



## New mites of the genus *Pachyseius* Berlese from Bulgaria (Acari: Pachylaelapidae)

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### Abstract

Three new species, *Pachyseius cicaki* sp. nov., *P. morazae* sp. nov. and *P. pachylaelapoides* sp. nov., collected from the Stara Planina Mountains in Bulgaria, are described and illustrated. A key to the females of the known species of *Pachyseius* is provided.

**Key words:** Acari, Pachylaelapidae, *Pachyseius*, description, new species, identification key, Bulgaria

### Introduction

Pachylaelapid mites (Acari, Mesostigmata, Eviphidoidea) represent a cosmopolitan group of free-living mesostigmatic mites with extraordinarily wide ecological and behavioural diversity. They constitute an important component of the fauna in all soil microhabitats of the temperate zone of the northern hemisphere.

The genus *Pachyseius* was proposed by Berlese (1910) with *P. humeralis* Berlese, 1910 as type species, and placed in the family Neoparasitidae Oudemans, 1939 (Vitzthum, 1941; Baker & Wharton, 1952; Evans, 1957), but later Evans & Till (1979) transferred this genus to the family Pachylaelapidae. Karg (1971, 1993) placed *Pachyseius* in the Macrochelidae rather than the Pachylaelapidae. Karg (1971) proposed a separate tribe Pachyseiini for the genus *Pachyseius* primarily because of the simple form of the epistome, short dorsal setae, straight peritremes and fused ventral and anal plates. Most other authors have placed the genus *Pachyseius* in the family Pachylaelapidae (e.g. Koroleva, 1977; Moraza & Johnston, 1990).

The genus is distributed mainly throughout the Palaearctic region, except that *P. humeralis* was introduced into Australia by human activities (Halliday, 2001), and an unidentified *Pachyseius* sp. has been reported from North America (Farrier & Hennessey, 1993). *Pachyseius insculpta* Keegan, 1946 from North America was transferred to the genus *Cheiroseius* Berlese, 1916 by Hennessey & Farrier (1988). Further species initially described under the generic name *Pachyseius* from the Indo-Malayan area (*P. jacobsonianus* Berlese, 1911, *P. molossus* Berlese, 1923, *P. quartus* Vitzthum, 1926), are now regarded as members of the genus *Neoparasitus* Oudemans, 1901 (Vitzthum, 1941; Moraza & Johnston, 2002; and personal examination of types in Berlese Acaroteca in Florence).

*Pachyseius* is a small genus of not more than 15 known species originally described from Europe, Siberia, China and Japan. Most of the species appear to be thelytokous. Seven species have been described from various European countries. Berlese (1910) described one species from Italy, Willmann (1935) one species from France, Hyatt (1956) one species from the British Isles, Solomon (1982) one species from Romania, Afifi & Nasr (1984) one species from Netherlands and Moraza (1993) two species from Spain. Additional non-European species are described by Nikolsky (1982), Yin *et al.* (1986), Ishikawa (1989), and Ma & Yin (2000).