

FIVE NEW RECORDS OF RAPHIGNATHOID MITES (ACARI: RAPHIGNATHOIDEA) FROM POLAND

SALIH DOĞAN^{1*}, SEVGI SEVSAY¹, JOANNA MAKOL²,
ERHAN ZEYTUN¹ AND EVREN BUĞA¹

¹Biology Department, Arts and Sciences Faculty, Erzincan University, Erzincan, Turkey

²Zoology and Ecology Department, Faculty of Biology, Wrocław University of Environmental and Life Sciences, Wrocław, Poland

*Corresponding *E mail*: salihdogan@erzincan.edu.tr

Abstract: Five raphignathoid (Acari: Raphignathoidea) mite species, including three of family Stigmaeidae, *Eustigmaeus rhodomela* (KOCH), *Mediolata oblecta* DÖNEL and DOĞAN, *Stigmaeus glabrisetus* SUMMERS, one of Cryptognathidae, *Favognathus cucurbita* (BERLESE), and one of Barbutiidae, *Barbutia anguineus* (BERLESE), are recorded as new for the Polish fauna. This is the first report of the family Barbutiidae from Poland.

Key words: Acari, Raphignathoidea, new records, Poland

INTRODUCTION

The superfamily Raphignathoidea KRAMER (Acari: Prostigmata) comprises about 900 species and 62 genera in 11 families (FAN 2005, DOĞAN 2006, ZHANG *et al.* 2011). They are of worldwide distribution, abundant in most geographical regions (FAN and ZHANG 2005, DOĞAN 2006).

Barbutiidae ROBAUX is a rarely found, small family containing only one genus *Barbutia* OUDEMANS and five species: *B. anguineus* (BERLESE), *B. australia* FAN, WALTER and PROCTOR, *B. iranensis* BAGHERI, NAVAEI and UECKERMANN, *B. longinqua* FAN, WALTER and PROCTOR and *B. perretae* ROBAUX. This uncommon family is placed in Raphignathoidea. Although, Barbutiidae has been considered a close relative of Anystoidea, Tetranychosidea and Paratydeoidea by

some authors (DOĞAN and DÖNEL 2009). These mites live in or on soil, litter, moss and lichens. Although these mites have been reported from Australia, Iran, Italy, Turkey, Russia and USA (SUMMERS 1964, ROBAUX 1975, WAINSHTEIN and KUZNETSOV 1978, FAN *et al.* 2003, DOĞAN and DÖNEL 2009, BAGHERI *et al.* 2010), they have not previously been recorded from Poland.

Mites of the family Cryptognathidae OUDEMANS can be recognized by the presence of a protective hood anterior to the propodosoma and retractable gnathosoma. This family comprises 57 species in three genera, *Cryptognathus* KRAMER, *Cryptofavognathus* DOĞAN and DÖNEL and *Favognathus* LUXTON. They are generally collected from litter, soil, moss, lichens, bark and leaf mould (DOĞAN and AYYILDIZ 2004, DOĞAN 2008). Currently, this family is represented by one species in Poland, namely *Cryptognathus lagena* KRAMER (KAŻMIERSKI 2008).

The family Stigmaeidae is a large cosmopolitan group in the superfamily Raphignathoidea. They live in or on soil, grass, leaves, mulch, lichens, bark, beetle frass, crevices in rocks and leaf cavities, and a few of them are parasitic on phlebotomine flies (DÖNEL and DOĞAN 2011b). At present, it comprises 32 valid genera and about 500 species (DOĞAN *et al.* 2011, 2012). Up to the present, a total of 22 species in 8 genera of this family have been reported from Poland: *Cheylostigmaeus howellsi* EVANS, *Eustigmaeus anauniensis* (CANESTRINI), *E. brevivestitus* KAŻMIERSKI and DOŃCZYK, *E. clavatus* (CANESTRINI and FANZAGO), *E. formosus* KAŻMIERSKI and DOŃCZYK, *E. longisetosus* (WILLMANN), *E. microsegnis* (CHAUDHRI), *E. myrtea* (CHAUDHRI), *E. pinnatus* (KUZNETSOV), *E. segnis* (KOCH), *Ledermuelleriopsis plumosus* WILLMANN, *Mediolata granaria* GONZALEZ, *M. pini* (CANESTRINI), *Stigmaeus clitellus* SUMMERS, *S. corticeus* KUZNETSOV and WAINSTEIN, *S. longipilis* (CANESTRINI), *S. pilatus* KUZNETSOV, *S. planus* KUZNETSOV, *S. sphagneti* (HALL), *Storchia robusta* (BERLESE), *Villersia sudetica* WILLMANN, and *Zetzellia mali* (EWING) (KAŻMIERSKI 2000, KAŻMIERSKI and DOŃCZYK 2003, 2008).

This paper adds five species in three families to the mite fauna of Poland: *Barbutia anguineus* (BERLESE) (Barbutiidae); *Favognathus cucurbita* (BERLESE) (Cryptognathidae); *Eustigmaeus rhodomela* (KOCH), *Mediolata obtecta* DÖNEL and DOĞAN, *Stigmaeus glabrisetus* SUMMERS (Stigmaeidae).

Methods used for the collection, extraction, preparation of the specimens were as discussed by DOĞAN and AYYILDIZ (2003) and DOĞAN (2006), and so will not be repeated here. The mite specimens were examined and identified with the aid of a Leica DM 4000 B phase contrast microscope. Materials examined are deposited in Acarology Laboratory of Erzincan University, Erzincan, Turkey.

RESULTS

Family Barbutiidae ROBAUX

Genus *Barbutia*

Barbutia anguineus (BERLESE)

This species can be distinguished from other species by the following characters: Dorsal body setae *ve* long more than about two times length of *sce*,

extending beyond bases of c_1 ; vi about two times length of sci ; c_1 about one half of c_2 ; d_1 , e_1 and f_1 subequal. It is the first report of the family Barbutiidae from Poland.

Material examined – Two deutonymph females from soil under *Ulnus* sp., close to the University Campus (Wrocław University of Environmental and Life Sciences - WUELS) on the Odra River, Wrocław, 51°05'49.12" N 17°05'31.09" E, 144 m, 15 May 2012, S. DOĞAN.

Distribution – Italy, Russia, Turkey and USA (SUMMERS 1964, ROBAUX 1975, FAN *et al.* 2003, DOĞAN and DÖNEL 2009).

Family Cryptognathidae OUDEMANS

Genus Favognathus

***Favognathus cucurbita* (BERLESE)**

Favognathus cucurbita can be defined as follows: the anterior edge of hood smooth, hood with five to eight dimples in each longitudinal row, dimples of hood without small pores; dorsum partly reticulated, with faint striae, dorsum with punctations not evenly distributed over the whole surface (no pores on reticulum), rosette patterns absent, prosternal apron with 17 dimples, coxisternal region non-porous without striae, venter partly reticulated, with striae, addorsal setae *tc* on tarsus II dissimilar.

Material examined – One female from litter, close to the entrance of Mopkowy Tunnel used as a roost by bats, Nowogród Bobrzański, 51°48'42.7" N 15°13'02.3" E, 81 m, 15 May 2010, D. Łupicki.

Distribution – China, Ireland, Italy, Sardinia Island, Latvia, Somalia, Turkey and Ukraine (Crimea) (DOĞAN 2008, DÖNEL and DOĞAN 2011a, ULUÇAY and KOÇ 2013).

Family Stigmaeidae

Genus Eustigmaeus BERLESE

***Eustigmaeus rhodomela* (KOCH)**

This species differs from other members of the genus in the shape of dorsal ornamentation, the presence of humeral callosities and seta *4a*, and three pairs of aggenital setae.

Material examined – 21 females from soil under *Ulnus* sp., close to the University Campus (WUELS) on the Odra River, 51°05'49.12" N 17°05'31.09" E, 144 m, Wrocław, 15 May 2012, S. DOĞAN.

Distribution – Austria, Canada, Germany, Greece, Italy, Turkey and USA (DOĞAN 2005, FARAJI *et al.* 2007, DÖNEL and DOĞAN 2011b, DÖNEL *et al.* 2011).

Genus Mediolata Canestrini

***Mediolata obtecta* DÖNEL and DOĞAN**

This species can be distinguished by all dorsal shields fused except the suranal shield, separated by striae, dorsum completely covered with reticulate patterns, formed by polygonal cells, two setae on palp femur, trochanter IV with one seta, genu I with two setae and aggenital shield bearing three pairs of setae.

Material examined – Three females from litter at the entrance of Mopkowy Tunnel used by bats as a housing place, Nowogród Bobrzański, 51°48'42.7" N 15°13'02.3" E, 81 m, 15 May 2010, D. ŁUPICKI.

Distribution – Turkey (DÖNEL and DOĞAN 2012).

Genus *Stigmaeus* KOCH

Stigmaeus glabrisetus SUMMERS

A pair of post-ocular bodies, 90-100 (µm) in diameter, eyes absent, central shield with two pairs of setae, suranal shield entire, with two pairs of setae, aggenital shield with three pairs of setae. genital and pseudanal shields contiguous bearing four pairs of setae, femur II with five setae, genua III and IV each with one seta.

Material examined – One female from litter at the entrance of Mopkowy Tunnel, Nowogród Bobrzański, 51°48'41.7" N 15°13'07.3" E, 80 m, 15 May 2010, D. ŁUPICKI.

Distribution – USA and Turkey (SUMMERS 1962, ÖZÇELİK and DOĞAN 2011, DÖNEL and DOĞAN 2011b).

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PIĘĆ NOWYCH GATUNKÓW ROZTOCZY Z NADRODZINY RAPHIGNATHOIDEA (ACARI) STWIERDZONYCH W FAUNIE POLSKI

STRESZCZENIE

Pięć nowych gatunków roztoczy (Acari: Raphignathoidea) zostało odnotowanych jako nowe dla fauny Polski: trzy z rodziny Stigmaeidae, *Eustigmaeus rhodomela* (KOCH), *Mediolata obtecta* DÖNEL et DOĞAN, *Stigmaeus glabrisetus* SUMMERS, jeden z rodziny Cryptognathidae, *Favognathus cucurbita* (BERLESE), i jeden z rodziny Barbutiidae, *Barbutia anguineus* (BERLESE). Ostatni z wymienionych jest jednocześnie pierwszym stwierdzeniem przedstawiciela rodziny Barbutiidae w Polsce.

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