

## FOUR NEW ACERIA SPECIES (ACARI:ERIOPHYOIDEA) FROM SERBIA

R. PETANOVIĆ<sup>1</sup>, J. BOCZEK<sup>2</sup>, A. SHI<sup>2</sup>

<sup>1</sup>Faculty of Agriculture Belgrade-Zemun, P.O.Box 127, Nemanjina 6,  
YU-11081, Belgrade

<sup>2</sup>Department of Applied Entomology, Warsaw Agricultural University,  
Nowoursynowska 166, 02-787 Warsaw, Poland

Four new species of eriophyoid mites within the genus *Aceria*, from Serbia are described and illustrated: *A. cichorii* n.sp. causing "witches broom" on *Cichorium intybus* L. (Asteraceae), *A. matricariae* n. sp. free living in flower heads of *Matricaria chamomilla* L. (Asteraceae), *A. cirsii* n. sp. free living on *Cirsium rivulare* (Jacq.) All. (Asteraceae) and *A. cardui* n.sp. free living on *Carduus personata* (L.) Jacq. (Asteraceae).

KEY WORDS: eriophyoid mites, new *Aceria* species, Serbia, asteraceous plants

Four new *Aceria* species on plants of Asteraceae family are described and illustrated.

Type material has been deposited at the Department of Entomology, Faculty of Agriculture, University of Belgrade.

All measurements are expressed in micrometers. The following abbreviations are used to denote the various parts in the figures: AD-antero-dorsal mite; AL-antero-lateral mite; GF- genital region, female; GM- genital region, male; IG-internal genitalia, female; LO- lateral opisthosoma, PM- postero-lateral mite,  $\omega$ -solenidion, em- empodium.

***Aceria cichorii* n. sp. (Fig.1)**

**Female:** 158 (157-165) long, 67 wide, 60 thick, wormlike yellowish in color. Gnathosoma 23 long, dorsal pedipalpal genual seta 6 long, chelicerae 20 long, almost straight. Prodorsal shield 33 (30-35) long, 53 wide, without a lobe over gnathosoma, shield design of one median, 1 admedian 1 submedian on each side, and with some short lines posteriorly, submedians branched into 3 branches anteriorly. Dorsal tubercles situated on shield margin 32 apart, with scapular setae 22 long, directed to the rear, slightly converging.

Foreleg 27 long, tibia 7 long with paraxial tibial seta 6 long, tarsus 7 long, tarsal solenidion 8 long slightly knobbed, empodium 6 long, 4 rayed. Hindleg 25 long, tibia 6 long, tarsus 5 long, solenidion 7 long, slightly knobbed, empodium 6 long. Coxae with ornamentation of short lines, sternal line 9 long, forked; coxal setae **1b** 5 long, 13 apart; coxal setae **1a** 20 long, 8 apart; coxal setae **2a** 45 long, 21 apart.

Opisthosoma of 48 (41-50) microtuberculate dorsal annuli and 72 (65-72) microtuberculate ventral annuli. Setae **c2** 15 long, on ventral annulus 16; setae **d** 60 long, on ventral annulus 32; setae **e** 11 long, on ventral annulus 49; setae **f** 20 long on 5 ventral annulus from the rear; setae **h2** 70 long, setae **h1** 5 long.

Genitalia 13 long, 24 wide, with about 14-16 striae; setae **3a** 11 long, tubercles 16 apart; genitalia between ventral annuli 7 and 15.

**Male:** 125 long; prodorsal shield 25 long, opisthosoma of 39 dorsal and 58 ventral annuli; genitalia 19 wide, genital setae 10 long, tubercles 15 apart.

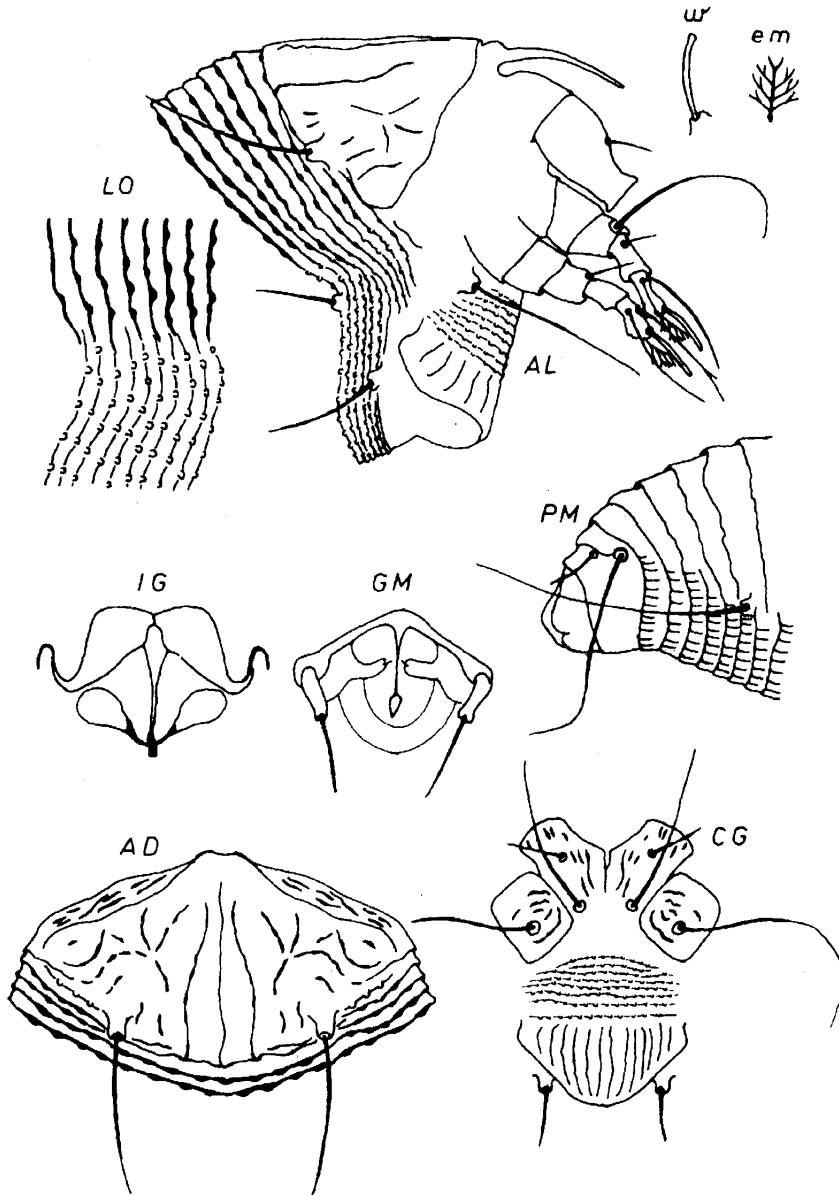
**Nymph:** 95 long, prodorsal shield 25 long, opisthosoma of 51 dorsal annuli, genital setae 10 long, 9 apart.

**Type locality:** Belgrade, Central Serbia, collected on July, 5, 2001 by D. Smiljanić.

**Host plant:** *Cichorium intybus* L. (Asteraceae).

**Relation to the host plant:** the mite lives in buds, causing “witches broom” of the plant.

**Type material:** Holotype female on slide 894/3 and 20 paratype females and 5 males.



**Fig. 1.** *Aceria cichorii* n.sp.; AD-antero-dorsal mite; AL antero-lateral mite ;CG- coxal-genital region; GM- genital region-male; IG-internal genitalia, female, LO-lateral opisthosoma, PM- postero-lateral mite, w - solenidion; em- tarsal empodium.

The new species is close to *Aceria baccharices* K. (Keifer, 1945), but it can be distinguished on the basis on differences in prodorsal shield ornamentation, length of setae **d**, number of female genital striae, the host plant and the relation to the host.

In *A. baccharices* shield ornamentation of a broken central line, curved admedian lines, curved submedian lines and a few lateral granulation, setae **d** 20 long; female genitalia with about 8-10 striae, and the mite causes irregular bead galls of *Baccharia viminea* DC (Asteraceae).

In the new species shield ornamentation of complete median and admedian lines and curved submedian lines branching distally; setae **d** 60 long; female genitalia with 14-16 striae and the mite causes "witches broom" of *Cichorium intybus* L. (Asteraceae).

#### *Aceria matricariae* n. sp. (Fig. 2)

**Female:** 160 (159-166) long, 59 wide, 66 thick, wormlike, whitish in color. Gnathosoma 26 long, dorsal pedipalpal genual seta 9 long, chelicerae 17 long, almost straight. Prodorsal shield 25 (25-27) long, 35 wide, without a lobe; design of one median, 1 admedian and 1 submedian line on each side; submedians close to admedians branched anteriorly. Dorsal tubercles situated on rear shield margin 22 apart, with scapular setae 70 long, directed to the rear and diverging.

Foreleg 29 long, tibia 8 long with paraxial tibial seta 10 long, tarsus 8 long, tarsal solenidion 7 long unknobbed, empodium 5 long, 5 rayed. Hindleg 27 long, tibia 6 long, tarsus 7 long, solenidion 8 long, unknobbed, empodium 6 long. Coxae ornamentation of short lines, sternal line 8 long, coxal setae **1b** 10 long, 10 apart, coxal setae **1a** 20 long, 8 apart, coxal setae **2a** 45 long, 20 apart.

Opisthosoma of 73 (67-73) microtuberculate dorsal annuli (last 14 smooth) and 84 microtuberculate ventral annuli. Setae **c2** 35 long, on ventral annulus 16, setae **d** 70 long, on ventral annulus 29, setae **e** 20 long, on ventral annulus 48, setae **f** 20 long on 7 annulus from the rear; setae **h2** 80 long, setae **h1** 6 long.

Female genitalia 12 long, 20 wide, with about 14 striae, setae **3a** 20 long, tubercles 16 apart; genitalia between 7 and 12 ventral annuli.

**Male:** not measurable.

**Nymph:** 124 long, prodorsal shield 24 long, opisthosoma of 60 dorsal annuli; genital setae 8 long, 6 apart.

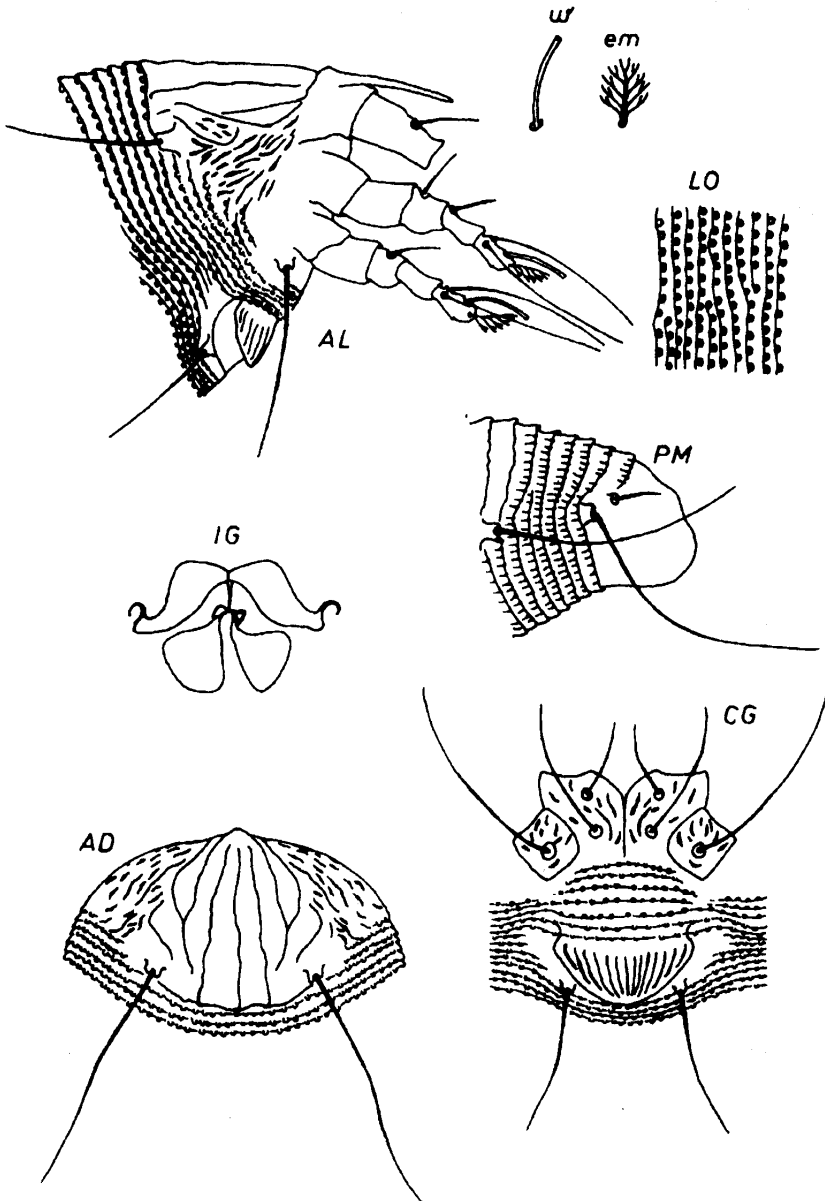


Fig. 2 . *Aceria matricariae* n. sp.; AD-antero-dorsal mite; AL antero-lateral mite ;CG-coxal-genital region; IG-internal genitalia, female, LO-lateral opisthosoma, PM- postero-lateral mite,  $\omega$  - solenidion; em- tarsal empodium.

**Type locality:** Belgrade, Central Serbia, collected on July, 30, 1999 by T. Simić.

**Host plant:** *Matricaria chamomilla* L. (Asteraceae).

**Relation to the host plant:** free living in flower heads; damages not observed.

**Type material:** Holotype female on slide 830/3, and 10 paratype females and 1 male.

The new species is close to *Aceria chondrillae* (Can.) (Canestrini, 1891), but it can be distinguished on the basis on differences in the length of scapular setae and opisthosomal setae **d**, the number of dorsal and ventral opisthosomal annuli, the host plant and the relation to the host plant.

In *A. chondrillae* scapular setae 40 long, opisthosomal setae **d** 50 long, opisthosoma of 54 annuli and it causes galls and stunting of the host plant, *Chondrilla juncea* L.

In the new species, scapular setae 70 long, opisthosomal setae **d** 70 long, opisthosoma of 73 dorsal and 84 ventral annuli and the mite is free living in the flower heads of *Matricaria chamomilla* L. No damages have been observed yet, to the host plant.

### *Aceria cirsii* n. sp. (Fig.3)

**Female:** 158 long, 50 wide, 55 thick, wormlike whitish in color. Gnathosoma 20 long, dorsal pedipalpal genual 5 long, chelicerae 15 long, almost straight. Prodorsal shield 30 long, 30 wide, without lobe; design of one median, one admedian and one submedian line on each side and many short longitudinal lines. Dorsal tubercles situated on rear shield margin, 17 apart, with scapular setae 65 long, directed to the rear and diverging.

Foreleg 26 long, tibia 8 long with paraxial tibial seta 6 long, tarsus 6 long, tarsal solenidion 8 long, slightly knobbed, empodium 6 long, 4 rayed. Hindleg 24 long, tibia 6 long, tarsus 5 long, solenidion 7 long, empodium 5 long. Coxae ornamentation of many short lines; sternal line 12 long; coxal setae **1b** 5 long, 10 apart; coxal setae **1a** 20 long, 5 apart; coxal setae **2a** 40 long, 17 apart.

Opisthosoma of 86 (85-95) microtuberculate dorsal annuli and 75 (75-78) microtuberculate ventral annuli. Setae **c2** 12 long on ventral annulus 11, setae **d** 35 long on ventral annulus 28, setae **e** 10 long on ventral annulus 47, setae **f** 20 long on 7 annulus from the rear; setae **h2** 54 long, setae **h1** 6 long.

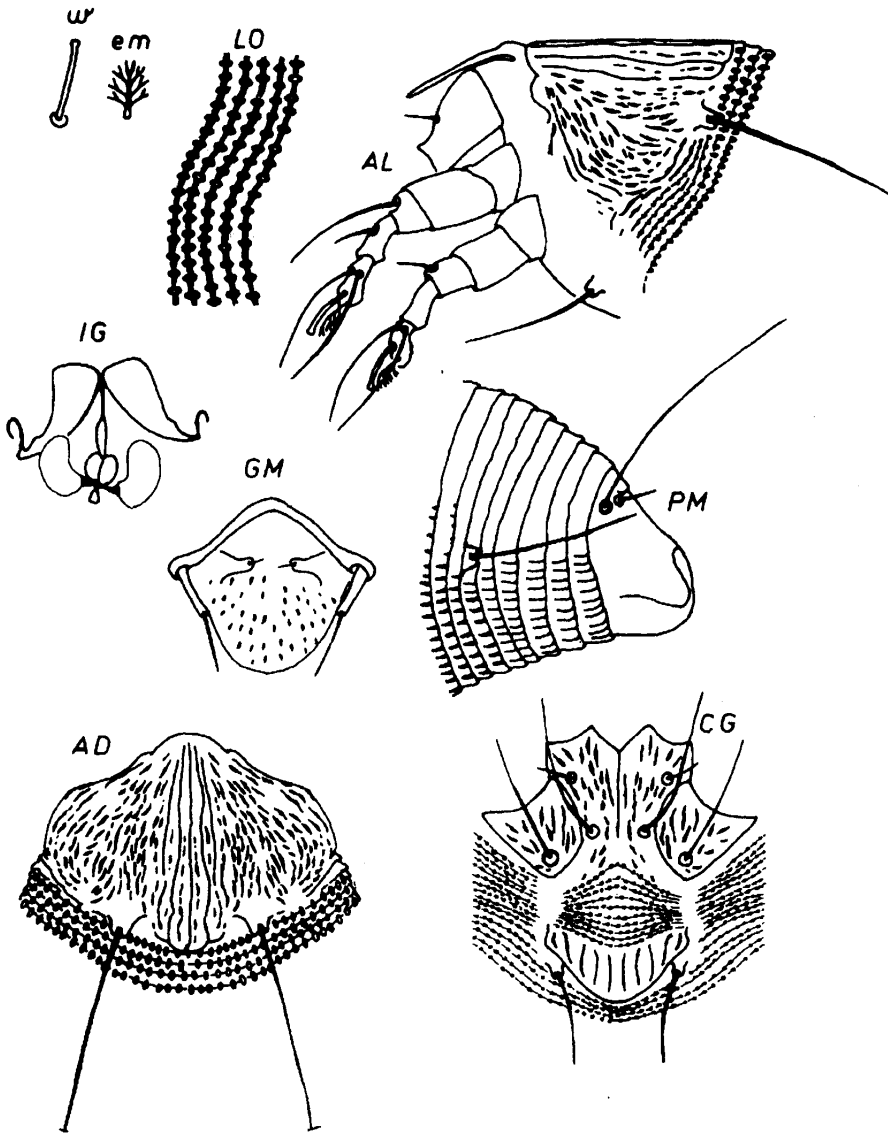


Fig. 3. *Aceria cirsii* n. sp.; AD-antero-dorsal mite; AL antero-lateral mite ;CG- coxal-genital region; GM- genital region-male; IG-internal genitalia, female, LO-lateral opisthosoma, PM- postero-lateral mite, ω - solenidion; em- tarsal empodium.

Female genitalia 10 long, 20 wide, with about 10 striae, setae **3a** 10 long, tubercles 14 apart; genitalia between ventral annuli 10 and 15.

**Male:** 159 long; prodorsal shield 30 long, opisthosoma of 90 dorsal and 80 ventral annuli, genitalia 20 wide; genital setae 5 long, tubercles 18 apart.

**Nymph:** 122 long, prodorsal shield 27 long, opisthosoma of 70 dorsal annuli, genital setae 7 long, 6 apart.

**Type locality:** Mitrovac, Mt. Tara, South West Serbia, collected on July 12, 2000, by V. Stevanović.

**Host plant:** *Cirsium rivulare* (Jacq.) All. (Asteraceae).

**Relation to the host plant:** Free living on the surface of plant organs.

**Type material:** Holotype female on slide 845/3, and two paratype females and 5 males.

The new species is close to *Aceria anthocoptes* (Nal.) (Nalepa, 1892), but it can be distinguished on the bases of differences in the number of empodial rays, number of dorsal opisthosomal annuli, length of opisthosomal setae **d**, number of genital striae, the host plant and the relation to the host plant.

In *A. anthocoptes* empodium 5 rayed, opisthosoma of 65 dorsal annuli, setae **d** very long (according to Petanović et al, 1997, 80 long), genitalia with about 16 striae and it causes hardening of green inflorescence and additional capitula of *Cirsium arvense* (L.) Scop. (Asteraceae).

In the new species empodium 4 rayed, opisthosoma of about 85-95 dorsal annuli, setae **d** 35 long, genitalia with about 10 striae and the mite lives free between the hairs on the surface of leaves and stems of *Cirsium rivulare* (Jacq.) All. (Asteraceae).

#### *Aceria cardui* n. sp. (Fig. 4)

**Female:** 195 (190-195) long, 75 wide, 80 thick, wormlike, whitish in color. Gnathosoma 25 long, dorsal pedipalpal genual seta 6 long, chelicerae 20 long. Prodorsal shield 40 (39-41) long 45 wide, without a lobe; design of one median, one admedian and one submedian on each side and some short lines on posterior part of the shield; dorsal tubercles situated on rear shield margin 28 apart, with scapular setae 80 long, directed to the rear.



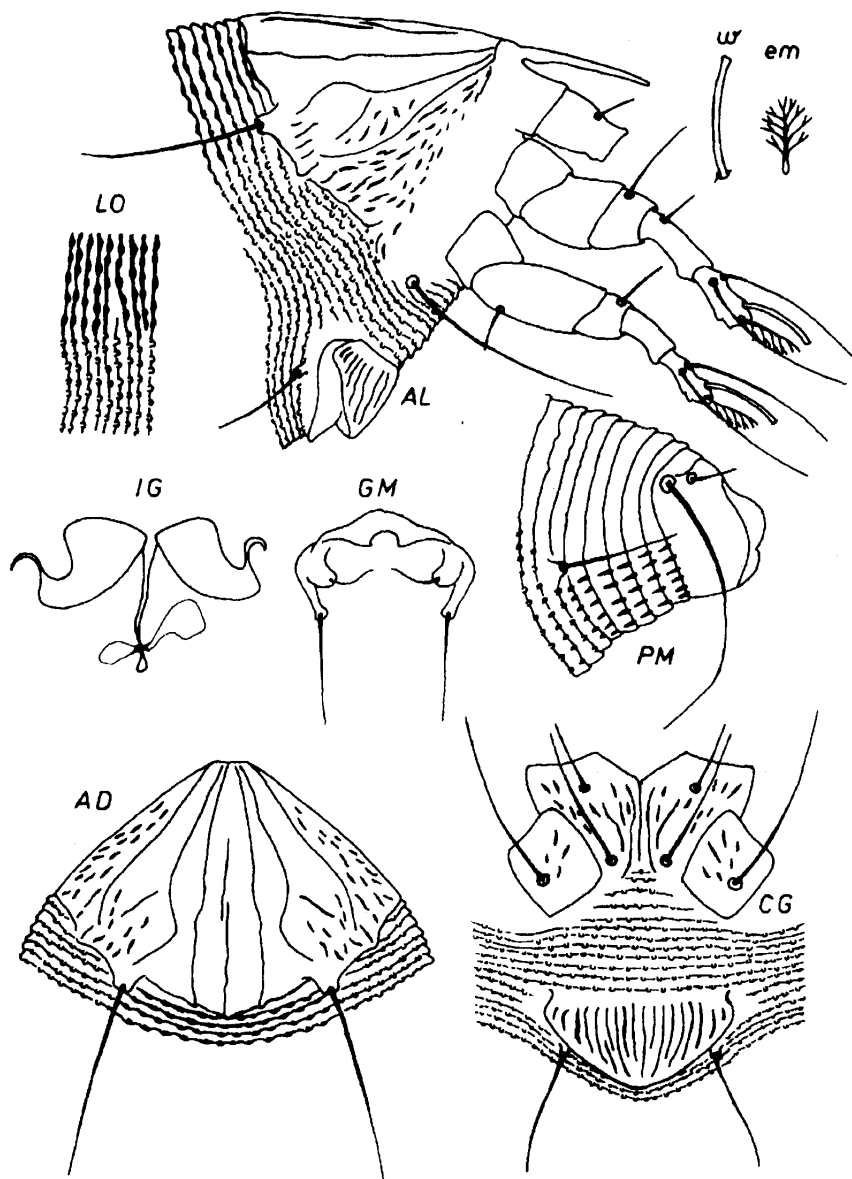


Fig. 4. *Aceria cardui* n. sp.; AD-antero-dorsal mite; AL antero-lateral mite ;CG- coxal-genital region; GM- genital region-male; IG-internal genitalia, female, LO-lateral opisthosoma, PM- postero-lateral mite,  $\omega$  - solenidion; em- tarsal empodium.

Foreleg 40 long, tibia 9 long with paraxial tibial seta 12 long, tarsus 11 long, tarsal solenidion 10 long, slightly knobbed, empodium 7 long, 5 rayed. Hindleg 38 long, tibia 8 long, tarsus 9 long, solenidion 9 long, slightly knobbed, empodium 6 long. Coxae ornamentation of short lines, sternal line 11 long, coxal setae **1b** 10 long, 15 apart; coxal setae **1a** 20 long, 7 apart; coxal setae **2a** 60 long, 30 apart.

Opisthosoma of 80 (72-85) microtuberculate dorsal annuli and 91 (82-94) microtuberculate ventral annuli; setae **c2** 20 long on ventral annulus 16; setae **d** 60 long on ventral annulus 34; setae **e** 15 long on ventral annulus 57; setae **f** 20 long on 8 annulus from the rear; setae **h2** 70 long, setae **h1** 5 long.

Female genitalia 13 long, 25 wide, with about 17-18 striae; setae **3a** 25 long, tubercles 20 apart; genitalia between ventral annuli 11 and 15.

**Male:** 160 long; prodorsal shield 35 long, opisthosoma of 76 dorsal and 86 ventral annuli; genital setae 10 long, tubercles 17 apart.

**Nymph:** 120 long; prodorsal shield 35 long; opisthosoma of 78 dorsal annuli, genital setae 5 long, 10 apart.

**Type locality:** Sjenić, Mt. Tara, South- Western Serbia, collected on July, 11, 2000, by V. Stevanović.

**Host plant:** *Carduus personata* (L.) Jacq. (Asteraceae).

**Relation to the host plant:** free living on plant surface.

**Type material:** Holotype female on slide 846/6, and 18 paratype females and one male.

The new species is close to *Aceria balasi* Farkas (Farkas, 1960), but it can be distinguished on the basis of differences in shield design, the number of genital striae, the host plant and the relation to the host plant.

In *A. balasi* shield design of one median, one admedian complete line and one submedian on distal part of the shield on each side; female genitalia with 12 striae and mite causes galls of the host *Carduus acanthoides* L. (Asteraceae).

In the new species shield design of one broken median line, two complete admedians and two submedians, diverging to the proximal part of the shield, female genitalia with 16-18 striae and the mite is free living on the host plant *Carduus personata* (L.) Jacq. (Asteraceae).

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## ЧЕТИРИ НОВЕ ВРСТЕ РОДА *ACERIA* (ACARI:ERIOPHYOIDEA) ИЗ СРБИЈЕ

Р. ПЕТАНОВИЋ, Ј. БОЦЕК, А. ШИ

### И з в о д

У раду су описане четири нове врсте ериофида из рода *Aceria* (Acari: Eriophyoidea): *Aceria cichorii* n. sp. са *Cichorium intybus* L., *A. matricariae* n.sp. са *Matricaria chamomilla* L., *A. cirsii* n. sp. са *Cirsium rivulare* (Jacq.) All. и *A. carduii* n.sp. са *Carduus personata* (L.) Jacq. Нове врсте су нацртане и описане, а приложене је и диференцијална дијагноза у односу на *Aceria baccharices* K., *A. chondrillae* (Can.), *A. anthocoptes* (Nal.) и *A. balasi* Farkas.

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