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Tydeus shabestariensis* sp. nov. and description of the male of *Neopronematus sepasgosariani* (Acari: Tydeoidea), with a key to the Iranian species of *Tydeus

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Abstract

A new species of the family Tydeidae from Iran, *Tydeus shabestariensis* sp. nov., is described from adult males and females collected from soil in apple orchards. A key to species of *Tydeus* of Iran, based on females, is provided. The male of *Neopronematus sepasgosariani* (Tydeoidea: Iolinidae) is also described and illustrated for the first time.

Key words: Iolinidae, new record, taxonomy, Tydeidae, *Lorryia*

Introduction

Tydeid mites are common in soil, humus, litter, on plants, lichens, mushrooms, straw and hay, and some also occur in stored products, vertebrate nests and bee hives (Kaźmierski 2009). They are notably resistant to desiccation, which contributes to their abundance in exposed foliar habitats as well as to their occurrence in desert habitats (André & Fain 2000). Although a number of tydeid species have been categorized as to general lifestyle, little is actually known about the interactions of tydeids with their habitats.

After *Lorryia* sensu Kaźmierski (= *Brachytydeus* sensu André), *Tydeus* is next largest genus of the family Tydeidae. The taxonomy of this genus is complicated, with many unrecognizable species described by earlier acarologists and the existence of several systematic treatments contradicting each other (Kaźmierski 1998; André 2005). Major advances were made only recently, when re-examination of type species from Oudemans' collection was made (André 2005).

The Iolinidae has been expanded by André & Fain (2000) to include the subfamilies Tydaeolinae and Pronematinae, which previously belonged to the family Tydeidae. Along with the Iolinidae, this family includes 125 described species in 36 genera and is characterized by the palp-like form and function of leg I (Pronematinae), the loss of genital papilla and, within the Iolininae, the acquisition of direct copulation (Walter *et al.* 2009). Iolinid species are free living in soil, on plants, in beehives and phoretic on insects; some are known to occur on citrus plants in southern Africa (Ueckermann & Grout 2007).

Material and methods

In this study, 50 soil samples were collected in an apple orchard at four different times of the year 2012-13 (mid-July, mid-August, mid-September and mid-October) from soil of the Shabestar area [N 38°10'49"; E 45°42'10"], East Azerbaijan province, Iran. Mites were extracted from the soil with a Berlese funnel, then cleared in Nesbitt's Fluid, mounted on microscope slides in Hoyer's medium and identified with a phase contrast microscope