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A review of the genus *Traegardhia* (Acari, Prostigmata, Rhagidiidae) with descriptions of new species and a key to species

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Abstract

A new supplemented concept of the genus *Traegaardhia* Zacharda, 1980 (Acari: Rhagidiidae) is presented and descriptions of seven new species of the genus are given. These are *Traegaardhia cavernarum* n. sp., *T. cavernicola* n. sp., *T. distosolenidia* n. sp., *T. gracilis* n. sp., *T. nasuta* n. sp., *T. subterranea* n. sp., from caves located in northeastern Prealps, Italy, and *T. similis* n. sp. from the Ozark Plateaus, southeastern USA. The neotype of *Foveacheles holsingeri* Zacharda, 1980 is assigned, the species is redescribed and together with *Foveacheles paralleloseta* Zacharda, 1985, transferred into the genus *Traegaardhia*. *Foveacheles thaleri* n. sp. is described as the possible epigeal ancestor of the derivative troglomorphic *T. subterranea* and the adaptive shift hypothesis and parapatric speciation of *T. subterranea* is outlined. A key to adults of the known eleven species of the genus *Traegaardhia* is presented. The biogeography, morphological adaptations to life in caves (troglomorphisms), vicariance and distribution of the presented taxa are briefly discussed. All new taxa are authored by M. Zacharda only.

Key words: Rhagidiidae, *Traegaardhia*, Italy, USA, caves

Introduction

Predatory soil mites of the family Rhagidiidae are a morphologically uniform group whose representatives frequently differ only in subtle structural characters. Until recently, only two genera, *Rhagidia* Thorell (1872) with filiform trichobothria *sc*₁ and *Coccorhagidia* Thor (1934) with clavate trichobothria, were distinguished in this family (e.g., Thor & Willmann 1941, or Strandtmann 1971), primarily because of this uniformity.

Subsequently, in a monographic revision of previously and newly described taxa, Zacharda (1980) proposed the monospecific genus *Traegaardhia* for a species of uncommon rhagidiid mites which were deposited in the collection of Carl Willmann and embedded on slide mounts. These preparations were labelled as *Rhagidia dalmatina* Willm., Abs. 669/1004, det. C. Willmann (one female and one male); *Rhagidia longipes*, Abs.35, det. C. Willmann (one female); *Rhagidia spelaea* WKL., Abs. 1008, det C. Willmann (one male); *Rhagidia*, Dalmátia, det. C. Willmann (one female). However, these mites substantially differed from species