



## A new species of the family Trochometridiidae (Acari: Heterostigmata) associated with *Paulusiella* sp. (Coleoptera: Elateridae) from Iran

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### Abstract

The mite species *Trochometridium kermanicum* Mortazavi & Hajiqaanbar **sp. nov.** (Acari: Heterostigmata: Trochometridiidae) associated with an elaterid beetle of the genus *Paulusiella* (Insecta: Coleoptera) is described from Iran. This is the first record of association between trochometridiid mites and beetles of the family Elateridae. The host range of the family Trochometridiidae is reviewed and a key to world genera and species is provided.

**Key words:** mite, insect, *Trochometridium kermanicum* **sp. nov.**, host range, Prostigmata

### Introduction

Two genera and five species of mites of the family Trochometridiidae are associated with different insects, mostly ground-nesting bees (Cross & Bohart 1979; Lindquist 1985; Hajiqaanbar *et al.* 2009). Although mites of the genus *Trochometridium* are most probably fungivorous, their effect, at least, on their bee hosts is like a parasitoid. The mites carry fungal spores in their sporothecae (pouch-like structures between coxae III and IV) and release them in the cells of their bee hosts. Subsequently, eggs or young larvae of the bees will die owing to development of the fungus and mite (Cross & Bohart 1979; Kaliszewski *et al.* 1995).

Presently, the genus *Trochometridium* Cross, 1965 includes four species throughout the world: *T. tribulatum* Cross, 1965 from the Holarctic region; *T. chinensis* (Mahunka 1966) from China, the Netherlands, New Guinea and Iran; *T. kazakhstanicum* Khaustov & Eidelberg, 2002 from Kazakhstan and Iran, and *T. iranicum* Hajiqaanbar & Khaustov, 2009 from Iran (Cross 1965; Cross & Bohart 1979; OConnor & Klimov 2004; Mahunka 1966; Khaustov & Eidelberg 2002; Hajiqaanbar *et al.* 2009).

In this paper, we describe the fifth representative of the genus *Trochometridium* associated with a beetle of the family Elateridae collected in southern Iran. The host range of all mites of the family is discussed.

### Material and methods

Mites were removed from a vial containing two elaterid beetles (*Paulusiella* sp.) that were collected at a light trap. Mites were cleared in lactophenol and fixed in Hoyer's medium. The morphology of the mites was studied using a phase contrast microscope (Olympus BX51) equipped with a drawing tube. All measurements in this description are given in micrometers for the holotype and one paratype (in parentheses). Morphological nomenclature follows mostly from Lindquist (1986) and in part from Hajiqaanbar *et al.* (2009). Details of geographical position have been recorded using GPS.

The holotype is deposited in the Acarological Collection, Department of Entomology, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran. The only paratype is deposited in the United States National Museum of Natural History, Washington D.C., USA.