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## FIRST RECORD OF TWO NEW PET-ASSOCIATED PARASITIC MITES (ACARI MESOSTIGMATA LAELAPIDAE AND MACRONYSSIDAE) FROM HUNGARY

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Kontschán J., Urszán T., Hornok S. - First record of two new pet-associated parasitic mites (Acari Mesostigmata Laelapidae and Macronyssidae) from Hungary.

During the investigation of the terrariums of snake pets, two species are reported for the first time from Hungary. Females of *Ophionyssus natricis* (Gervais, 1844) were collected from the body of a *Boa* sp. (Reptilia: Boidae), and females of *Hirstionyssus butantanensis* (Fonseca, 1932) were found on body of the new-born mice (*Mus musculus* Linnaeus) (Rodentia: Muridae) which were used as food of reptiles.

KEY WORDS: parasitic mites, terrarium, new records, Hungary.

### INTRODUCTION

From the point of view of mites (Arachnida: Acari), Hungary is one of the most intensively studied countries of the world, now with more than 2000 reported species. Contrary to the high number of known indigenous mite species, several habitats seem to be absolutely neglected, as exemplified by mites associated with exotic pets. During the last decades, exotic pets became more and more preferred all over the world, but these species are associated with different parasites (including mites) which can be introduced together with their hosts. Till today only two mite species associated with exotic pets were reported from Hungary. KONTSCHÁN (2007) reported the hissing-cockroach [*Gromphadorhina potentosa* (Schaum, 1853)] associated mite (*Gromphadorholaelaps schafferi* Till, 1969) and the millipede associated mite (*Julolaelaps pararotundatus* Ryke, 1959) from giant millipede (*Archispirostreptus* sp.). Until recently, these mite species were collected in increasing numbers of cases, so we need to suppose that the majority of their hosts are infested by them.

In the past few years, snake keepers kept sending us parasitic mites collected in terrariums. Here, two species new to the Hungary are reported.

### MATERIALS AND METHODS

The mites were collected from the terrarium by snake keepers in Budapest, in May of 2019. The mites were transferred into an empty tube and were afterwards placed in lactic acid for two weeks. The cleared mites were mounted on permanent slides, in Hoyer medium. For final identification preserved specimens were investigated with the help of a Leica 1000 microscope.

The illustrations were made with drawing tube of this microscope. The descriptions and the setal

nomenclature follow book of MAŠÁN & FENĎA (2010). Abbreviations: *lf* = lyriform fissures, *p* = pores. All measurements are given in  $\mu\text{m}$ .

### RESULTS

Family Macronyssidae Oudemans

*Ophionyssus natricis* (Gervais, 1844)

SHORT DESCRIPTION (Fig. I). Dorsal and ventral idiosoma neotrichous. Dorsal body with a predorsal shield covered by 1/3 part of idiosoma and with a small and rounded postdorsal shield. Sternal shield quadrangular and bears two pairs of sternal setae, other two pairs of sternal setae situated on membranous cuticle between coxae II and III. Genital shield of female narrow, anal shield triangular with three setae. Peritremes short, prestigmatid part rich on coxae II.

NOTES TO THE MORPHOLOGY. Numerous illustrations about this species marked two pairs of small and rounded platelets posterior to predorsal shield (see MULLEN & O'CONNOR, 2019, KESKIN, 2021), these characters were not observed on Hungarian specimens (Fig. I).

Family Laelapidae Berlese

*Hirstionyssus butantanensis* (Fonseca, 1932)

SHORT DESCRIPTION (Fig. II). Dorsal and ventral idiosoma neotrichous. Dorsal shield with 26 pairs of needle-like setae. Sternal shield arched, central part short, setae *st1* reaching to posterior margin of sternal shield. Ventral part of tarsi II with a pair of stout, claw-like ventral setae. Coxal spur formula: 0-2(1+1)-2(0+2)-1(0+1). Genital shield wide, anal shield longer than wide.

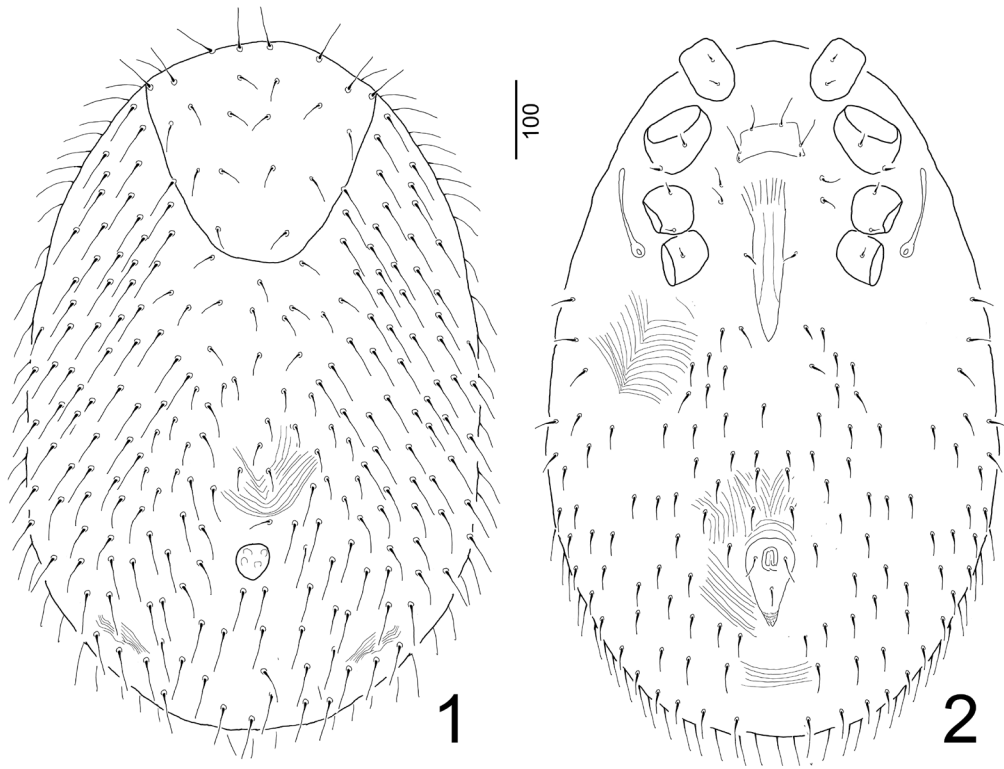


Fig. I - *Ophionyssus natricis* (Gervais, 1844), dorsal view (1), ventral view (2).

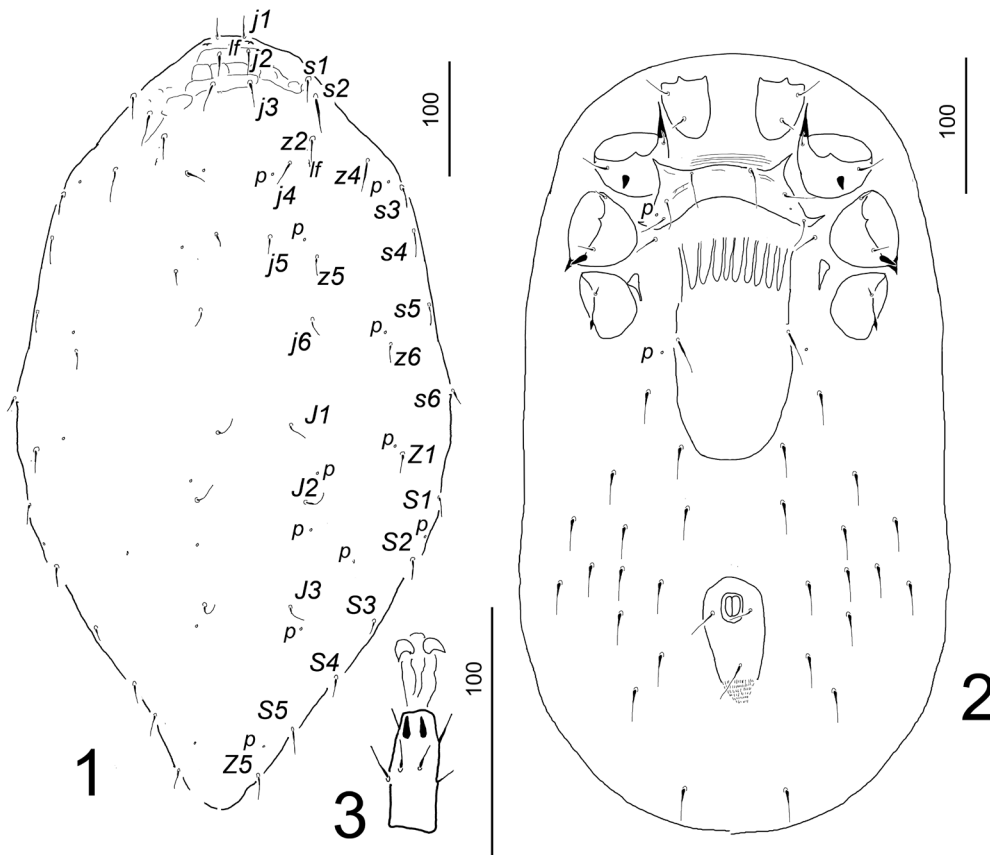


Fig. II - *Hirstionyssus butantanensis* (Fonseca, 1932), dorsal shield (1), ventral view (2), ventral view of tarsus II (3).

NOTES TO THE MORPHOLOGY. Contrary with MAŠÁN & FENĎA (2010) illustrations, the Hungarian specimens have reticulate sculptural pattern on anterior area of dorsal shield, and two pairs of lyriform fissures and eleven pairs of pores on dorsal shield.

#### DISCUSSION

The snake mite (*O. natricis*) is a widely introduced species that was described from European reptiles and later reported from all biogeographic realms (MIRANDA *et al.*, 2017). Besides the native snakes, this species is found on exotic pets as well, like on *Boa* spp., *Corallus* spp. and *Python* spp. Till today this species was reported neither on native nor on exotic snakes from Hungary, but based on the very extensive elevations in the number of imported exotic pet snakes, the introduction of this species was expected in Hungary. This species has an important veterinarian role, as it may cause shedding and anaemia in its hosts (ŠLAPETA *et al.*, 2018). On other hand, human infestation was also observed (SCHULTZ, 1975). Therefore, the emergence of this mite species in Hungary has implications from both veterinarian and human health point of view.

The other species is presumably native to Hungary. *Hirstionyssus butantanensis* is known from the neighbouring Slovakia, where MAŠÁN & FENĎA (2010) presented a single female specimen associated with *Microtus arvalis* (Pallas) (Rodentia: Cricetidae) in Slovakia. MAŠÁN & FENĎA (2010) based on ZUEVSKY (1970) mentioned that this species is cosmopolitan and usually prefers murine rodents of the genera *Mus* and *Rattus*. The Hungarian specimens were also collected from the genus *Mus* (from bred *M. musculus*), but we do not have any information about the exact source and mode of infestation by this mite among relevant mice. Maybe, the breeding facility of mice became infested from the local area of this mite species, or it was also introduced with its host from abroad.

These two newly reported mite species suggest that the acarofauna of this so intensively studied country may still have numerous white spots, like the micro-ecosystems of exotic pets, which can thus raise veterinarian and human health concerns.

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