A new species of *Pachyseius* Berlese (Acari: Pachylaelapidae) from South Siberia (Russia), with a key to the species known from Asia

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Abstract

*Pachyseius anisimovi* sp. nov. is described based on specimens from soil and litter in the Altai Mountains and the West and East Sayan Mountains in South Siberia, Russia. A key to ten *Pachyseius* species known from Asia is provided.

Key words: Acari, Mesostigmata, Pachylaelapidae, *Pachyseius*, new species, Russia, Siberia

Introduction

The small genus *Pachyseius* Berlese, 1910 belongs to the family Pachylaelapidae, which includes 16 genera and about 250 species world-wide (Mašán, 2007; Mašán & Halliday, 2014). Mites of the genus *Pachyseius* are free-living representatives of the soil fauna in the temperate zone of the northern hemisphere (Mašán, 2008). The genus currently includes 20 recognised species distributed mainly throughout the Palaearctic Region, except that *P. humeralis* may have been introduced into Australia by human activities (Halliday, 2001) and unidentified species have been collected in northern Australia (Lindquist et al., 2009) and Canada (Broadbent & Tomlin, 1979).

To the present 13 species of the genus *Pachyseius* have been described from Europe: Italy (Berlese, 1910), France (Willmann, 1935), Great Britain (Hyatt, 1956), Romania (Solomon, 1982; Mašán & Fendića, 2014), Netherlands (Afiś & Nasr, 1984), Spain (Moraza, 1993), Slovakia (Mašán, 2007), Bulgaria (Mašán & Mihál, 2007) and Germany (Mašán, 2008). Seven species have been described from Asia: Russia (Nikolsky, 1982), China (Yin et al., 1986; Ma & Yin, 2000; Chen et al., 2009), Japan (Ishikawa, 1989), and Turkey (Özbek & Halliday, 2014). Two species have been recorded from West Asia—Iran, Caucasus: *P. humeralis* Berlese, 1910 and *P. angustus* Hyatt, 1956 (Nefedov, 1966; Ohandjian, 1978; Babaiean & Kazemi, 2011; Kazemi & Rajaei., 2013). *Pachyseius orientalis* Nikolsky, 1982 was described from Primorsky Krai, and also been recorded in other Asian regions of Russia: Sakhalin Island, Khabarovsky Krai, mountains of South Siberia, East Sayan and Altai (Marchenko, 2002, 2011, 2012 and collections at the Institute of Systematics and Ecology of Animals, examined by author) and in Jilin Province, China (Yin et al., 1986).

Most descriptions of the known *Pachyseius* species refer only to females. Very few publications have described or illustrated the males and juvenile stages (Karg, 1965, 1971, 1993, Moraza, 1993, Gwiazdowicz & Stănesku, 2005). The new species described here is based on the female, male, deutonymph and protonymph.

Material and methods

Mites were extracted from soil and litter using a Berlese funnel and mounted in Hoyer’s medium. The specimens were examined under a Zeiss Axioscop 40 microscope. Taxonomically relevant structures were illustrated using a Canon Power Shot G 11 camera and measured with the use of a graded ocular. Measurements of important characters are given in micrometres (µm) as a range representing the variation among all individuals examined. The nomenclature of dorsal and ventral idiosomal setae is based on Lindquist & Evans (1965) as adapted by Mašán (2007) for Pachylaelapidae. The idiosomal adenotaxy and poroidotaxy are based on Johnston & Moraza (1991).
metapodal shields and ventral-anal shield well separated; peritrematal shield at level of stigmata is narrow.

Following the observations by Karg (1965, 1971, 1993) and Costa (1966), protonymphs of *Pachylaelaps* and *Pachyseius* have a total number of 27 pairs of dorsal setae; three pairs of dorsal setae are added in the deutonymphs by addition of the r- R-row of setae. According to comments of Moraza & Peña (2005a) these dorsal setae are indicated as “z1, r2 and S1”. The protonymph of *Pachyseius anisimovi* also bears 27 pairs of dorsal setae, three pairs are added in deutonymph on dorsal shield (z1, r2, S1) and five pairs on ventro-marginal soft integument (r6, R1, R3, R4, R6, R7). Thus, the total number of dorsal and marginal setae (r-R-row) in the deutonymph of *Pachyseius anisimovi* is 36 pairs, as in adults (female and male). The following reductions occur in the leg chaetotaxy of some segments of *Pachyseius anisimovi* adults (in all examined specimens): trochanter I with five setae (1 1/2 1), one ventral seta absent, that is not typical for *Pachyseius* and *Pachylaelapidae* (Mašán, 2007); femur I with 12 setae (2 5/3 2), one ventral seta is absent. Tarsus IV of all examined specimens of females has 17 setae, and the one male examined has 18 setae. The leg chaetotaxy of deutonymph shows the same reductions as in the male: trochanter I with five setae, femur I with 12 setae; tarsus IV with a full complement of 18 setae in all examined specimens.

The new species *P. anisimovi* inhabits all types of habitats in the Altai Sayan Mountain Region: floodplains, different types of forests and alpine tundra from 500 m to 2,500 m a.s.l. No species of *Pachyseius* has yet been found in the West Siberian Plain (Davydova & Nikolsky, 1986).

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References


