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Post larval stages of *Tanytydeus beyzavii* sp. nov. (Acari: Paratydeidae) from Iran

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Abstract

A new species *Tanytydeus beyzavii* **sp. nov.** (Acari: Paratydeidae) is described and illustrated from soil under plants in Iran. Leg setation is presented for the genus, as is a key to species. The genus *Hexatydeus* **syn. nov**. is synonymised with *Tanytydeus* because the former represent nymphal stages of *Tanytydeus*.

Key words: Gum bushes, soil living, Paratydeoidea, *Hexatydeus,* leg setation, review

Introduction

Paratydeid mites are widespread but yet rarely recorded mites that live mostly in edaphic habitats such as soil and litter, rotten wood, and moss, but also arboreal soil-like habitats such as under tree bark and in bird nests (Theron *et al.* 1969; Delfinado & Baker 1974; Seeman & Walter 1999; Dönel *et al.* 2012). Little is known of their life history, but the sickle-shaped chelicerae indicate they are predatory, and their elongate bodies and reduction in sensory structures suggest they readily inhabit the pore space of soils.

The family has seven genera, but their definition is confused because of a poor understanding of ontogeny in the family (Dönel *et al.* 2012). Of the 14 described species, at least six were described as immature life stages but assumed to be adult females. These immature characteristics (e.g. number of genital papillae, number of genital setae) were used to establish and distinguish genera. Dönel *et al.* (2012) attempted to clear up this confusion by providing a likely ontogeny of papillae, genital and aggenital setae in the family, but refrained from using this to make synonymies pending further studies.

The genus *Tanytydeus* Theron *et al.* 1969 currently contains four species, namely: *Tanytydeus cristatus* Theron *et al*. 1969 from South Africa, *T. neocristatus* Kandeel and Hoda, 1984 from Egypt, and *T. lamington* Seeman and Walter, 1999 and *T. kakadu* Seeman and Walter, 1999 from Australia. In this paper a fifth species, *T. beyzavii* **sp. nov.**, is illustrated and described, and the genus *Tanytydeus* redefined.

Material and methods

Litter and soil samples were obtained from soil under plants. Mites were extracted in a Tullgren funnel, mounted directly in Hoyer's medium, dried, then measured, identified and drawn under 1000 x magnification with an Olympus BX51 or Nikon Eclipse 80i microscope equipped with differential interference contrast microscopy (DIC) and a drawing tube. Body length measurements represent the distance between the base of the gnathosoma and the end of the idiosoma; width was measured above coxa III. Distances between setae were measured between setal bases. Legs were measured from the trochanter to the pretarsus.

To gain a better understanding of leg setation and body divisions in *Tanytydeus*, we also examined the type specimens of *T. cristatus*, *T. lamington* and *T. kakadu*, and compared these species to the setation of *Scolotydaeus anatolicus* Dönel *et al.*, 2012. The terminology and abbreviations used in the description of the new species follows

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Leg setation of the Paratydeidae was first presented for *S. anatolicus* by Dönel *et al.* (2012). Within *Tanytydeus*, the new species and *T. kakadu* show the maximum complement of leg setae currently known for the family (Table 1). In view of this more complete setation, some modifications to the notations presented in Dönel *et al.* (2012) are required.

On tarsus II of *S. anatolicus*, the tiny seta situated next to the solenidion is *bl″*, not *ft′* as presented in Dönel *et al.* (2012). The seta labelled *tc′* is instead considered *ft′*, and seta *tc′* is absent. The same setation is also found in *T. cristatus* (Table 1). The full complement of tarsal phaneres is (*ft*), (*tc*), (*u*), *pl′, bl″* and *ω*, with seta *tc′* absent in *T. cristatus* and *S. anatolicus* and seta *pl′* absent in *T. lamington* (Table 1).

On tarsus III, the five setae labelled by Dönel *et al.* (2012) need to be re-interpreted in light of the setation of all species of *Tanytydeus*, which have six setae, i.e., (*ft*), (*tc*) and (*u*). The seta *pl″* in Dönel *et al.* (2012) is now considered absent; this seta is *tc″*, and the setae labelled as the tectal pair are instead considered the fastigial pair. In *S. anatolicus* seta *tc′* is absent on tarsus III.

On tarsus IV, the five setae labelled by Dönel *et al.* (2012) are interpreted differently to those on tarsus III. Again, seta *pl″* is absent and this seta should be considered *tc″*. However, the setae labelled as (*tc*) are considered a fastigial and a tectal seta, with the more proximal, dorsal seta being changed from *tc″* to *ft′*. The five setae on tarsus IV of *S. anatolicus* and all *Tanytydeus* are therefore *ft′*, (*tc*) and (*u*) (Table 1).

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