

UROPODINA MITES (ACARI: MESOSTIGMATA) FROM VENEZUELA, WITH DESCRIPTIONS OF FOUR NEW SPECIES

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Seven Uropodina species are listed from Venezuela. Four of them are new to science (*Tetrarsejaspis muranyii* sp. n., *Cyllibula (Wagenaaria) pocsi* sp. n., *Uropoda csuzdii* sp. n., *Rotundabaloghia mahunkana* sp. n.) and the other three are known species (*Cyllibula (Wagenaaria) altasimilis* (HIRSCHMANN 1977), *Tetrarsejaspis dinychooides* SELLNICK 1941, *Clausiadinyc-hus pulcherrimus* HUȚU 1991). With 22 figures.

Key words: Acari, Uropodina, new species, new records, Venezuela

INTRODUCTION

Venezuela possesses one of the most well-known Uropodina fauna in South America. After the first report of HIRSCHMANN and WIŚNIEWSKI (1985) on the uropodid mites of Venezuela, MARINA HUȚU, the noted Romanian acarologist devoted two papers to this group. In the first one she recorded 11 known species in Venezuela and described another four new to science (HUȚU 1987). In her second article further four new species were described (HUȚU 1991).

Later HIRSCHMANN (1992) also described several Uropodina mites from Venezuela, and WIŚNIEWSKI (1993) summarised all the Uropodina species recorded so far for Venezuela (27 species), but unfortunately the two above mentioned works of HUȚU (1987, 1991) were overlooked.

Hungarian soil zoologists have been investigating the soil fauna of the tropics for a long time. Their last project, which was focused on the comparison of the canopy (fauna of the epiphyte and arboricolous habitat) and leaf litter soil fauna in the tropics, resulted in several publication on the mite fauna of the Dominican Republic (KONTSCHÁN & MAHUNKA 2004, KONTSCHÁN 2005) and Venezuela (MAHUNKA 2005, 2006).

The present paper reports the Uropodina mites collected by the members of the Bryology Research Group of Hungarian Academy of Sciences and the Systematic Zoology Research Group of Hungarian Academy of Sciences in the framework of the above mentioned project in Venezuela.

MATERIAL AND METHODS

The specimens were studied with traditional methods. Lactic acid was used to clear the specimens. The drawings were made with camera lucida. The specimens are stored in 70% alcohol and deposited in the Collections of Soil Zoology of the Hungarian Natural History Museum. Measurements are given in micrometers (μm). The nomenclature and system of the species follow the work of WIŚNIEWSKI and HIRSCHMANN (1993).

TAXONOMY

Clausiadinychus pulcherrimus HUȚU, 1991
(Figs 1–2)

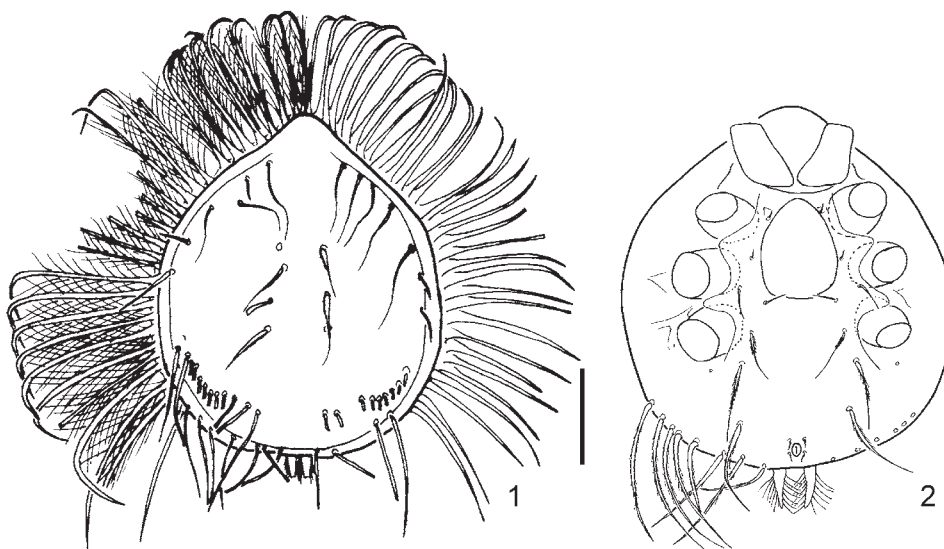
Clausiadinychus pulcherrimus HUȚU: 1991: 20–28.

Material examined: 2 females, Venezuela, Andes, Sierra de La Culata, submontane rain forest dominated by *Decusocarpus* (experimental forest of ULA), La Carbonera, 11.04.2005, from litter and soil, leg. Cs. CSUZDI & D. MURÁNYI.

Previous records: Venezuela, Parque National Rancho Grande (HUȚU 1991).

Distribution: Venezuela

Re-description: Female: Idiosoma pentagonal, 730–740 length, 620–630 wide.



Figs 1–2. *Clausiadinychus pulcherrimus* HUȚU, 1991: 1 = dorsal view, 2 = ventral view (Scale bar: 200 μm)

Dorsal side (Fig. 1): All marginal setae are very long, with long hairs, and placed in small protuberances. Dorsal setae long and wide, proximal part with serrated margin. Dorsal shield without ornamentation.

Ventral side (Fig. 2): One part of sternal setae (St1, St2 and St3) short, smooth and needle-like. Near St1 placed lyriform fissures, other two sternal setae (St4 and St5) long and their proximal part with serrated margin. Ventral setae long and setiform also with serrated margin, one pair of ventral setae, on posterior part of anus wide and with long hairs. Ventral shield without ornamentation.

Genital shield scutiform, without processes and ornamentation.

Gnathosoma: Corniculi horn-like, laciniae bifurcated, central branches with short spines, marginal branches with long hairs. Hypostomal setae are the follows: h1 long, smooth and setiform, h2 shorter than h1 (h1:h2 = 4:1), H3 as long as h1, but bear short hairs on their margin. H4 as long as h2, but bear some spines on their margin. Base of tritosternum with two spines, laciniae with four branches, central branches with short hairs, marginal branches are smooth.

Tetrsejaspis dinychoides SELLNICK, 1941

(Figs 3–4)

Tetrsejaspis dinychoides SELLNICK: 1941: 145–156.

Material examined: 2 females, Venezuela, Andes, degraded mountain rain forest along the road from La Culata to Mérida, 01.04.2005, N 08°43.325, W 71°04.978, 2690 m.a.s.l., from litter and decaying wood, leg. Cs. CSUZDI & D. MURÁNYI. 1 female, Venezuela, Andes, Sierra de La Culata, submountain rain forest dominated by *Decusocarpus* (experimental forest of ULA), *La Carbonera*, 11.04.2005, from litter and soil, leg. Cs. CSUZDI & D. MURÁNYI.

Previous record: La Guayra, Venezuela (SELLNICK 1941)

Distribution: Venezuela

Re-description: Idiosoma pear-like, 700 long, 400 wide.

Dorsal side (Fig. 3): All dorsal setae long, smooth and setiform. Only central part of dorsal shield bears alveolar ornamentation, between I setae. Postdorsal shield subdivided to three parts and without pattern and setae. Marginal shield without sculpture, and bears smooth and setiform setae. Marginal setae shorter than dorsal setae (1:2).

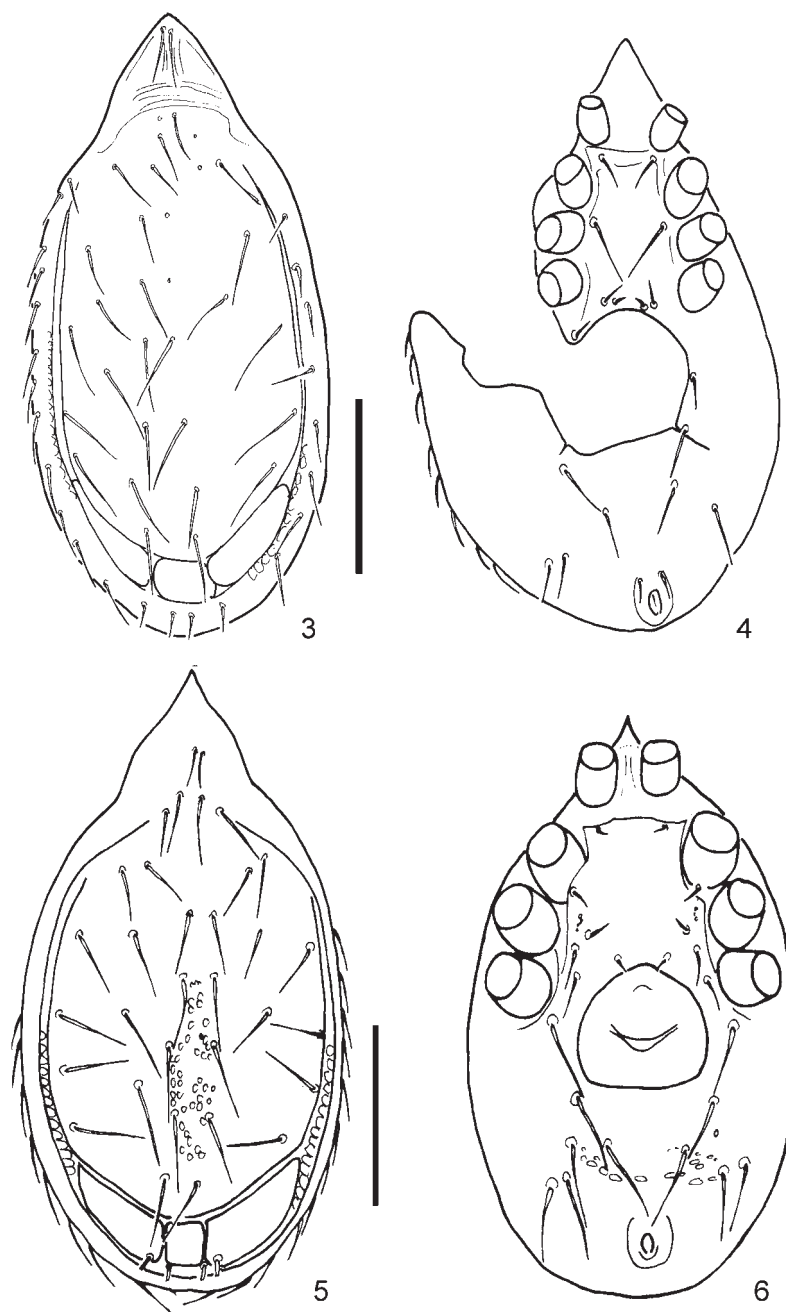
Ventral side (Fig. 4): Sternal shield without ornamentation. St2 very long, St4–5 short, St3 very short. St3 and 4 situated near the anterior margin of genital shield. Ventral setae as long as St2. Sternal and ventral shield without ornamentation. Genital shield of female large, rounded.

Gnathosoma not clearly visible (covered by coxae 1).

Tetrsejaspis muranyii sp. n.

(Figs 5–6)

Holotype: female (UROTY040). Venezuela, Parque Nacional Henri Pittier, seasonal rain forest, 20.04.2005. litter, soil and dead wood from the stream shore, leg. Cs. CSUZDI & D. MURÁNYI.



Figs 3–6. *Tetrasejaspis* species from Venezuela: 3–4 = *T. dinychoides* SELLNICK, 1941, 3 = dorsal view, 4 = ventral view, 5–6 = *T. muranyii* sp. n., 5 = dorsal view, 6 = ventral view (Scale bar: 200 μ m)

Etymology: This species is dedicated to DÁVID MURÁNYI, who collected the soil materials in Venezuela.

Diagnosis: First sternal setae shorter than the others, all sternal setae smooth and setiform. Ventral setae very long, smooth and setiform. All dorsal setae long and filiform. Postdorsal shield subdivided to three part, their ornamentation lacking, central part without setae, but one pair of setiform setae on its anterior margin.

Female. Idiosoma pear-like, 748 long, 462 wide (n=1).

Male, deuteronymph and protonymph unknown.

Description: Dorsal side (Fig. 5). Surface of the lateral part of dorsal shield is smooth, central part with alveolar ornamentation. All dorsal setae are long and filiform. Postdorsal shield subdivided to three part, without ornamentation. Central part without setae, but one pair of setiform setae on its anterior margin. Two lateral parts of postdorsal shield with one setiform seta. Scalloping between the marginal and dorsal shields. Marginal shield without ornamentation. Marginal setae shorter than dorsal setae, smooth and setiform.

Ventral side (Fig. 6): Sternal shield without ornamentation. The first sternal setae are shorter than others, all sternal setae smooth and setiform. Ventral setae are very long, smooth and setiform. Alveolar ornamentation on apical part of anal region. Anal setae not clearly visible.

Genital shield large, rounded, without ornamentation and processes.

Peritreme and stigma not clearly visible (covered by coxae 1 and 2).

Gnathosoma: Not clearly visible (covered by coxae 1).

Remarks: The new species is similar to the species *Tetrasejaspis carlosbordoni* HUŤU, 1991, their distinguishing characters are summarised in Table 1.

Cyllibula (Wagenaaria) altasimilis (HIRSCHMANN, 1977)
(Fig. 7)

Cyllibula altasimilis HIRSCHMANN: 1977: 56–57.

Cyllibula (Wagenaaria) altasimilis: BŁOSZYK et ATHIAS-BINCHE 1986: 163.

Material examined: 1 female, Venezuela, Andes, degraded mountain rain forest along the road from La Culata to Mérida, 01.04.2005, N 08°43.325, W 71°04.978, 2690 m.a.s.l., from litter and decaying wood, leg. Cs. CSUZDI & D. MURÁNYI.

Previous record: Bolivia, Guayaramerin (Beni) (HIRSCHMANN, 1977).

Distribution: Bolivia and Venezuela.

Re-description. Female: Idiosoma oval, 930 length, 780 wide.

Table 1. Distinguishing characters of *T. muranyii* n.sp. and *T. carlosbordoni* (l: length, w: width)

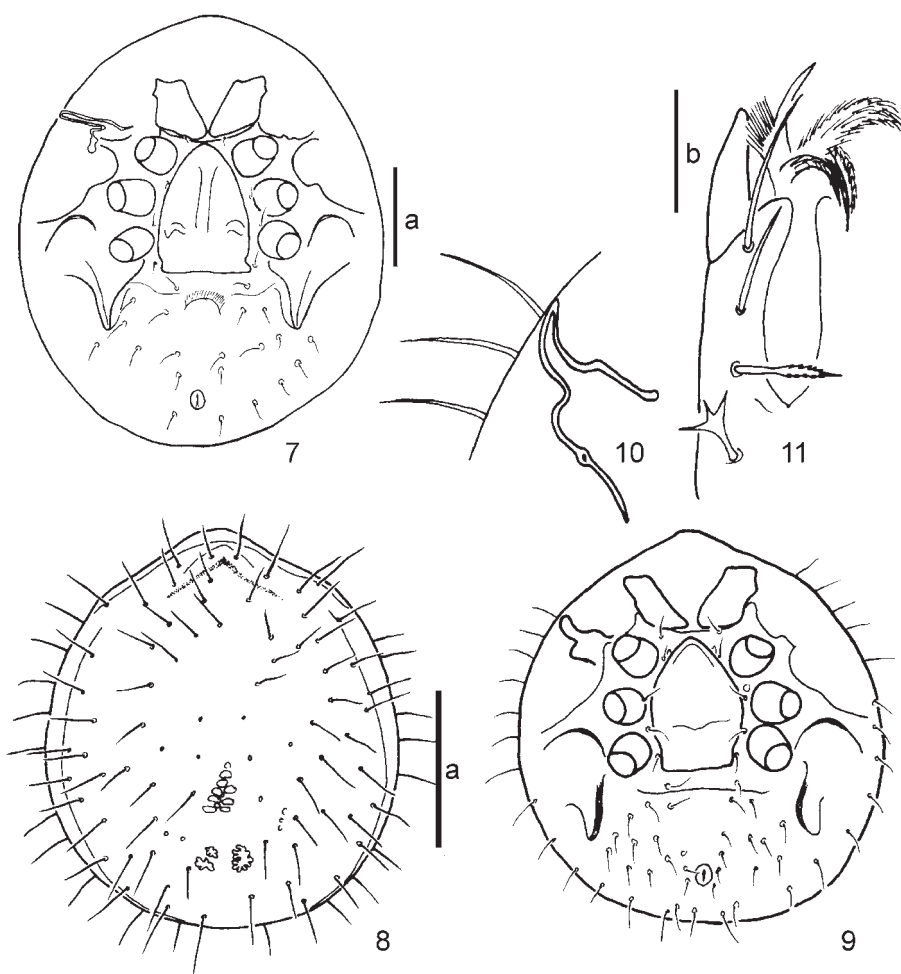
	<i>T. muranyii</i>	<i>T. carlosbordoni</i>
Genital shield of female	narrower (l:w=1:1)	thinner (l:w=1:3)
Sternal setae 4	short	long

Dorsal side: All dorsal and marginal setae smooth and setiform. Dorsal and marginal shield without ornamentation.

Ventral side: Sternal shield without pattern, all sternal setae smooth and needle-like. St1 placed near the anterior margin of genital shield, St2 between coxae 2 and 3, St3 between coxae 3 and 4, St4 near central part of coxae 4, St5 near the posterior margin of genital shield. Ventral setae smooth and setiform, as long as the sternal setae. There are two lyriform fissures on posterior part of anus. Stigma situated between coxae 2 and 3, peritreme U-form.

Genital shield large scutiform, without processes and ornamentation.

Gnathosoma: Corniculi horn-like, laciniae, with some long branches bearing short hairs. Hypostomal setae h1 long, smooth and setiform h2, similar to h1, but h2 bear short spines on its mar-



Figs 7–11. *Cyllibula (Wagenaar)* species from Venezuela: 7 = ventral view of *C. (W.) altasimilis* (HIRSCHMANN, 1977); 8–11 = *C. (W.) pocsi* sp. n.: 8 = dorsal view, 9 = ventral view, 10 = peritreme, 11 = ventral view of gnathosoma (Scale bar: a = 200 μ m, b = 50 μ m)

gin, h2 longer than h1, h3 long, setiform, with serrated margin. Seta h4 antler shaped. Epistoma, tritosternum and chelicerae not clearly visible.

Cyllibula (Wagenaaria) pocsi sp. n.
(Figs 8–11)

Holotype: female (UROTY041). Venezuela, Andes, degraded mountain rain forest along the road from La Culata to Mérida, 01.04.2005, N 08°43.325, W 71°04.978, 2690 m.a.s.l., from litter and dead wood, leg. Cs. CSUZDI & D. MURÁNYI. **Paratype:** female (UROTY042), locality and data same as the holotype.

Etymology: This species is dedicated to Dr. TAMÁS PÓCS, who collected the soil materials in Venezuela.

Diagnosis: Ventral shield with several smooth and setiform setae. Peritreme Y-form. Genital shield of female scutiform, without ornamentation. Dorsal shield provided with several smooth setiform setae and without ornamentation.

Female. Idiosoma oval, 525–530 long, 435–476 wide (n=2).
Male, deuteronymph and protonymph unknown.

Description: Dorsal side (Fig. 8). Dorsal and marginal shields without ornamentation, all marginal and dorsal setae long, smooth and setiform.

Ventral side (Fig. 9). Sternal shield without ornamentation. All sternal setae are smooth and filiform and shorter than the several, smooth and filiform ventral setae. Ornamentation of ventral shield lacking.

Genital shield large, scutiform and without ornamentation and process.

Stigma placed between coxae 2 and 3, peritreme Y-form (Fig. 10).

Gnathosoma (Fig. 11): Corniculi horn-like, laciniae, with some long branches bearing short hairs. Hypostomal setae h1 and h2 long, smooth and setiform, h1 longer than h2, h3 long, apical part with serrated margin. Seta h4 antler shaped. Epistoma, tritosternum and chelicerae not clearly visible.

Remarks: BŁOSZYK and ATHIAS-BINCHE (1986) described one new species (*Cyllibula jakubi* BŁOSZYK et ATHIAS-BINCHE, 1986), they placed this species in the new subgenus *Wagenaaria* BŁOSZYK & ATHIAS-BINCHE, 1986. This subgenus consist of six species (*C. jakubi* BŁOSZYK et ATHIAS-BINCHE, 1986, *C. alta* (SELLNICK, 1973), *C. magna* ZIRNGIEBL-NICOL et HIRSCHMANN, 1977, *C. altasimilis* HIRSCHMANN, 1977, *C. rotunda* ZIRNGIEBL-NICOL et HIRSCHMANN, 1977 and *C. hirschmanni* HIRAMATSU, 1979 (BŁOSZYK & ATHIAS-BINCHE 1986). The new species belongs to this subgenus, the most important differences are the following: the new species has more ventral setae than the other species from this subgenus. The shape of peritreme is unique in this subgenus, and the shape of h3 differs from the other *Cyllibula (Wagenaaria)* species.

Uropoda csuzdii sp. n.

(Figs 12–15)

Holotype: female (UROTY043). Venezuela, Andes, Parque Nacional La Culata, dry subparámo around the headwaters of Rio Mucujun, above El Escorial, La Culata, 01.04.2005, N 08°45.32, W 71°03.33, 3180 m.a.s.l., from moss and soil from stream shore, leg. Cs. CSUZDI & D. MURÁNYI. Paratype: female (UROTY044), locality and data same as the holotype.

Etymology: This species is dedicated to Dr. CSABA CSUZDI, who collected the soil materials in Venezuela.

Diagnosis: Ventral shield with several smooth and setiform setae. Peritreme U-form. Genital shield of female without ornamentation and scutiform. Dorsal shield with several smooth setiform setae and without ornamentation. Marginal shields are not fused on posterior part of dorsal side of idiosoma.

Female. Idiosoma oval, 620–610 µm long, 540–530 µm wide (n=2).

Male, deuteronymph and protonymph unknown.

Dorsal side (Fig. 12): Dorsal and marginal shields without ornamentation, marginal shields are not fused on posterior part of dorsal side of idiosoma. All marginal and dorsal setae short, smooth and setiform.

Ventral side (Fig. 13): Sternal and ventral shields without ornamentation. All sternal setae smooth and filiform and shorter than smooth and setiform ventral setae.

Genital shield large, scutiform and without ornamentation and process, placed between coxae 2 and 4.

Stigma placed between coxae 2 and 3, peritreme U-form (Fig. 14).

Gnathosoma (Fig. 15): Corniculi horn-like, laciniae, long with short hairs on apical part. Hypostomal setae h1 long, smooth and setiform, h2 short, smooth and setiform, h3 short, with serrate margin, h4 short with three short spines on apical part. Epistoma, tritosternum and chelicerae not clearly visible.

Remarks: The species new species is similar to *Uropoda (Cilliba) australis* HUȚU, 1987. The most important distinguishing character is that the poststigmatid part of the peritreme of the new species is narrower than that of *Uropoda (C.) australis*.

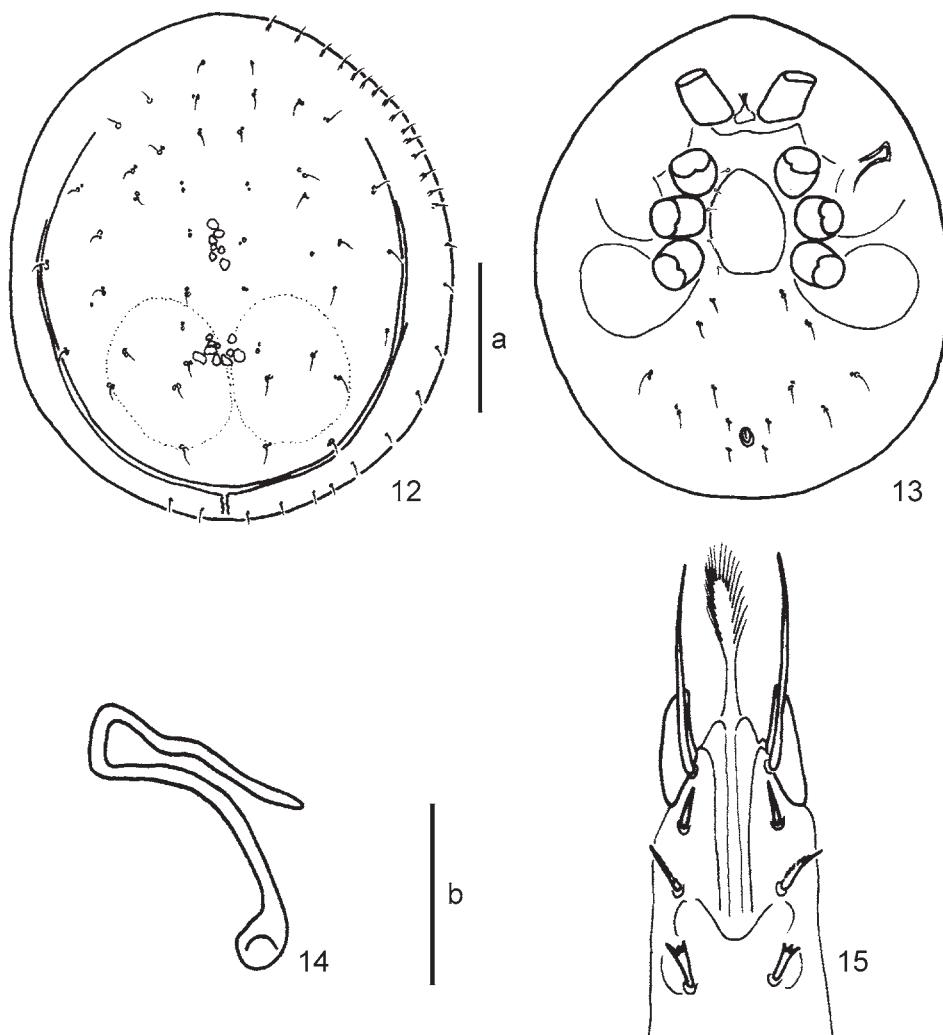
Rotundabaloghia mahunkana sp. n.

(Figs 16–22)

Holotype: female (UROTY045). Venezuela, Sierra de la Cubata Moute Zerpa, 2100 m.a.s.l., mountain rain forest, from soil and litter, 04.03.1997. leg. T. PÓCS. Paratype: female (UROTY046), locality and data same as the holotype, other paratypes: two females and one male (UROTY047): Venezuela, P. N. Sierra Nevada de Mérida “Da Mantana” Montana, rain forest, 2470 m.a.s.l., from litter and soil, 15.02.1997. leg. T. PÓCS.

Etymology: The new species is dedicated to Prof. Dr. SÁNDOR MAHUNKA on his seventieth Birthday.

Diagnosis: Spatuliform ventral setae situated near metapodal line. Other ventral setae thin, smooth and setiform. Peritreme hook-shaped. Genital shield of female large, oblong, without process and with alveolar ornamentation. All dorsal setae long, smooth setiform or lanceolate.

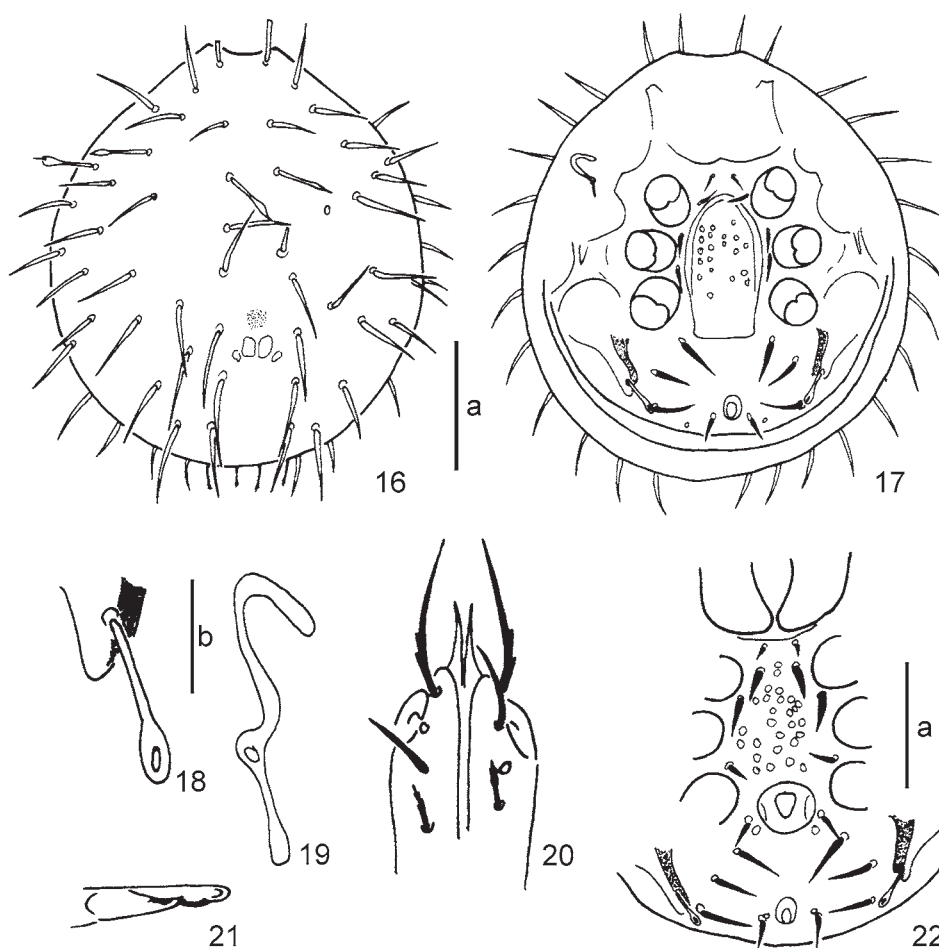


Figs 12–15. *Uropoda csuzdii* sp. n.: 12 = dorsal view, 13 = ventral view, 14 = peritreme, 15 = ventral view of gnathosoma (Scale bar: a = 200 μ m, b = 50 μ m)

Female. Idiosoma oval, 330–340 long, 300–310 wide (n=2).
Deuteronymph, protonymph and larva unknown.

Description: Dorsal side (Fig. 16). All dorsal setae long, thin, setiform or lanceolate. All setae situated in small base. Dorsal shield punctuated. All marginal setae as long as dorsal setae, but the marginal setae are setiform.

Ventral side (Fig. 17): Sternal and ventral shields without ornamentation. All sternal setae smooth, thin and setiform. Ventral setae also smooth, thin and setiform, but longer than sternal setae. One pair of ventral setae spatuliform and situated near to metapodal line (Fig. 18).



Figs 16–22. *Rotundabaloghia mahunkana* n. sp.: 16 = dorsal view, 17 = ventral view of female, 18 = spatuliform seta, 19 = peritreme, 20 = ventral view of gnathosoma, 21 = chelicera, 22 = ventral view of male (Scale bar: a: 200 μ m, b: 50 μ m)

Genital shield large, oblong and with alveolar ornamentation and without process, placed between coxae 2 and base of V1 setae.

Stigma placed between coxae 2 and 3, peritreme is hook-shaped (Fig. 19).

Gnathosoma (Fig. 20): Corniculi horn-like, laciniae, long without hairs. Hypostomal setae h1 long, setiform and with two spines on margin, h2-h3 shorter than h1, smooth and setiform, h4 short, with serrate margin. Tritosternum and epistoma not clearly visible, apical part of chelicera is shown in Fig. 21.

Male: Dorsal side is similar that of females. Sternal and ventral setae as in females, ornamentation of sternal shield is alveolate. Genital shield rounded, placed between coxae IV (Fig. 22).

Remarks: The new species is a typical *Rotundabaloghia* (see KONTSCHÁN 2006) belonging to the *haradai* species-group. Its most important character is the spatuliform setae near metapodal line, and these setae are not spatuliform in the other species of the *haradai*-group.

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