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Two new species and four new records of eriophyoid mites from grasses in Hungary (Acari: Eriophyoidea)

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ABSTRACT. The present paper reports seven species of eriophyoid mites found on grasses in Hungary during September 2003. Among them two species are new to science: *Aceria triseti* n. sp. found on *Trisetum flavescens* and *Aculodes janboczeki* n. sp. found on *Bromus inermis* and *Festuca rubra*. Detailed morphological characteristics based on adults of both sexes and juvenile stages are given. Four other species are new records for the Hungarian fauna: *Abacarus acutatus* SUKHAREVA, *Abacarus longilobus* SKORACKA, *Aceria eximia* SUKHAREVA and *Aculodes multitricavus* SKORACKA. For *A. longilobus* a new host *Trisetum flavescens* is also recorded. *Aceria tosichella* KEIFER found during this survey was previously listed in the Hungarian fauna. The current documented number of grass-infesting eriophyoid species in Hungary has increased from eight to 14.

Key words: acarology, taxonomy *Abacarus, Aceria, Aculodes*, new species, new records, Poaceae, Hungary.

INTRODUCTION

Eriophyoid mites are obligatory phytophages. They may infest all plant parts, except the roots and occur on flowering and coniferous plants and ferns throughout the world. Many species are of great economic importance, because of the abnormalities which they induce on plants or the plant viruses they transmit (OLDFIELD & PROESELER 1996, WESTPHAL & MANSON 1996). Currently, at least 3442 species are known and each year several new genera and over 100 new species are described (AMRINE et al. 2003).

Grass-inhabiting eriophyoid mites have been examined mostly in Europe and North America. Some observations have also been made in Africa, Australia, New Zealand, India, Taiwan, Thailand, the Philippines and China. As a result, at least 130 species have been described. The majority of them are vagrants on leaves, however many live in leaf sheaths, under leaf ligules, on inflorescences, and a few species inhabit galls. Some of these species cause economically significant damage to their hosts inducing growth malformations, e.g. the shortening of shoots or internodes, the twisting and the rolling of leaf edges and plant tips, growth inhibition, stunting, rusting, browning, production of spots or other discoloration of leaves, sterility, witches' broom, galls on leaves or flowers. Most important, however, are the species transmitting viruses of plant diseases, e.g. *Aceria tosichella* KEIFER, 1969 and *Abacarus hystrix* (NALEPA, 1896) (AMRINE & STASNY 1994, FROST & RIDLAND 1996, FLECHTMANN 2000, HUANG 2001a, 2001b, 2001c, SKORACKA 2004).

Studies on eriophyoid mites in Hungary concerned mainly eriophyoid fauna of trees and bushes and resulted in recording about 510 species (FARKAS 1965, 1966, GYŐRFFY 1987, 1992, JENSER 1996, RIPKA & DE LILLO 1997, AMRINE & STASNY 1994). The Hungarian fauna of eriophyoids occurring on grasses is poorly known and needs further examination. Only eight species have been noted up to date: *Abacarus hystrix*, *Aceria arundinis* ROIVAINEN, 1953, *Aceria phalaridis* ROIVAINEN, 1951, *Aceria tenuis* (NALEPA, 1891), *A. tosichella*, *Aceria tulipae* (KEIFER, 1938), *Aculodes dubius* (NALEPA, 1891), and *Aculodes mckenziei* (KEIFER, 1944) (AMRINE & STASNY 1994, GÓLYA et al. 2002). In this paper I present two new species and four new records of grass-infesting eriophyoid mites for the Hungarian fauna.

MATERIAL AND METHODS

Plant samples were collected in Hungary in September 2003. Plant samples were collocated in sheets of paper to dry and transported to Poland. In the laboratory the mites were collected from plants by direct examination under stereo-microscope, mounted in modified Berlese medium (AMRINE & MANSON 1996) and studied with a phase-contrast microscope. The nomenclature of eriophyoids morphology follows that of LINDQUIST (1996). Measurements of mites were made according to AMRINE & MANSON (1996). Systematic classification follows that of AMRINE et al. (2003) and original descriptions (SUKHAREVA 1983, 1985, SKORACKA 2002, 2004, KEIFER 1969). All measurements are given in micrometers. Measurements of legs' segments and setae refer to the length of the structure. Positions of legs' setae were measured from the proximal margin of a given segment. Location of ventral setae *c2*, *d*, *e*, *f* on ventral annuli was counted from the posterior margin of coxae II. Each measurement of the holotype precedes the corresponding range for paratypes. The examined material is kept in the collection of Department of Animal Taxonomy and Ecology, Adam Mickiewicz University, Poznań, Poland.

RESULTS

Aceria triseti n. sp.

DIFFERENTIAL DIAGNOSIS

Aceria triseti n. sp. is the most similar to *Aceria tosichella* (*Triticum aestivum* L., Poaceae, Yugoslavia) (KEIFER 1969) by the triangularly-oval prodorsal shield, pointed microtubercles, the shape of admedian and submedian lines, the number of empodial rays and opisthosomal annuli. *A. triseti* can be distinguished from *A. tosichella* by the shape of the median line, which is simple in *A. tosichella* and splited in *A. triseti*. Besides, there are arched, transversal lines in the prodorsal shield of *A. triseti*, which are absent in the prodorsal shield of *A. tosichella*. Those species differ also in the length of setae *sc* (60 in *A. tosichella,* 41 in *A. triseti*), *c2* (44 in *A. tosichella,* 28 in *A. triseti*), and *e* (50-60 in *A. tosichella,* 27 in *A. triseti*).

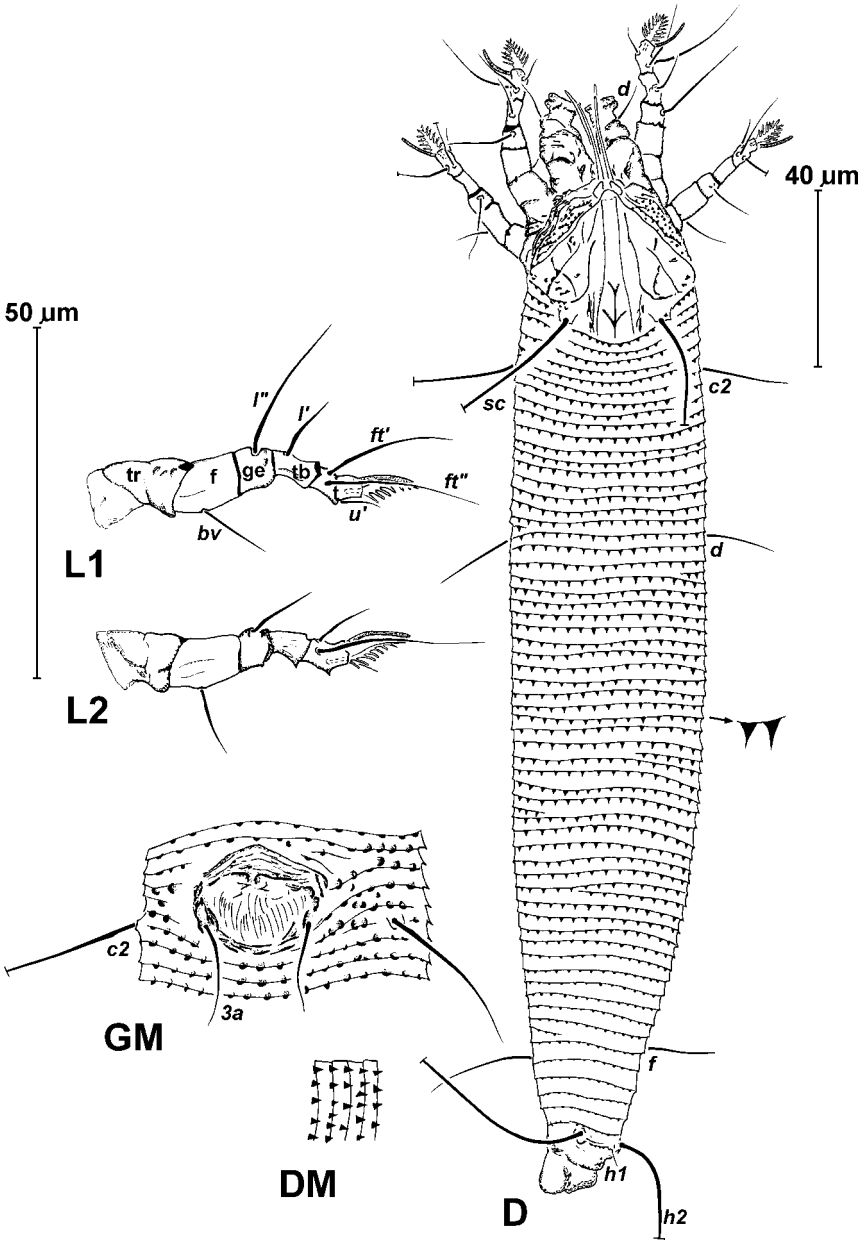
DESCRIPTION

FEMALE (Figs 1, 2, 8) (holotype and 17 paratypes): Body vermiform. Body length 243 (190-268); width 46 (43-46). Gnathosoma 27 (25-28) long; dorsal pedipalpal genual seta *d* 10 (9-10) long; *ep* seta 4 (3-4) long; cheliceral stylets 24 (22-27) long. Prodorsal shield 37 (37-40) long, 43 (37-43) wide; its anterior half triangular, posterior half semicircular; little, subrounded lobe reaching half of the base of chelicerae. Shield sculpture: median line on rear half, with two opposite rays and splited anteriorly; admedian lines entire, sinuous; I submedian lines anteriorly subparallel to admedian lines, posteriorly running lateral just in front of tubercles of *sc* setae; II submedian lines on rear half, subparallel to lateral shield margins; transversal bowled lines between I and II submedian lines and II submedian lines and lateral margins. Tubercles of setae *sc* 26 (22-26) apart, on rear margin of shield; setae *sc* 41 (38-48) long, projecting to rear.

Leg I 35 (33-39); femur 10 (9-10), seta *bv* 11 (10-14), position of seta *bv* 5 (4-5); genu 6 (5-6), seta *l"* 24 (23-27), position of seta *l"* 3 (3-4); tibia 8 (7-9), seta *l'* 10 (10-12), position of seta *l'* 4 (3-4). Tarsus 9 (8-10), setae: *ft"* 28 (25-29), *ft'* 22 (18-23), *u'* 8 (6-8). Tarsal solenidion *ω* 10 (9-10), narrow and curved; tarsal empodium simple, symmetrical, 10 (10), 7 (6-7)-rayed. Leg II 35 (32-38); femur 10 (9-10), *bv* 13 (10-15), position of *bv* 4 (4-5); genu 5 (5-6), *l"* 11 (10-13), position of *l"* 3 (3-4); tibia 7 (6-7). Tarsus 7 (7-9), *ft"* 26 (24-28), *ft'* 15 (10-15), *u'* 7 (6-7). Tarsal solenidion *ω* 10 (9-10); tarsal empodium 10 (9-10), 7 (6-7)-rayed.

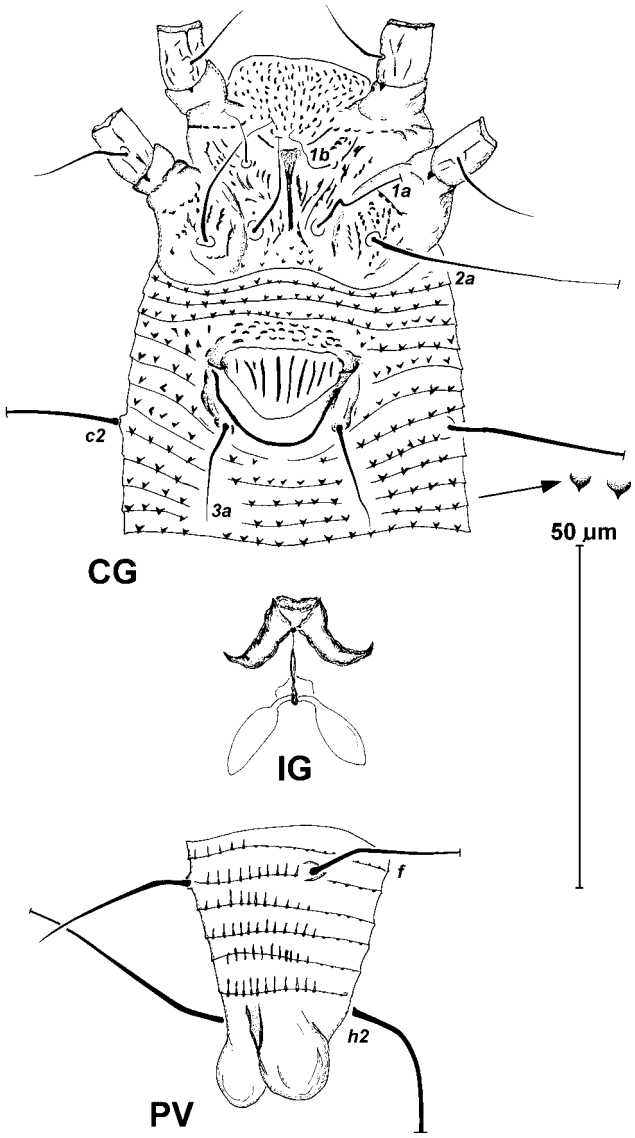
Coxae with pattern of numerous dashes and subrounded microtubercles; sternal line distinct. Setae *1b* 13 (10-13) apart, 7 (7-14) long; setae *1a* 10 (8-10) apart, 19 (19-29) long; setae *2a* 25 (22-25) apart, 36 (36-44) long; distance between setae *1b* and *1a* 9 (9-10), distance between setae *1a* and *2a* 8 (7-9).

Opisthosoma with 60 (56-64) dorsal annuli, 59 (53-63) ventral annuli, 5 (4-6) coxogenital annuli. Microtubercles set along annuli margins; dorsal elongated and pointed, telosomal minute; ventral conical and pointed, telosomal elongated.



1. *Aceria triseti* n. sp.: D - dorsal aspect of female; L1, L2 – legs I and II of female; DM - dorsal microtubercles of male; GM - genital region of male

Seta *c2* 28 (22-30) long, located on 8th (6th-8th) annulus; tubercles *c2* 48 (40-49) apart; ventral seta *d* 45 (36-45) long, located on 20th (16th-20th) annulus; tubercles *d* 31 (28-33) apart; seta *e* 27 (25-36) long, located on 34th (29th–35th) annulus; tubercles *e* 16 (14-18) apart; seta *f* 24 (22-29) long, located on 55th (49th-59th) annulus, or 5th (5th) annulus from rear; tubercles *f* (18-21) apart.

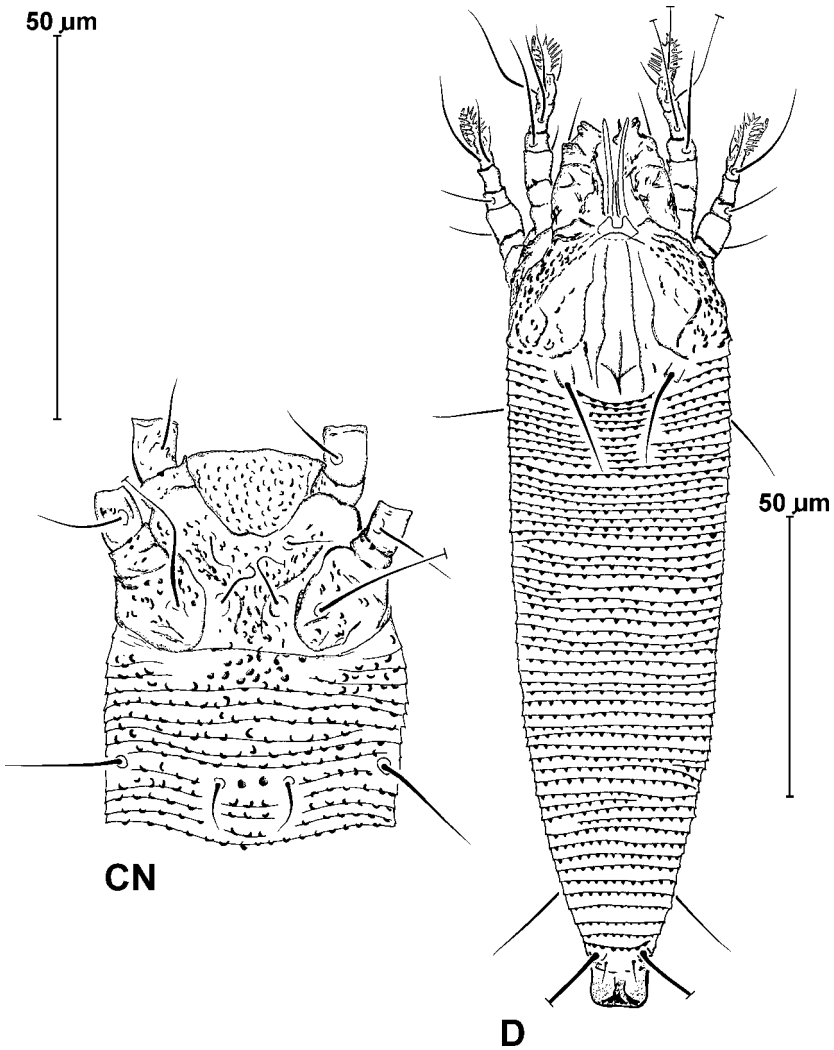


2. *Aceria triseti* n. sp., female: CG – coxigenital region; IG – internal genitalia; PV – postero-ventral region

Setae *h1* 5 (4-5) long, 6 (6-7) apart; setae *h2* (47-68), 9 (9-10) apart; distance between *h1* and *h2* - 2 (2-3).

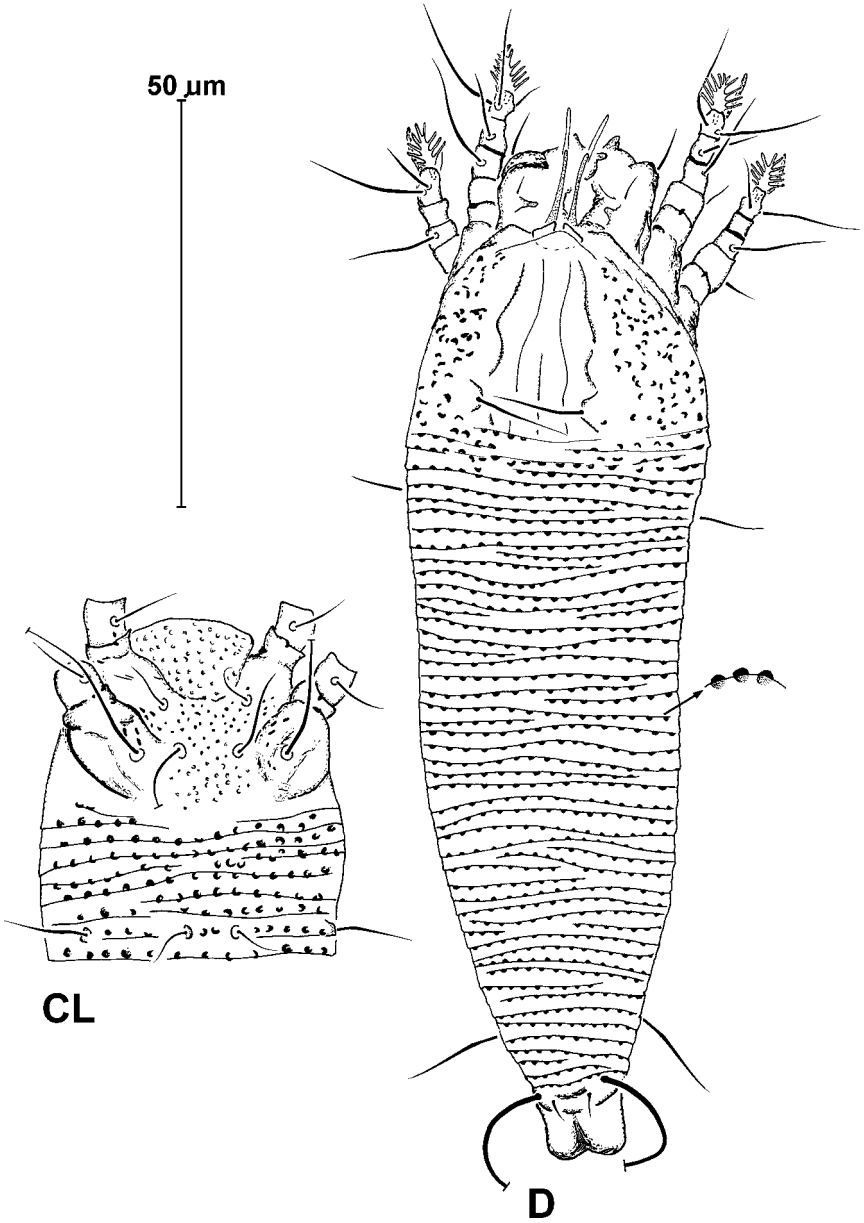
Genital parts 16 (13-16) long, 24 (21-24) wide, genital coverflap with 9 (7-10) longitudinal striae; setae *3a* 14 (14-17) long, 17 (16-18) apart.

MALE (4 specimens): body length 181-187; body width 40-44. Body shape similar to that of the female. Gnathosoma 22-24 long; pedipalpal seta *d* 7-9 long; *ep* seta 3 long; chelicerae 19-23 long. Shape and design of prodorsal shield similar to that of the female. Shield 31-35 long; 38-39 wide. Tubercles of setae *sc* 21-24 apart, on rear margin of shield; setae *sc* 25-27 long.



3. *Aceria triseti* n. sp., nymph: D - dorsal aspect; CN – coxisternum and *3a* and *c2* setae

Leg I 29-31; femur 8-9, seta *bv* 8-10, position of seta *bv* 4; genu 5, seta *l"* 20-21, position of seta *l"* 3; tibia 7, seta *l'* 8-9, position of seta *l'* 3. Tarsus 7-8, setae: *ft"* 19-24, *ft'* 17-19, *u'* 6-7. Tarsal solenidion *ω* 8-9; tarsal empodium 9-10, 6-7-rayed. Leg II 29; femur 8-9; seta *bv* 11-12, position of seta *bv* 3-4; genu 4-5, *l"* 9-



4. *Aceria triseti* n. sp., larva: D - dorsal aspect; CL – coxisternum and *3a* and *c2* setae

12, position of *l"* 2-3; tibia 5-6. Tarsus 7-8, *ft"* 18-24, *ft'* 7-10, *u'* 5-6. Tarsal solenidion *ω* 7-9; tarsal empodium 8-10, 6-7-rayed.

Coxae with a pattern similar to that of the female. Setae *1b* 10-11 apart, 10 long; setae *1a* 7-9 apart, 16-18 long; setae *2a* 20-22 apart, 29 long; distance between setae *1b* and *1a* 8, distance between setae *1a* and *2a* 7-8.

Opisthosoma with 50-54 dorsal annuli, 49-54 ventral annuli, 3-4 coxogenital annuli. Annuli microtuberculate, similar to that of the female (Figs 1, 8).

Seta *c2* 19-25 long, located on 6th–7th annulus, tubercles *c2* 37-40 apart; ventral seta *d* 29-31 long, located on 14th-16th annulus; tubercles *d* 18-26 apart; seta *e* 23-24 long, located on 25th-29th annulus; tubercles *e* 11-13 apart; seta *f* 19-22 long, located on 45th-50th annulus, or 5th annulus from rear; tubercles *f* 14-16 apart.

Setae *h1* 4-5 long, 4-6 apart; setae *h2* 8-9 apart; distance between *h1* and *h2* – 2.

Genital parts 12-14 long, 18-21 wide; setae *3a* 14-16 long, 13-15 apart; surface below the eugenital setae with longitudinal, slender lines (Figs 1, 8).

NYMPH (Fig. 3) (5 specimens): body vermiform, 143-188 long, 30-41 wide. Gnathosoma 19-23 long; pedipalpal seta *d* 6-8 long; *ep* seta 2-3 long; chelicerae 19-22 long. Shield 29-34 long, 29-38 wide. Shape and design of prodorsal shield similar to that of the female, with exception: median line not splited anteriorly, II submedian lines shorter than these of the female. Tubercles of setae *sc* 16-20 apart, on rear margin of shield; setae *sc* 17-22 long, projecting to rear.

Leg I 24-29; femur 6-8; seta *bv* 7-8, position of seta *bv* 3-4; genu 4, seta *l"* 18-19, position of seta *l"* 2; tibia 5-6; seta *l'* 7-8, position of seta *l'* 2-3; tarsus 6-7, setae *ft"* 21-23, *ft'* 11-16, *u'* 5-6. Tarsal solenidion *ω* 7-9 long; tarsal empodium 7-8, simple, symmetrical, 5-6-rayed. Leg II 21-27; femur 7; seta *bv* 8-10, position of seta *bv* 3-4; genu 4, *l"* 8-11, position of *l"* 2; tibia 4-5; tarsus 5-7, setae *ft"* 21, *ft'* 7-10, *u'* 4-5. Tarsal solenidion *ω* 6-8; tarsal empodium 7-8, 5-6-rayed.

Coxae with minute subrounded microtubercles and spots. Setae *1b* 10-11 apart, 5-6 long; setae *1a* 6-8 apart, 10-12 long; setae *2a* 17-21 apart, 19-25 long; distance between setae *1b* and *1a* 7-9, distance between setae *1a* and *2a* 5-7.

Opisthosoma with 46-52 dorsal annuli, 42-55 ventral annuli, 4-9 annuli to *3a* setae. Microtubercles set along annuli margins, dorsal conical; ventral subrounded.

Seta *c2* 16-19 long, located on 6th-9th annulus, tubercles *c2* 29-37 apart; ventral seta *d* 19-27 long, located on 13th–20th annulus, tubercles *d* 19-25 apart; seta *e* 11-14 long, located on 23th-32nd annulus, tubercles *e* 10-12 apart; seta *f* 11-18 long, located on 38th -51st annulus, or 5th annulus from rear, tubercles *f* 16-17 apart.

Setae *h1* 3-4 long, 5-6 apart; setae *h2* 8-9 apart; distance between *h1* and *h2* – 2-3.

Setae *3a* 7-9 long, 8-10 apart.

LARVA (Fig. 4) (6 specimens): body vermiform, 121-150 long, 30-38 wide. Gnathosoma 17-21 long; pedipalpal seta *d* 5-7 long; *ep* seta 2-3 long; chelicerae 17-22 long. Shield 27-29 long, 19-24 wide. Shape of prodorsal shield: median line on rear half, not splitted; admedian lines similar to that of the female; I submedian

lines on fore part of shield. Tubercles of setae *sc* 10-15 apart, ahead of rear shield margin and directing setae centrad; seta *sc* 10-14 long.

Leg I 21-27; femur 6-7; seta *bv* 7-9, position of seta *bv* 3-4; genu 3-4, seta *l"* 13-17; tibia 4-5; tarsus 5, setae *ft"* 14-19, *ft'* 11-16, *u'* 4-6. Tarsal solenidion *ω* 6-7 long; tarsal empodium 7-8, simple, symmetrical, 5-6-rayed. Leg II 18-25; femur 5-6; seta *bv* 7-9, position of seta *bv* 2-3; genu 3-4, *l"* 7-9, position of *l"* 2; tibia 3-4; tarsus 4-5, setae *ft"* 12-15, *ft'* 6-9, *u'* 4. Tarsal solenidion *ω* 6-7; tarsal empodium 6-8, 5-6-rayed.

Coxae with spots, sternal line absent. Setae *1b* 8-10 apart, 4-6 long; setae *1a* 6-8 apart, 7-10 long; setae *2a* 16-20 apart, 19-22 long; distance between setae *1b* and *1a* 6-8, distance between setae *1a* and *2a* 6-7.

Opisthosoma with 42-50 dorsal annuli, 31-35 ventral annuli, 5-7 annuli to *3a* setae. Dorsal microtubercles subrounded, set along annuli margins. Ventral microtubercles rounded, slightly ahead of annuli margins.

Seta *c2* 9-13 long, located on 5th-7th annulus, tubercles *c2* 26-33 apart; ventral seta *d* 10-14 long, located on 11th–13th annulus, tubercles *d* 17-21 apart; seta *e* 7-10 long, located on 17th-19th annulus, tubercles *e* 9-11 apart; seta *f* 12-17 long, located on 28th -32nd annulus, or 4th annulus from rear, tubercles *f* 10-16 apart.

Setae *h1* 3-5 long, 4-5 apart; setae *h2* 45-52 long, 8-10 apart; distance between *h1* and *h2* 2-3.

Setae *3a* 5-8 long, 5-7 apart.

TYPE MATERIAL

Holotype female, 38 female paratypes, 7 males, 5 nymphs, 7 larvae.

Type host: *Trisetum flavescens* (L.) P. BEAUV. (Poaceae).

Relation to host plant: mites are vagrants on upper leaf surfaces.

Type locality: Hungary, Bükki Mountains, 580 m. a. s. l., meadow near oak forest; 48°02.730' N, 020°28.814' E; 29.09.2003; leg. A. Skoracka.

ETYMOLOGY

the specific name is derived from the generic name of the host plant on which the mite was found.

Aculodes janboczeki n. sp.

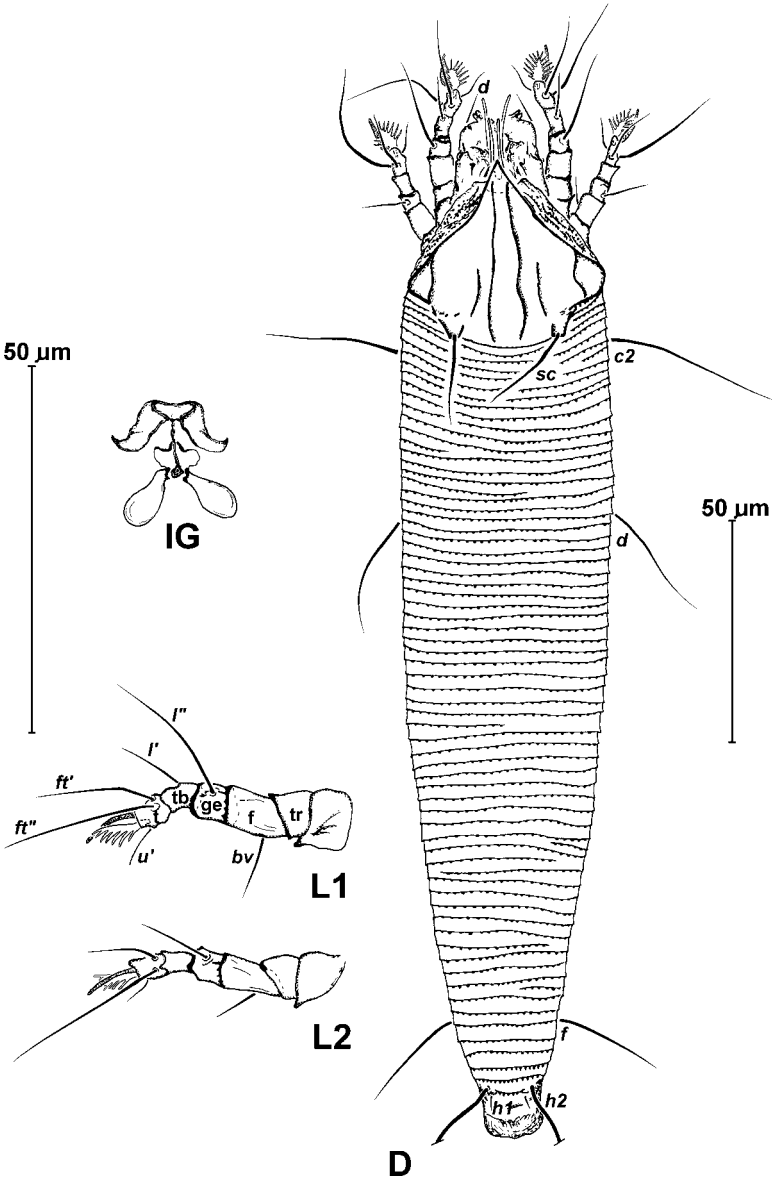
DIAGNOSIS

Female. Typical design of prodorsal shield with short submedian lines and ocellar field located marginally. Genital coverflap elongated transversally. Typical internal genitalia.

DESCRIPTION

FEMALE (Figs 5, 6, 8) (holotype and 18 paratypes): Body slightly spindleform. Body length 235 (188-251); width 54 (46-53). Gnathosoma 25 (21-26) long; dorsal pedipalpal genual seta *d* 6 (6-8) long; *ep* seta 3 (3) long; cheliceral stylets

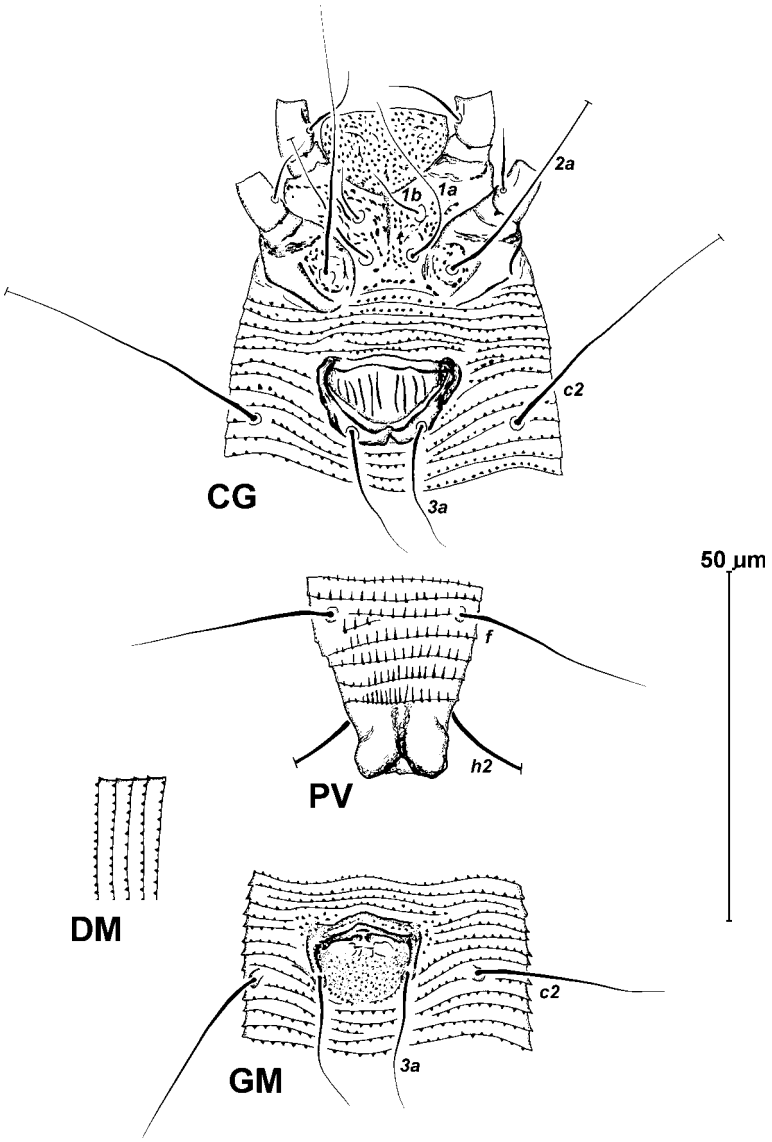
24 (18-24) long. Prodorsal shield 45 (39-46) long, 44 (43-48) wide; triangular with distinct and pointed lobe over base of chelicerae. Shield design: median line absent; admedian lines entire and parallel to each other; I submedian lines very short on rear half of shield, parallel to admedian; II submedian lines as short as I submedian, sinusoid, with lateral margins of shield form subrounded, ocellar



5. *Aculodes janboczeki* n. sp., female: D - dorsal aspect; L1, L2 – legs I and II; IG – internal genitalia

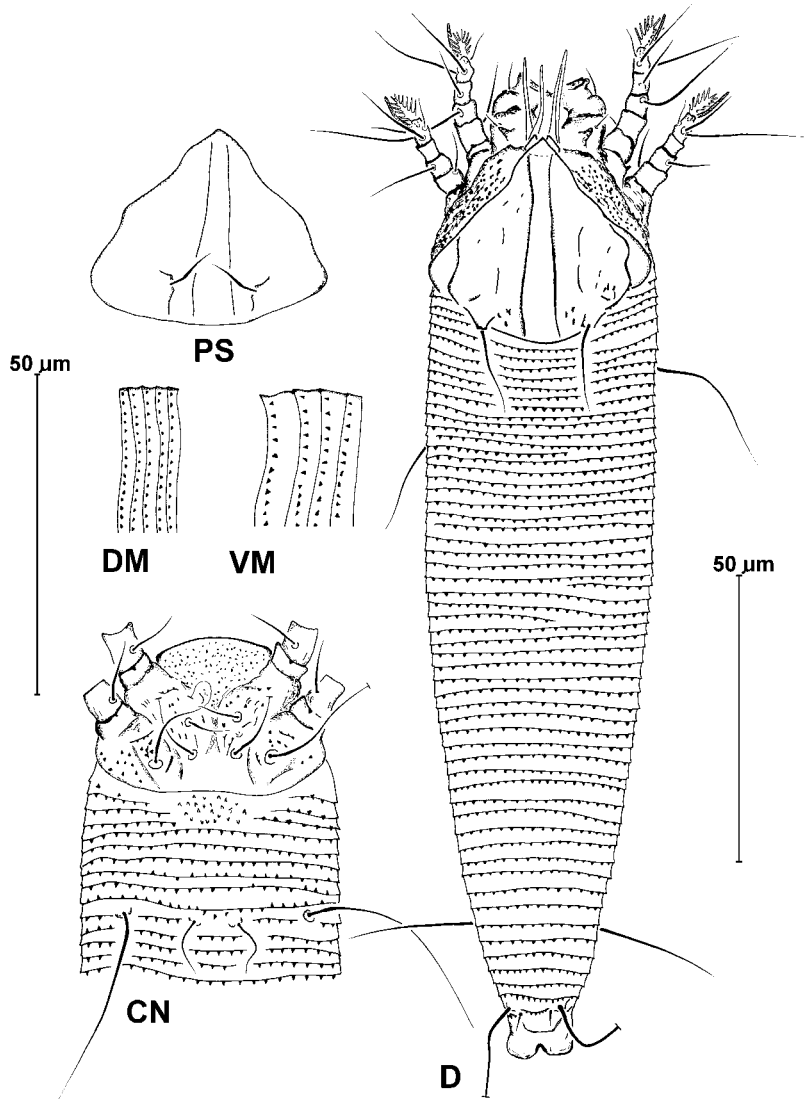
fields located marginally. Tubercles of setae *sc* 27 (24-29) apart, on rear margin of shield; setae *sc* 20 (18-23) long, projecting to rear.

Leg I 31 (28-35); femur 8 (8-9), seta *bv* 10 (10-14), position of seta *bv* 4 (3-4); genu 6 (5-6), seta *l"* 22 (19-24), position of seta *l"* 3 (2-4); tibia 6 (5-7), seta *l'* 9 (8-10), position of seta *l'* 3 (3-4). Tarsus 7 (6-8), setae: *ft"* 24 (24-29), *ft'* 21 (17-21), *u'* 7 (7-10). Tarsal solenidion *ω* 9 (8-9), narrow and curved; tarsal empodium

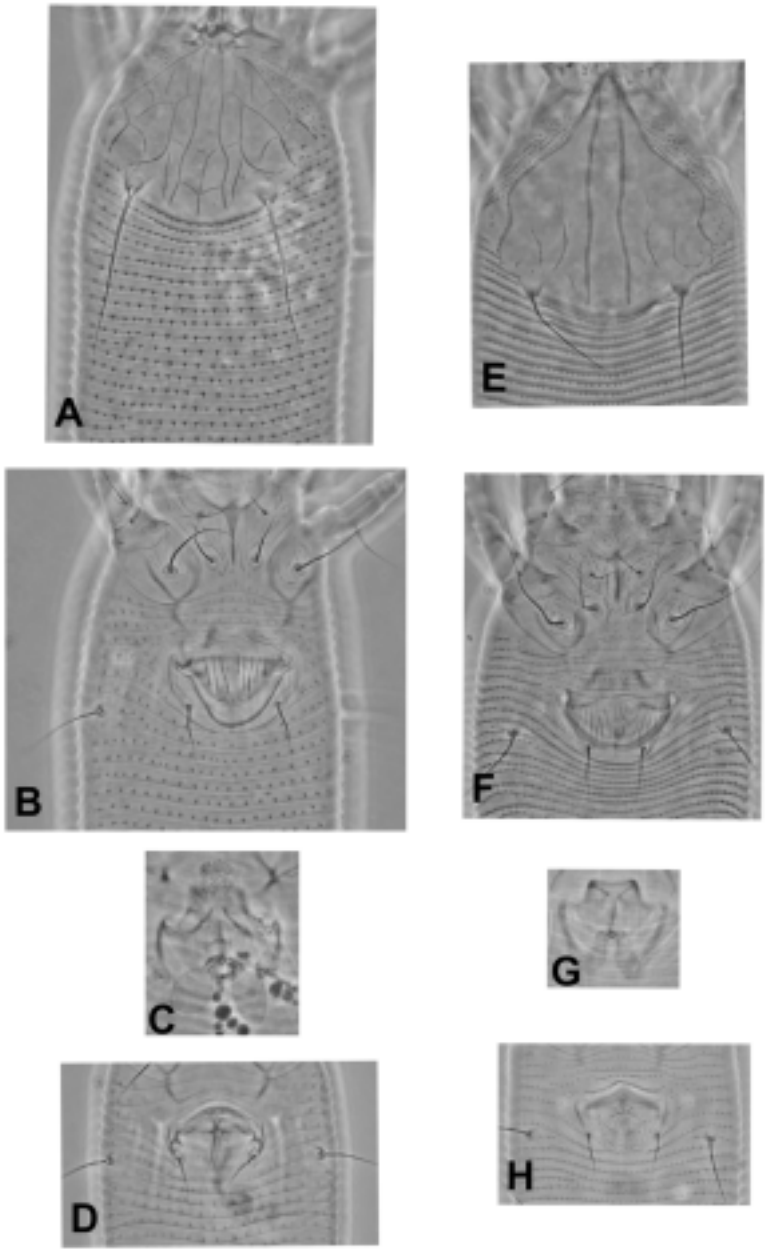


6. *Aculodes janboczeki* n. sp.: CG – coxigenital region of female; PV – postero-ventral region of female; DM - dorsal microtubercles of male; GM - genital region of male

simple, symmetrical, 9 (8-10), 7 (7-8)–rayed. Leg II 29 (27-33); femur 9 (8-10), *bv* 9 (9-12), position of *bv* 4 (3-5); genu 5 (4-5), *l"* 10 (10-14), position of *l"* 3 (2-3); tibia 5 (5-6). Tarsus 7 (6-7), *ft"* 24 (24-30), *ft'* 12 (10-12), *u'* 6 (6-7). Tarsal solenidion *ω* 9 (8-10), narrow and curved; tarsal empodium 10 (8-10), 7 (7-8)-rayed, similar in shape to that of leg I.



7. *Aculodes janboczeki* n. sp.: D - dorsal aspect of nymph, CN – coxisternum and *3a* and *c2* setae of nymph; DM - dorsal microtubercles of larva; PS - prodorsal shield of larva; VM- ventral microtubercles of larva



8. A-D - *Aceria triseti* n. sp.: A - prodorsal shield of female; B - coxigenital region of female; C - internal genitalia of female; D - genital region of male; E-H - *Aculodes janboczeki* n. sp.: E - prodorsal shield of female; F - coxigenital region of female; G - internal genitalia of female; H - genital region of male

Coxae with pattern of numerous, minute microtubercles and dashes, set round about setae tubercles; sternal line slender. Setae *1b* 9 (8-10) apart, 11 (8-13) long; setae *1a* 8 (7-9) apart, 22 (21-29) long; setae *2a* 19 (18-21) apart, 46 (43-48) long; distance between setae *1b* and *1a* 6 (6-7), distance between setae *1a* and *2a* 7 (6-8).

Opisthosoma with 57 (55-64) dorsal annuli, 72 (63-75) ventral annuli, 5 (5-7) coxogenital annuli. Microtubercles conical and bead-like, located on annuli margins, telosomal elongated.

Seta *c2* 38 (38-45) long, located on 8th (8th-10th) annulus; tubercles *c2* 41 (34-42) apart; ventral seta *d* 43 (43-54) long, located on 22nd (20th-24th) annulus; tubercles *d* 29 (26-29) apart; seta *e* 19 (17-26) long, located on 41st (36th–43rd) annulus; tubercles *e* 15 (13-16) apart; seta *f* 26 (26-29) long, located on 68th (59th-71st) annulus, or 5th (5th) annulus from rear; tubercles *f* 21 (18-21) apart.

Setae *h1* 4 (4-5) long, 7 (7-9) apart; setae *h2* 59 (57-73) long, 11 (10-12) apart; distance between *h1* and *h2* - 2 (2).

Genital parts 15 (12-16) long, 20 (19-22) wide, genital coverflap elongated transversally, with 13 (11-15) longitudinal striae; setae *3a* 15 (14-19) long, 10 (9-11) apart.

MALE (Figs. 6, 8) (9 specimens): body length 173-202; body width 38-42. Body shape similar to that of the female. Gnathosoma 20-23 long; dorsal seta *d* 6-7 long; *ep* seta 2-3 long; chelicerae 17-21 long. Shape and design of prodorsal shield similar to that of the female. Shield 36-38 long; 32-39 wide. Tubercles of setae *sc* 18-24 apart, on rear margin of shield; setae *sc* 17-22 long.

Leg I 26-31; femur 7-9; seta *bv* 9-10, position of seta *bv* 3-4; genu 4-5, seta *l"* 17-19, position of seta *l"* 2-3; tibia 5-6, seta *l'* 7-10, position of seta *l'* 2-3. Tarsus 5-6, setae: *ft"* 18-22, *ft'* 12-16, *u'* 5-7. Tarsal solenidion ω 7-8; tarsal empodium 8-9, 6-7-rayed. Leg II 24-27; femur 7; seta *bv* 9-11, position of seta *bv* 3-4; genu 4, *l"* 10-11, position of *l"* 2-3; tibia 4-5. Tarsus 5-6, *ft"* 19-24, *ft'* 8-10, *u'* 5-6. Tarsal solenidion ω 7-9; tarsal empodium 7-10, 6-7-rayed.

Coxae with a pattern similar to that of the female. Setae *1b* 8-9 apart, 7-10 long; setae *1a* 6-7 apart, 17-19 long; setae *2a* 15-18 apart, 43-46 long; distance between setae *1b* and *1a* 6-7, distance between setae *1a* and *2a* 5-7.

Opisthosoma with 48-55 dorsal annuli, 56-65 ventral annuli, 4-6 coxogenital annuli. Annuli microtuberculate, similar to that of the female.

Seta *c2* 33-38 long, located on 7th–9th annulus, tubercles *c2* 30-35 apart; ventral seta *d* 41-48 long, located on 16th-28th annulus; tubercles *d* 20-23 apart; seta *e* 17-23 long, located on 30th-36th annulus; tubercles *e* 10-12 apart; seta *f* 21-25 long, located on 52nd-51st annulus, or 5th annulus from rear; tubercles *f* 15-17 apart.

Setae *h1* 3-4 long, 6-7 apart; setae *h2* 9-10 apart; distance between *h1* and *h2* – 2.

Genital parts 12-14 long, 14-17 wide; setae *3a* 11-16 long, 12-13 apart; surface below the eugenital setae with minute conical microtubercles.

NYMPH (Fig. 7) (8 specimens): body 163-181 long, 40-45 wide. Gnathosoma 20-23 long; dorsal seta *d* 5-6 long; *ep* seta 2-3 long; chelicerae 17-21 long. Shape

and design of prodorsal shield similar to that of the female. Shield 33-37 long, 35-40 wide. Tubercles of setae *sc* 18-20 apart, on rear margin of shield; seta *sc* 11-14 long, projecting to rear.

Leg I 22-27; femur 6-7; seta *bv* 8-10, position of seta *bv* 3-4; genu 4-5, seta *l"* 16-19, position of seta *l"* 2-3; tibia 4-5, seta *l'* 5-7, position of seta *l'* 2-3. Tarsus 5-6, setae: *ft"* 18-23, *ft'* 11-15, *u'* 4-6. Tarsal solenidion *ω* 6-7; tarsal empodium 6-8, 5-6-rayed. Leg II 19-25; femur 6-8; seta *bv* 7-10, position of seta *bv* 3; genu 3-4, *l"* 10-12, position of *l"* 2; tibia 3-5. Tarsus 5, *ft"* 19-24, *ft'* 8-11, *u'* 5-7. Tarsal solenidion *ω* 7; tarsal empodium 7-8, 5-6-rayed.

Coxae with few dashes and minute microtubercles. Setae *1b* 8-9 apart, 7-10 long; setae *1a* 6-8 apart, 12-13 long; setae *2a* 17-19 apart, 29-33 long; distance between setae *1b* and *1a* 6-7, distance between setae *1a* and *2a* 5-7.

Opisthosoma with 52-55 dorsal annuli, 51-55 ventral annuli, 6-8 annuli to *3a* setae. Dorsal and ventral annuli with minute, conical microtubercles, set along annuli margins.

Seta *c2* 18-24 long, located on 7th-9th annulus, tubercles *c2* 29-33 apart; ventral seta *d* 26-32 long, located on 18th-20th annulus; tubercles *d* 18-23 apart; seta *e* 9-14 long, located on 27th-31st annulus; tubercles *e* 11-12 apart; seta *f* 15-19 long, located on 48th-51st annulus, or 5th annulus from rear; tubercles *f* 16-19 apart.

Setae *h1* 3-4 long, 5-6 apart; setae *h2* 8-10 apart. Setae *3a* 7-9 long, 6-8 apart.

LARVA (2 specimens): body vermiform, 126-147 long, 37-38 wide. Gnathosoma 22-23 long; dorsal seta *d* 6 long; *ep* seta 2-3 long; chelicerae 18-21 long. Prodorsal shield 29 long, 31 wide; triangular. Shield design: only parallel admedian lines. Tubercles of setae *sc* 11 apart, ahead of rear shield margin and directing setae centrad (Fig. 7); seta *sc* 7-9 long.

Leg I 24; femur 6; seta *bv* 8, position of seta *bv* 3; genu 3, seta *l"* 16; tibia 3; tarsus 3. Tarsal solenidion *ω* 6; tarsal empodium 6, 5-rayed. Leg II 21; femur 7; seta *bv* 6; genu 6, *l"* 11; tibia 4; tarsus. Tarsal solenidion *ω* 6; tarsal empodium 7, 5-rayed.

Opisthosoma with 33-45 dorsal annuli, 31-32 ventral annuli, 6 annuli to *3a* setae. Dorsal and ventral annuli with minute microtubercles, ahead of annuli margins; dorsal bead-like, ventral conical (Fig. 7).

Seta *c2* 19 long, located on 5th annulus, tubercles *c2* 31 apart; ventral seta *d* 14-19 long, located on 12th annulus; tubercles *d* 21 apart; seta *e* 8-10 long, located on 18th annulus; tubercles *e* 12 apart; seta *f* 11 long, located on 29th annulus, or 4th annulus from rear; tubercles *f* 15-19 apart.

Setae *h1* 3 long, 4-5 apart; setae *h2* 9 apart. Setae *3a* 4 long, 6 apart.

TYPE MATERIAL

Holotype female, 39 female paratypes, 14 males, 17 nymphs, 2 larvae.

Type host: *Bromus inermis* LEYSS. (Poaceae).

Relation to host plant: mites are vagrants on upper leaf surfaces.

Type locality: Hungary, Bükki Mountains, 580 m. a. s. l., oak forest; 48°02.730'N, 020°28.814' E; 29.09.2003; leg. A. Skoracka.

OTHER RECORD

Festuca rubra L. (Poaceae), locality, date and leg. as above; material examined: 12 females, 11 males, 9 nymphs.

ETYMOLOGY

The species is named for Jan BOCZEK – the prominent polish acarologist.

Abacarus acutatus SUKHAREVA, 1985

Material: 18 females, 4 males, 6 nymphs found as vagrant on upper leaf surfaces of *Calamagrostis epigeios* in Hungary, Bükki Mountains, 580 m. a. s. l., dry meadow near oak forest; 48°02.730' N, 020°28.814' E; 29.09.2003; leg. A. Skoracka. The species so far was recorded in Russia and Poland on four *Calamagrostis* spp., *Bromus inermis*, *Dactylis glomerata*, *Festuca rubra*, and *Holcus lanatus* (SUKHAREVA 1985, SKORACKA & PACYNA 2003, SKORACKA 2004).

Abacarus longilobus SKORACKA, 2002

Material: 44 females, 17 males, 20 nymphs, 7 larvae collected from *Trisetum flavescens* in Hungary, Bükki Mountains, 580 m. a. s. l., meadow near oak forest; 48°02.730' N, 020°28.814' E; 29.09.2003; leg. A. Skoracka. Mites were found as vagrant on upper leaf surfaces. The species so far was recorded only in Poland on *Agropyron repens*, *Arrhenantherum elatius*, *Bromus erectus*, and *B. inermis* (SKORACKA 2002).

Aceria eximia SUKHAREVA, 1983

Material: 16 females found as vagrants on upper leaf surfaces of *Calamagrostis epigeios* in Hungary, Bükki Mountains, 580 m. a. s. l., dry meadow near oak forest; 48°02.730' N, 020°28.814' E; 29.09.2003; leg. A. Skoracka. The species so far was recorded in Russia and Poland on *C. epigeios* and *Festuca rubra* (SUKHAREVA 1983, SKORACKA 2004).

Aceria tosichella KEIFER, 1969

Material: 9 females, 4 males, 1 larva collected from *Bromus inermis* in Hungary, Bükki Mountains, 580 m. a. s. l., oak forest; 48°02.730' N, 020°28.814'E; 29.09.2003; leg. A. Skoracka. 14 females, 4 males, 14 nymphs, 1 larva collected from *Agropyron repens* in Hungary, Hortobagy, by the road 33, 104 m. a. s. l., stubble field; 47°35.115' N, 021°07.145' E; 29.09.2003; leg. A. Skoracka. Mites were found as vagrants on upper leaf surfaces. The species has Holarctic distribution, so far was recorded in Asia, Australia, Europe, and North America from at least 30 grass species (AMRINE & STASNY 1994, SKORACKA 2004).

Aculodes multitricavus SKORACKA, 2004

Material: 3 females, 3 nymphs collected form *Bromus inermis* in Hungary, Bükki Mountains, 580 m. a. s. l., oak forest; 48°02.730' N, 020°28.814' E; 29.09.2003; leg. A. Skoracka. Mites were found vagrant on upper leaf surfaces. The species so far was recorded only in Poland on *B. inermis* and *T. flavescens* (SKORACKA 2004).

CONCLUSION

Summarizing, the grass-infesting eriophyoid mites are currently represented in Hungary by three genera and 14 species: eight species previously recorded: *Abacarus hystrix*, *Aceria arundinis*, *A. phalaridis*, *A. tenuis*, *A. tulipae*, *A. tosichella*, *Aculodes dubius*, and *A. mckenziei*, four species newly recorded for the Hungarian fauna: *Abacarus longilobus*, *A. acutatus*, *Aceria eximia*, and *Aculodes multitricavus*, and two species newly described to science: *Aceria triseti* and *Aculodes janboczeki.*

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