)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Afrophilodana africana n. gen, n. sp. (Acari: Mesostigmata) from Kenya: the second species of the family Philodanidae

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Abstract

A new monotypic genus, *Afrophilodana africana* **n. gen, n. sp.** (Trigynaspida: Parantennuloidea: Philodanidae) is described from two females found in soil samples from Kenya. The family Philodanidae Kethley, 1977 is redefined and the affinities of the new genus discussed. The leg chaetotaxy is also provided and compared with other members of the Parantennuloidea.

Key words: Antennophorina, trigynaspid mites, new genus, new species, taxonomy

Introduction

The family Philodanidae Kethley, 1977a (Acari: Mesostigmata) are unusual trigynaspid mites, and a curiosity even within the Trigynaspida, being represented by a single species, *Philodana johnstoni* Kethley, 1977a, collected from a tenebrionid beetle in North America. Initially, the Philodanidae were provisionally placed in the Parantennuloidea on the basis of morphological evidence (Kethley 1977a), a decision later supported by a phylogeny of leg chaetotaxy (Kethley 1977b). In the latter work another undescribed genus "NG. Jamaica" is also regarded as a philodanid mite, but this species has never been described.

The Parantennulidae and Promegistidae are the only other families of Parantennuloidea (Kim 2004; Kim & Castagnoli 2010). The Parantennulidae are represented by just five species associated with carabid beetles (*Micromegistus* Trägårdh, 1948, 3 species), centipedes (*Parantennulus* Berlese, 1903, 1 species) and millipedes (*Diplopodophilus* Willmann, 1940, 1 species). The Promegistidae is a monotypic family, based on *Promegistus armstrongi* Womersley, 1958, which is common on carabid beetles in eastern Australia (Womersley 1958; personal observations). Together, the Parantennuloidea seem to form a group intermediate between the two major groups of Trigynaspida, the Antennophorina and Cercomegistina; i.e. the Parantennuloidea are the sister group to the remainder of the Antennophorina (Kethley 1977b; Kim 2004). In particular, the presence of just five or six setae on the palp genu (not seven) is shared by the Parantennuloidea and Cercomegistina. However, even within the Antennophorina some other groups possess these cercomegistine characters, especially the Paramegistidae (Kim 2004), and the species described herein has a weak gnathotectal keel. The Parantennuloidea were redefined by Kim (2004), but the only synapomorphic character that defines them is the presence of a pseudosternogynum – an anteromedial genital plate that bears no pores or setae. This shield is free in the Parantennulidae and Promegistidae, but fused with the sternal shield in the Philodanidae.

Although the Philodanidae seemed unusual amongst Antennophorina with its divided dorsal shield, re-examination by Kim (2004) found that the dorsal shield is entire in the male, but the female has a thin line of fusion. All other features are unique or rare convergences: the circular pore fields at the level of coxa III, form of the internal genitalia, and extension of the sternal region into the sternogynal region are unique.

The Hungarian Natural History Museum is rich unsorted soil samples from Kenya, from which several new mite records (mostly Oribatida and Uropodina mites) have already been presented (e.g. Kontschán 2008, 2009;

 Accepted by B. Halliday: 5 Jan. 2011; published: 31 Jan. 2011