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*Rafaphis microsternalis* gen. nov., sp. nov. a new mite genus of the family *Eviphididae* from Poland  
(*Acari: Gamasida*)

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ABSTRACT. *Rafaphis microsternalis* gen. nov., sp. nov. (*Acari, Gamasida*) is described from the Pieniny Mountains, Southern Poland.

Key words: acarology, taxonomy, *Gamasida*, *Eviphididae*, new genus, new species, Poland.

#### INTRODUCTION

On the basis of the leg chaetotaxy the family *Eviphididae* is well defined as the only family of the *Gamasina* mites which have only one anterolateral seta on tibia I and on genu I (EVANS 1963; EVANS & TILL 1979; KARG 1965, 1993; KRANTZ 1978). KRANTZ (1978) noted, however, that the number of setae on genu and tibia I of mites of the family may be different: 11 or rarely 8. Palpgenu bears six setae with the exception of the genus *Thinoseius* whose members have only five setae. On the other hand all the genera have 7 setae on tibia III. According to KRANTZ and AINSCOUGH (1990) the epistom is typically with a long, median lanceolate projection or rarely multidentate (as in *Thinoseius* and *Crassicheles*).

The characters of the examined specimen agree with the characters of the family with one difference: the specimen has 8 setae on genu II, while *Thinoseius* has 10 setae and the rest of the genera 11 setae.

## DIAGNOSIS

1. Genu and tibia of legs I each with 8 setae (1-4/2-1);
2. Genu III with 2 ventral setae;
3. Genu II with 8 setae;
4. Tectum three-pronged with the central prong, trifold and lateral processes dentate;
5. Narrow peritremal shield;
6. Palptarsus without macroeupathidia;
7. Apotele two-tined;
8. Very small sternal shield (smaller than genital shield).

The number of setae and the exact chaetotaxy of tibia I of the family *Eviphididae* presented by KRANTZ and AINSCOUGH (1990) made it possible to determine the examined specimen to the family. The typical number of setae of tibia and genu I, however, is 11, which is much different from that number in most genera of *Eviphididae*. The two ventral setae on genu III are very common in *Eviphididae* except *Eviphis*, *Evimirus* and *Thinoseius*. The number of setae on genu II is not constant in the family (10 in *Thinoseius*, 11 in other genera) therefore the 8 setae on genu II of the examined specimen could be a generic character. The tectum is more similar to tecta of *Thinoseius* or *Crassicheles*. The following genera have macroeupathidia on palptarsus: *Copriphis*, *Evimirus*, *Eviphis*, *Peletiphis* and *Scarabaspis*. The two-tined apotele is very characteristic of *Eviphididae* except *Evimirus* (KARG 1963). The small sternal shield is characteristic only of *Thinoseius*, but it bears only one pair of setae.

Considering the above differences the new genus *Rafaphis* gen. nov. is erected for the examined specimen.

***Rafaphis* gen. nov.**

Genotype: *Rafaphis microsternalis* sp. nov.

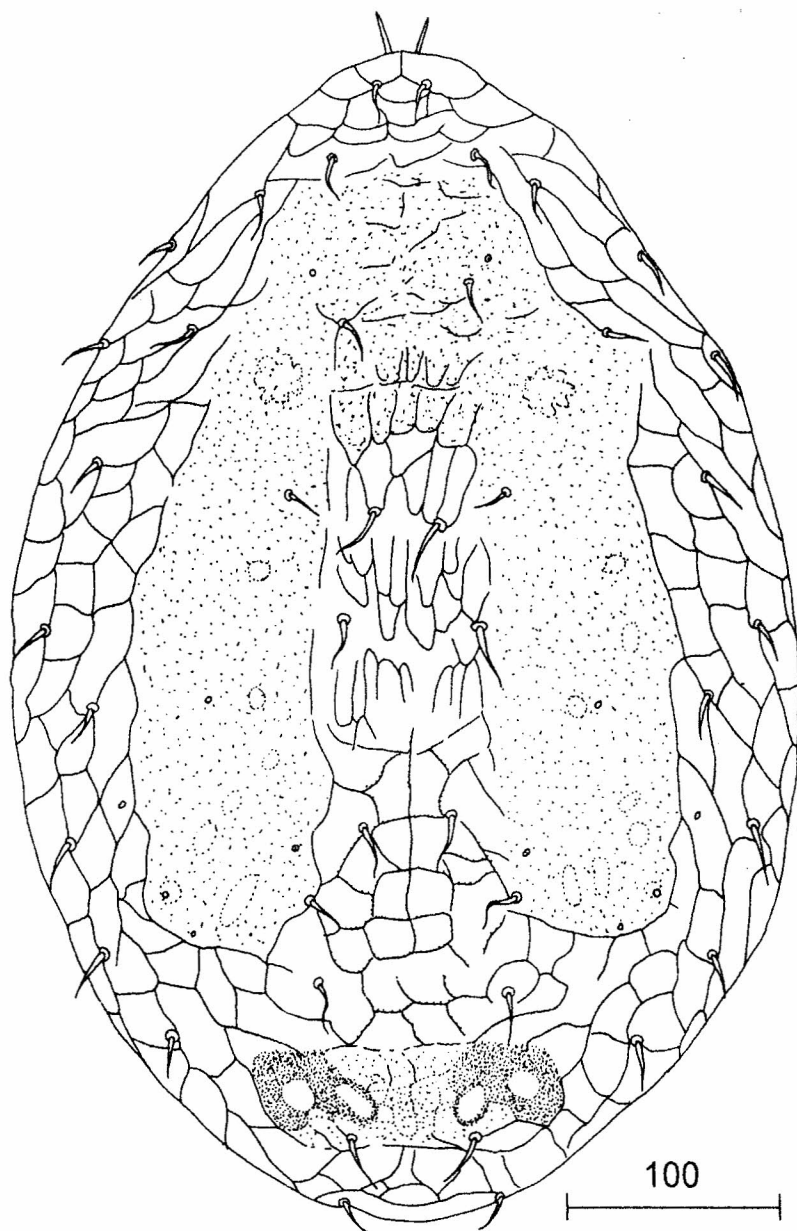
Description: see description of type species:

***Rafaphis microsternalis* sp. nov.**

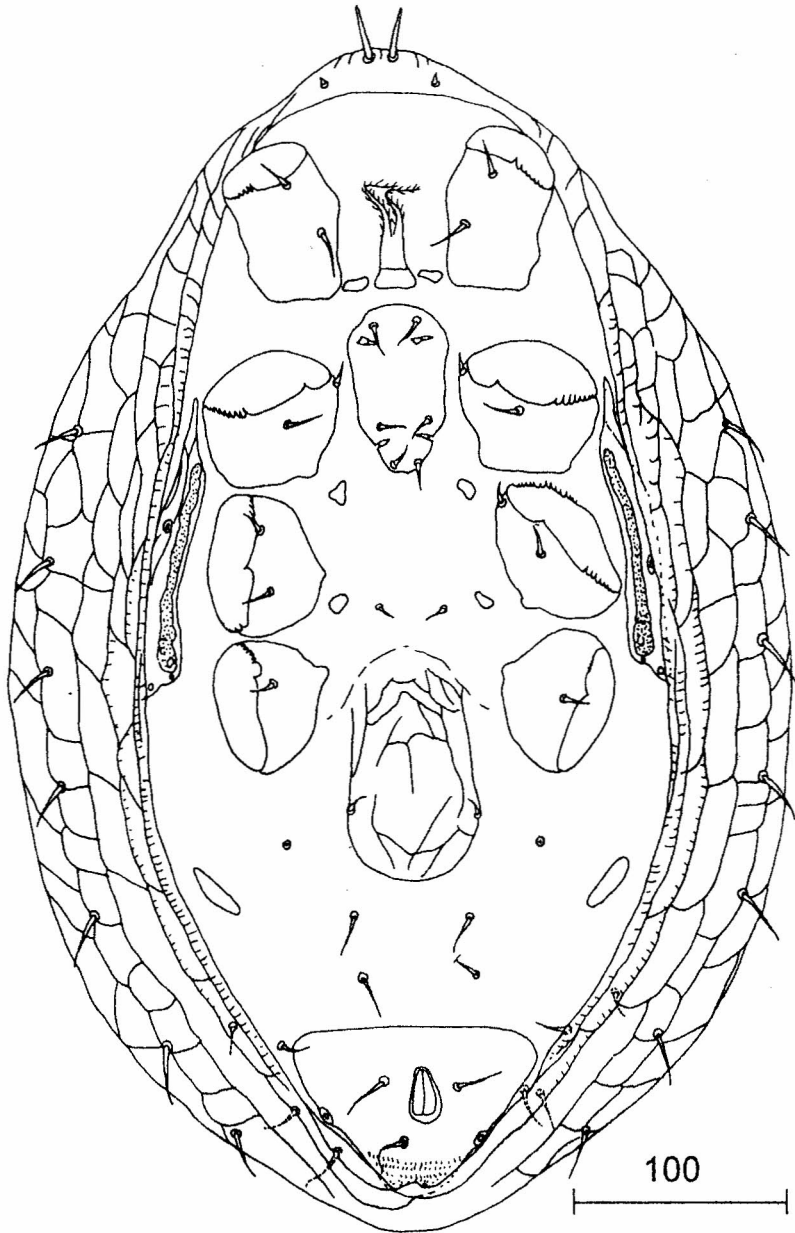
Female: Idiosoma: length 495 µm, width 330 µm.

Dorsum (Fig. 1):

The dorsum is covered by a shield bearing 30 pairs of simple setae. All setae are of similar length, except setae z1. Setae z1 very short (6 µm). Setae j1 blunt and stouter than other dorsal setae. Dorsal shield well sclerotized, completely covering dorsal and lateral surfaces. The dorsal shield is strongly ornamented with reticulation and only on both sides of the central region and posterior to the region with punctate microsculpture.



1. *Rafaphis microsternalis* gen. nov. sp. nov. - dorsum of female

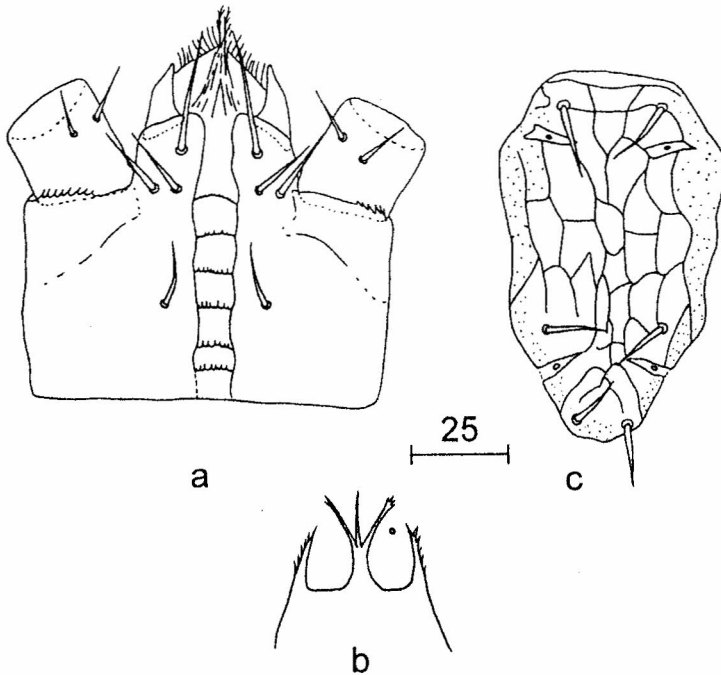


2. *Rafaphis microsternalis* gen. nov. sp. nov. - venter of female

Ventrum (Fig. 2): Tritosternum well developed. Sternal shield small (Fig. 3c), with three pairs of setae and two pairs of pores. Sternal shield is smaller than genital shield. Setae mst on unsclerotized scutilla. A pair of presternal shields small, close to the base of tritosternum. Genital shield with rounded edge, with a pair of setae. Metapodal shields present. Anal shield triangular, markedly wider than genital shield. Two pairs of setae are situated between genital and anal shields.

Gnathosoma (Fig. 3a): Hypostom with corniculi horn-like. Deutosternum with six distinct transverse rows of denticles. Tectum (Fig. 3b) with three processes, medial process is trifid, with lateral processes dentate. Palpgenu with six setae, palptarsus without macroeupathidia, apotele two-tined.

The legs chaetotaxy: femur I: 2-4/3-2 (Fig. 4a), genu I (Fig. 4b) and tibia I (Fig. 4c): 1-4/2-1 (1-2/1-2/1-1), femur II (Fig. 5a): with six setae, genu II (Fig. 5b): 1-4/2-1 (1-2/1-2/1-1), tibia II (Fig. 5c): 1-3/2-1 (1-1/1-2/1-1), femur III: with six setae, genu III (Fig. 6c): 1-4/2-1 (1-2/1-2/1-1), tibia III (Fig. 6d): 1-3/2-1 (1-1/1-2/1-1), femur IV: with six setae, genu IV (Fig. 6a): 1-4/1-1 (1-2/1-2/0-1), tibia IV (Fig. 6b): 1-3/2-1 (1-1/1-2/1-1).



3. *Rafaphis microsternalis* gen. nov. sp. nov.: a - hypostom, b - tectum, c - sternal shield

## SYSTEMATIC POSITION

The new genus is the closest related to the genera: *Alliphis*, *Evimirus*, *Pelethiphis* and *Scamaphis*. It differs from these genera in the following characters:

*Rafaphis* gen. nov.

1. Genu and tibia I with 8 setae
2. Genu II with 8 setae
3. Tectum with three processes, medial process trifid, lateral processes dentate
4. Peritremal shields narrow

*Rafaphis* gen. nov.

1. Apotele two-tined
2. Palptarsus without macroeupathidia
3. Genu III with 2 ventral setae
4. Tectum with three processes
5. Setae j1 and z1 present

*Rafaphis* gen. nov.

1. Tectum with three processes
2. Palptarsus without macroeupathidia
3. Setae J similar to marginal setae in length
4. Genu II with 8 setae

*Rafaphis* gen. nov.

1. Tectum with three processes
2. Dorsum with 30 pairs of setae
3. Bases of metasternal setae as far from the posterior edge of sternal shield as is the length of the shield (sternal shield very small)
4. Genu II with 8 setae

*Alliphis* HALBERT, 1923

1. Genu and tibia I with 11 setae
2. Genu II with 11 setae
3. Tectum with long median, lanceolate projection
4. Peritremal shields wide

*Evimirus* KARG, 1963

1. Apotele three-tined
2. Palptarsus with a pair of macroeupathidia
3. Genu III with 1 ventral seta
4. Tectum with long median, lanceolate projection
5. Lack of setae j1 and z1

*Pelethiphis* BERLESE, 1911

1. Tectum with long median, lanceolate projection
2. Palptarsus with 1 macroeupathidium
3. Setae J over 10 times shorter than marginal setae
4. Genu II with 11 setae

*Scamaphis* KARG, 1976

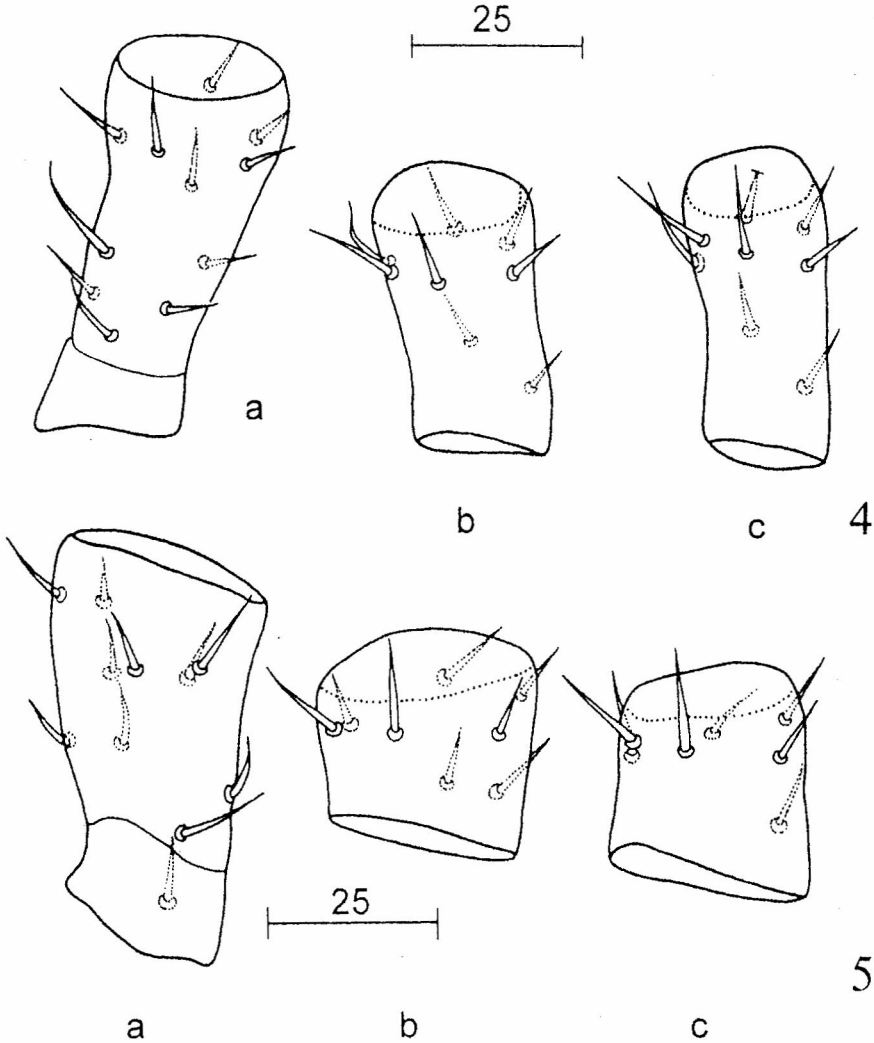
1. Tectum with long median, lanceolate projection
2. Dorsum with 27 pairs of setae
3. Bases of metasternal setae very close to the posterior edge of sternal shield (sternal shield is regular)
4. Genu II with 11 setae

ETYMOLOGY

The genus is dedicated to the famous Polish arachnologist Prof. Jan RAFALSKI. The species name is derived from a very characteristic small sternal shield.

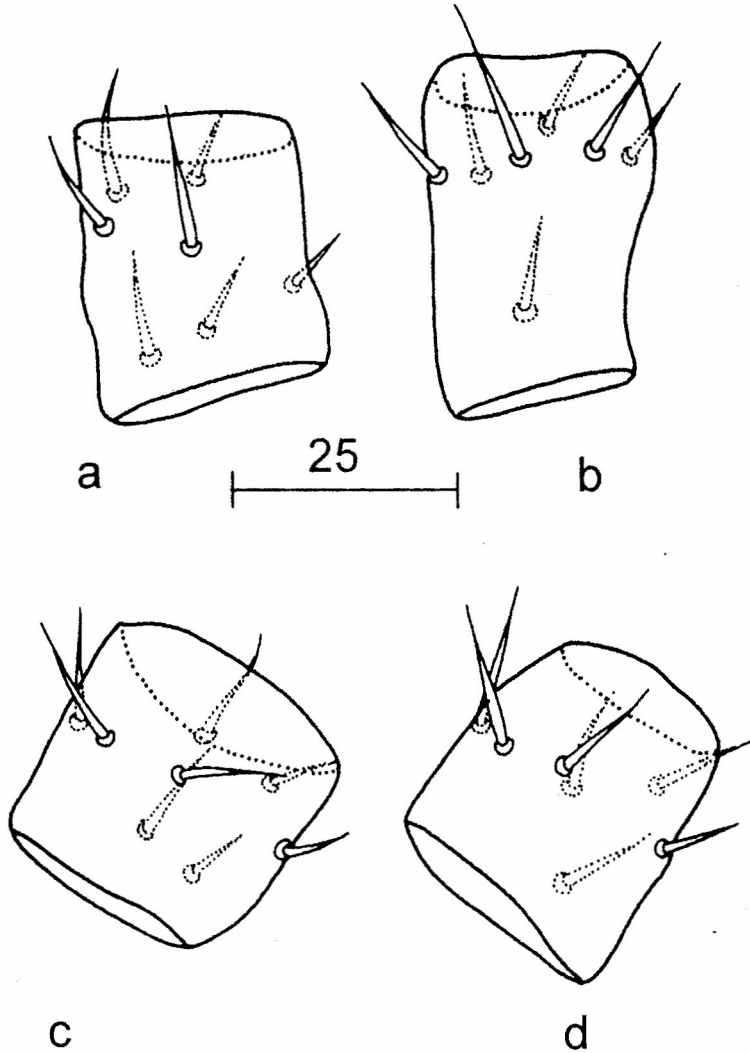
TYPE MATERIAL

Holotype: 1 female (MS - 149), 21.09.1991, Poland, South, Pieniny Mountains (Pieniny National Park), Gorceński Ravine, from medium wet moss on the lime-



4-5. *Rafaphis microsternalis* gen. nov. sp. nov. - leg podomeres: a - femur I, b - genu I, c - tibia I; 5. a - femur II, b - genu II, c - tibia II

stone, at the south-eastern slopes. Material deposited at the Department of Forest and Environment Protection, Agricultural University, Poznań, Poland.



6. *Rafaphis microsternalis* gen. nov. sp. nov. - leg podomeres: a - genu IV, b - tibia IV, c - genu III, d - tibia III



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