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Two new species of Rhodacaridae (Mesostigmata: Rhodacaroidea) from Iran

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Abstract

Multidentorhodacarus saboorii **n. sp.** and *Rhodacarellus iraniensis* **n. sp.** (Acari: Mesostigmata: Rhodacaroidea: Rhodacaridae) are described and figured. These are the first descriptions of Rhodacaridae mites from Iran.

Key words: *Multidentorhodacarus*, *Rhodacarellus*, soil mites, taxonomy

Introduction

Rhodacaridae Oudemans is a widespread family of free living mites found in the soil and in accumulations of decaying organic material such as compost, manure and tidal debris (Lindquist *et al*., 2009). They have been found to feed on insect larvae, springtails, nematodes and mites (Karg, 1971; Lee, 1974; Sardar & Murphy, 1987; Walter *et al*., 1988; Lindquist *et al*., 2009). The biology of mites of this group is poorly known, but at least one species, *Protogamasellopsis posnaniensis* Wiśniewski & Hirschmann, has been reported as potentially useful as a biological control agent of insect and mite pests in the soil (Castilho *et al*., 2009).

The world-wide fauna of Rhodacaridae includes 148 species in 15 genera (Beaulieu *et al*., 2011). *Multidentorhodacarus* Karg and *Rhodacarellus* Willmann are two of the most diverse genera of Rhodacaridae, with 16 and 20 described species respectively. The objective of this paper is to provide taxonomic descriptions of two new species of Rhodacaridae found in surveys conducted in Iran, where the fauna of this family is very poorly known (Kamali *et al*., 2001; Haddad Iraninezhad *et al*., 2003; Faraji *et al*., 2006).

Material and methods

Orchard soil samples were collected in different parts of Isfahan and Kerman Provinces in central and southeastern of Iran and taken to a laboratory where mites were extracted from the samples using a Berlese funnel. Mesostigmatid mites were mounted in Hoyer's medium and later separated into families. Rhodacarid mites were separated into morphospecies, and representative samples of each morphospecies were examined under a phase contrast microscope.

The mites were identified to genera by considering the world taxonomic literature of mites of this family and were found to belong to two new species. They were illustrated with the use of a camera lucida and measurements were taken of structures considered taxonomically important. In the following descriptions, setal nomenclature is based on Lindquist & Evans (1965) and leg chaetotaxy is based on Evans (1963) as adapted to rhodacarid species by Castilho & Moraes (2010), with modification in relation to the identification of *s* and *r* setae for *Multidentorhodacarus*, considered necessary after our examination of other species of this genus. Measurements of each structure are given in micrometres, with the average measurement for the individuals examined followed (in parentheses) by the respective range (for variable measurements).

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