

Genus	Vol. 21(1): 121-134	Wrocław, 30 III 2010
-------	---------------------	----------------------

New and little known Uropodina species from Panama (Acari: Mesostigmata)

JENŐ KONTSCHÁN

Systematic Zoology Research Group, Hungarian Academy of Sciences, Department of Zoology,
Hungarian Natural History Museum, H-1088 Budapest, Baross u. 13. Hungary,
e-mail: kontscha@zool.nhmus.hu

ABSTRACT. Nine Uropodina species were found in the unsorted soil samples of the Soil Zoology Collections of the Hungarian Natural History Museum from Panama. Four of them are already known species, three of these (*Trichocylliba squamatin* (SELLNICK, 1926), *Oplitis pecki* HIRSCHMANN, 1991, *Brasiluropoda stammeri* HIRSCHMANN & ZIRNGIEBL-NICOL, 1969) are new to the fauna of Panama, and one of them (*Uropoda multipora* HIRSCHMANN & ZIRNGIEBL-NICOL, 1969) have already been recorded from this country. Five species (*Trachyuropoda newtoni* sp. nov., *Uropoda amplaformis* sp. nov., *Uroobovella panamensis* sp. nov., *Trichouropodella ujvarii* sp. nov., *Trichouropodella punctata* sp. nov.) are new to science. Original drawings of known and new species and description of new species are given. With 33 figures.

Key words: acarology, taxonomy, new records, new species, Uropodina, Panama.

INTRODUCTION

Uropodina mites are distributed in all regions of the world, most endemic and well-determined genera occur in soil, leaf litter, moss, anthills, nests of birds and mammals in the Neotropical region (WIŚNIEWSKI 1993). Several countries of the Neotropics are well investigated (e.g. Mexico, Brazil, Bolivia, Columbia, Ecuador and Peru), but most of the countries have only a few records of the Uropodina mites (WIŚNIEWSKI 1993).

Recently 21 Uropodina species have been listed from Panama (WIŚNIEWSKI 1993). ELZINGA & RETTENMEYER (1966, 1970, 1975), ELZINGA (1982) and HIRSCHMANN (1975) described several Uropodina species associated with army ants from Panama. HIRSCHMANN (1972, 1977) and HIRSCHMANN & ZIRNGIEBL-NICOL (1961, 1969, 1972 and 1979) presented several new species from soil samples from this country.

Present paper contributes to my new results to the knowledge of the Neotropical Uropodina mites, I listed herein nine species from Panama and five of them are new to sciences.

MATERIALS AND METHODS

Specimens collected were cleared in lactic acid and drawings were made with drawing tube. The specimens are stored in alcohol and deposited in the Soil Zoology Collections of the Hungarian Natural History Museum, Budapest. Abbreviation: st: sternal setae, h: hypostomal setae, V: ventral setae, I and i: central row of dorsal setae, ad: adanal setae. All measurements are given in micrometers (μm).

LIST OF THE FOUND SPECIES

***Trichocylliba squamatin* (SELLNICK, 1926)**

(Figs 1-2)

New record: Dam-514: Panama, Gerro campanu, 3200 ft., cloud forest, from leaf litter, 23-24.02.1976. leg. A. Newton.

Distribution: Brazil (WIŚNIEWSKI & HIRSCHMANN 1993).

Remark: This is the first record in Panama.

***Oplitis pecki* HIRSCHMANN, 1991**

(Fig. 3)

New record: Dam-503: Panama, Barro Colorado, from litter around rotting lays, 06.02.1976. leg. A. Newton.

Distribution: Galapagos Archipelago and Costa Rica (KONTSCHÁN 2008).

Remark: This is the first record in Panama.

***Uropoda multipora* HIRSCHMANN & ZIRNGIEBL-NICOL, 1969**

(Fig. 4)

New record: Dam-512: Panama, Canal Zone, Achiote RD., SW. Gratun, rain forest, from leaf litter, 19.06.1976. leg. A. Newton.

Distribution: Panama (WIŚNIEWSKI & HIRSCHMANN 1993).

***Brasiluropoda stammeri* HIRSCHMANN & ZIRNGIEBL-NICOL, 1969**

(Fig. 5)

New records: Dam-515: Panama, Barro Colorado, from litter under old fungus, 04.02.1976. leg. A. Newton. Dam-506. Panama, Barro Colorado, Canal Zone, 05.02.1976. leg. A. Newton.

Distribution: Unknown (WIŚNIEWSKI & HIRSCHMANN 1993).

Remark: This is the first record from Panama.

***Trachyuropoda newtoni* sp. nov.**

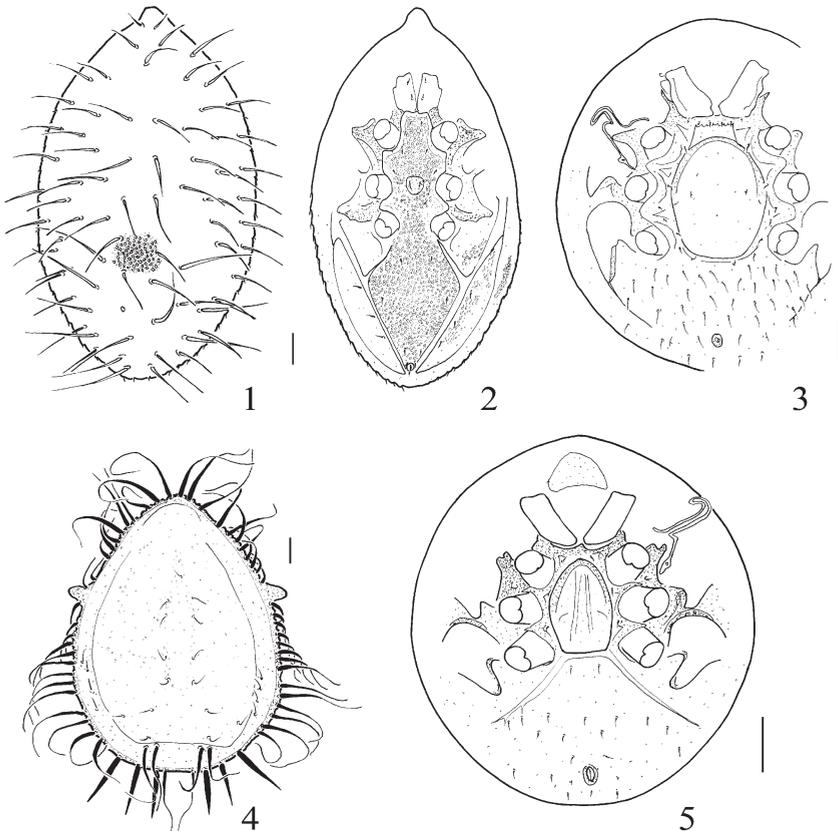
(Figs 6–12)

DIAGNOSIS

Dorsal- and ventral shields covered by alveolar ornamentation. One pair of L-shaped dorsal cavities with well sclerotized margins can be found on level of coxae IV. These margins bear phylliform setae. Peritreme M-shaped.

MATERIAL EXAMINED

Holotype: Female. Dam-512: Panama, Canal Zone, Achiote RD., SW. Gratun, rain forest, from leaf litter, 19.06.1976. leg. A. Newton. Paratype: one female. Locality and date same as holotype.



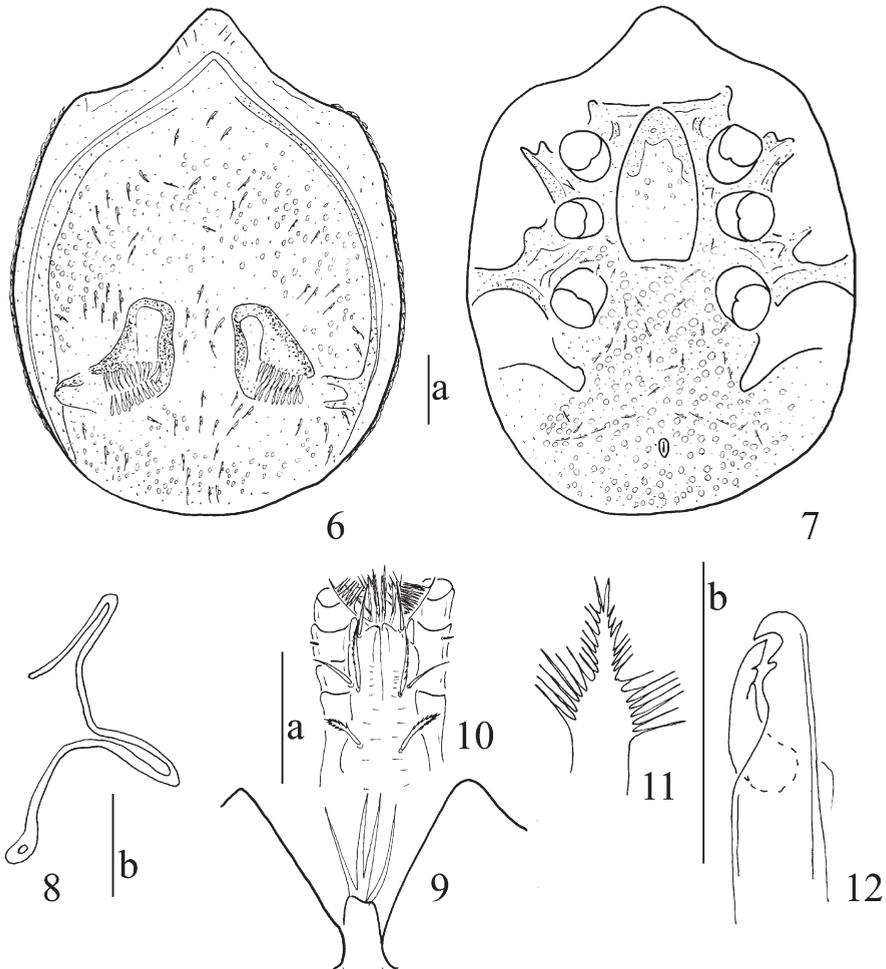
1-5. Known Uropodina species from Panama. 1 – dorsal view, 2 – ventral view of *Trichocylliba squamatin* (SELLNICK, 1926) (male), 3 – ventral view of *Oplitis pecki* HIRSCHMANN, 1991 (female), 4 – dorsal view of *Uropoda multipora* HIRSCHMANN & ZIRNGIEBL-NICOL, 1969 (female), 5 – ventral view of *Brasiluropoda stammeri* HIRSCHMANN & ZIRNGIEBL-NICOL, 1969 (female) (scale bar: 100 μ m)

DESCRIPTION

Female. Length of idiosoma 730-750 μm , width 530-540 μm ($n=2$). Shape oval, posterior margin rounded.

Dorsal idiosoma (Fig. 6). Marginal and dorsal shields completely separated. Dorsal shield hipertrichous, most of dorsal setae T-shaped. One pair of L-shaped cavities can be seen on dorsal shield on the level of coxae IV. These cavities with strongly sclerotized margins, which bearing phylliform setae. Sculptural pattern of dorsal shield alveolar. Marginal shield without ornamentation and with T-shaped setae.

Ventral idiosoma (Fig. 7). Sternal and ventral shields with alveolar ornamentation. Sternal setae not clearly visible, only T-shaped setae can be seen on the basal part of the sternal shield. Ventral shield hipertrichous, several T-shaped setae can be seen on it.



6-12. *Trachyuropoda newtoni* sp. nov. 6 – female, holotype dorsal view, 7 – ventral view, 8 – peritreme, 9 – tritostrenum, 10 – ventral view of gnathosoma, 11 – epistome, 12 – chelicera (scale bar: a: 100 μm , b: 50 μm)

Stigmata situated between coxae II and III. Peritreme M-shaped (Fig. 8).

Genital shield scutiform, with some alveolar sculptural pattern and without process on its apical margin.

Base of tritosternum narrow, tritosternal laciniae subdivided into four smooth branches (Fig. 9).

Gnathosoma (Fig. 10). Corniculi horn-like, internal malae subdivided into several branches which bearing several long hairs. Hypostomal setae are as follows: h1 smooth and situated near the anterior margins of gnathosoma, h2 smooth as long as h1, h3 1.5 times longer than h1 and h2, its margin serrated, h4 as long as h1 and h2 serrated on its apical part. Epistome pilosed (Fig. 11), chelicera as in Fig. 12.

Male, nymphs and larvae are unknown.

ETYMOLOGY

I dedicated the new species to A. NEWTON, who collected the soil samples in Panama.

NOTES

The new species belongs to the *Trachyuropoda arculata* species group, which consist of three Neotropical species (*Trachyuropoda arculata* HIRSCHMANN, 1975; *Trachyuropoda difoveolata* HIRSCHMANN, 1975 and *Trachyuropoda similiarculata* HIRSCHMANN, 1975). Their common characters are the two dorsal cavities on the level of coxae IV, with well sclerotized margins and several phylliform setae. The idiosoma of the new species is wider than the other three, alveolar sculptural pattern can be seen on the caudal part of the dorsal shield, which is missing in the other three species.

***Uropoda amplaformis* sp. nov.**

(Figs 13–18)

DIAGNOSIS

Dorsal- and ventral shields covered by a web-like ornamentation. Most of dorsal setae smooth and needle-like, only i1 and I4 bear pilose margins. Four pairs of setae placed on small platelets on the membranous cuticle in the caudal region. Genital shield of female scutiform bearing long, spine-like anterior process.

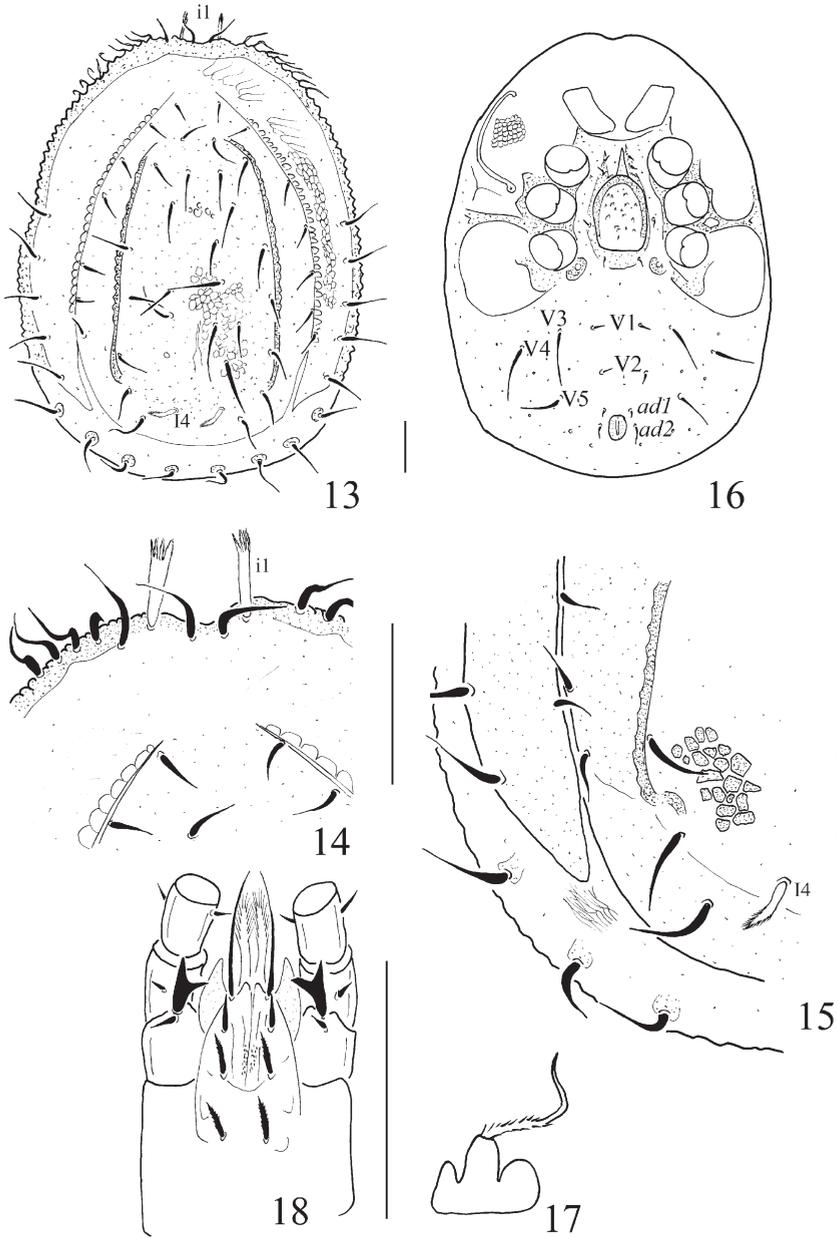
MATERIAL EXAMINED

Holotype: Female. Dam-510: Panama, Chirigui, 12 km, El hattó del volcan, 4500, litter from cloud forest, 27.06.1976. leg. A. Newton. Paratypes: five females. Locality and date same as holotype.

DESCRIPTION

Female. Length of idiosoma 950-1050 μm , width 750-820 μm (n= 6). Shape oval, posterior margin rounded.

Dorsal idiosoma (Fig. 13). Marginal and dorsal shields fused anteriorly. Dorsal shield with two long and undulate, well sclerotized lines. Dorsal shield hypotrichous,



13-18. *Uropoda amplaformis* sp. nov. 13 – female, holotype, dorsal view, 14 – apical part of dorsal idiosoma, 15 – caudal part of dorsal idiosoma, 16 – ventral view, 17 – tritosternum, 18 – ventral view of gnathosoma (scale bar: 100 μ m)

most of dorsal setae long, smooth and needle-like. Setae i1 and I4 apically pilose, others smooth (Figs. 14-15). Marginal shield reduced and its posterior margins reaching to i4 setae. Scalloping can be found between marginal and dorsal shields. Marginal setae as long as dorsal setae, four pair's of setae can be found on caudal part of dorsal idiosoma situating on small platelets of membranous cuticle.

Ventral idiosoma (Fig. 16). Sternal and ventral shields without sculptural pattern. Sternal setae short, smooth and needle-like, st1 and st2 placed near to anterior margin of genital shield, st3 not clearly visible, st4 can be seen between the margins of coxae III and IV. Ventral setae are the follows: V1 and V2 short, smooth and needle-like, V3, V4 and V5 smooth, needle-like and four times longer than V1 and V2. Two pairs of adanal setae smooth, needle-like and as long as V1 and V2.

Stigmata situated between coxae II and III. Peritreme L-shaped.

Genital shield scutiform, with some spine-like pattern and a long spine-like anterior process.

Base of tritosternum wide, lacinia subdivided into three parts, central part bearing tritosternal laciniae, which long and basally pilose (Fig. 17).

Gnathosoma (Fig. 18). Corniculi horn-like, internal malae long, apically part pilose. Hypostomal setae are as follows: h1, long, smooth and placed near the anterior margin of gnathosoma, h2 smooth and five times shorter than h1, h3 and h4 as long as h2, but their margin serrated. Epistome and chelicerae not clearly visible. Palp trochanter with one simple and one Y-shaped strong setae, other setae on it simple.

Male, nymphs and larvae are unknown.

ETYMOLOGY

The name of the new species refers to close similarity to the related species, *U. ampla* HIRAMATSU & HIRSCHMANN, 1979.

NOTES

The new species is similar to the *U. ampla* HIRAMATSU & HIRSCHMANN, 1979, but all dorsal setae pilose in the known species and smooth (without i1 and I4) in the new species.

***Uroobovella panamensis* sp. nov.**

(Figs 19–26)

DIAGNOSIS

Dorsal- and ventral shields without sculptural pattern. Most of dorsal setae short, smooth and needle-like. One pair of adanal setae two times longer than other one. Genital shield of female scutiform without process and without ornamentation. Peritreme hook-shaped.

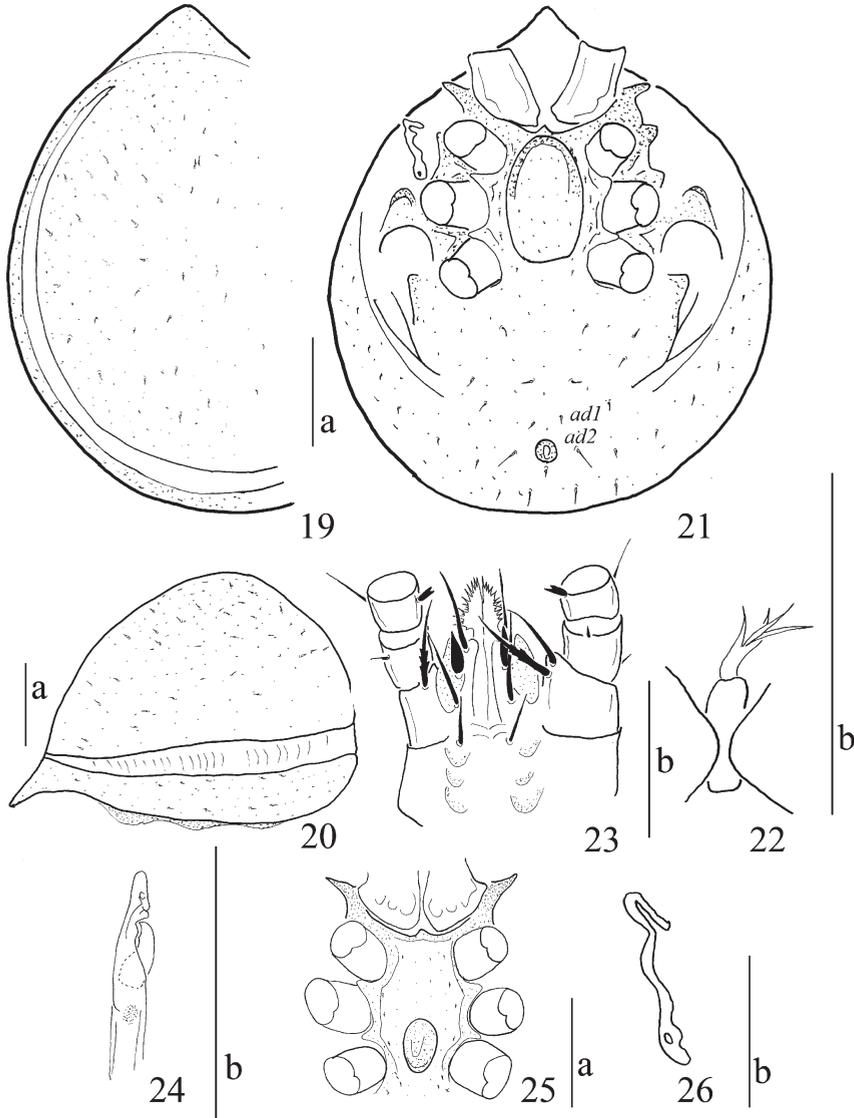
MATERIAL EXAMINED

Holotype: Female. Dam-507: Panama, Rio Frijoles, Canal Zone, Gambou, 19.02.1976. leg. A. Newton. Paratypes: two females and one male. Locality and date same as holotype.

DESCRIPTION

Female. Length of idiosoma 460-470 μm , width 390-410 μm (n= 3). Shape oval, posterior margin rounded.

Dorsal idiosoma (Fig. 19). Marginal and dorsal shields fused anteriorly. Dorsal shield covered by several short, smooth and needle-like setae and without ornamentation.



19-26: *Uroobovella panamensis* sp. nov. 19 – female, holotype, dorsal view, 20 – lateral view, 21 – ventral view, 22 – tritosternum, 23 – ventral view of gnathosoma, 24 – chelicera, 25 – male, paratype, intercoxal region, 26 – peritreme (scale bar: a: 100 μm , b: 50 μm)

Membranous cuticle can be found between dorsal and marginal shields. Marginal shield without sculptural pattern and with short, smooth and needle-like setae (Fig. 20).

Ventral idiosoma (Fig. 21). Sternal and ventral shields without sculptural pattern. Sternal setae short, smooth and needle-like, ventral setae smooth, needle-like and two times longer than sternal setae. Setae ad2 two times longer than setae ad1.

Stigmata situated between coxae II and III. Peritreme hook-shaped.

Genital shield linguliform, without ornamentation and anterior process.

Base of tritosternum narrow, tritosternal laciniae subdivided into four parts, their margins smooth (Fig. 22).

Gnathosoma (Fig. 23). Corniculi horn-like, internal malae long, wide and their margin serrated. Hypostomal setae are the follows: h1, narrow, long, smooth and placed near the anterior margins of gnathosoma, h2, wide, smooth and two times shorter than h1, h3 similar to h1 in length and shape, h4 narrow, smooth, needle-like and 1.5 times shorter than h1. Epistome not clearly visible. Chelicera as in Figs 24.

Male. Length of idiosoma 480 μm , width 440 μm (n=1). Shape oval, posterior margin rounded.

Dorsal idiosoma. Ornamentation and chaetotaxy of dorsal shield as in female.

Ventral idiosoma (Fig. 25). Sternal and ventral shields without ornamentation. Sternal setae short and needle-like. Genital shield oval, and placed between coxae III and IV.

Gnathosoma. Similar to female.

Nymphs and larvae are unknown.

ETYMOLOGY

The name of the new species refers to the country of origin.

NOTES

The new species belongs to the *Uroobovella minima*- species group. Presently we know five soil dwelling species from this group from South- and Central America

Table 1. The characteristic differences between the six *Uroobovella* species

Species	<i>panamaensis</i>	<i>mexicana</i>	<i>nova-teutoniae</i>	<i>vulgaris</i>	<i>portalis</i>	<i>portalisimilis</i>
Setae h2	smooth	serrated	serrated	smooth	serrated	serrated
Shape of peritreme	hook-form	hook-form	Y-shaped	hook-form	M-shaped	R-shaped
Shape of genital shield of female	linguliform	linguliform	linguliform	linguliform	scutiform	scutiform
Ornamentation on dorsal shield	absent	absent	absent	present	absent	absent
Ornamentation on ventral shield	absent	absent	absent	present	absent	absent

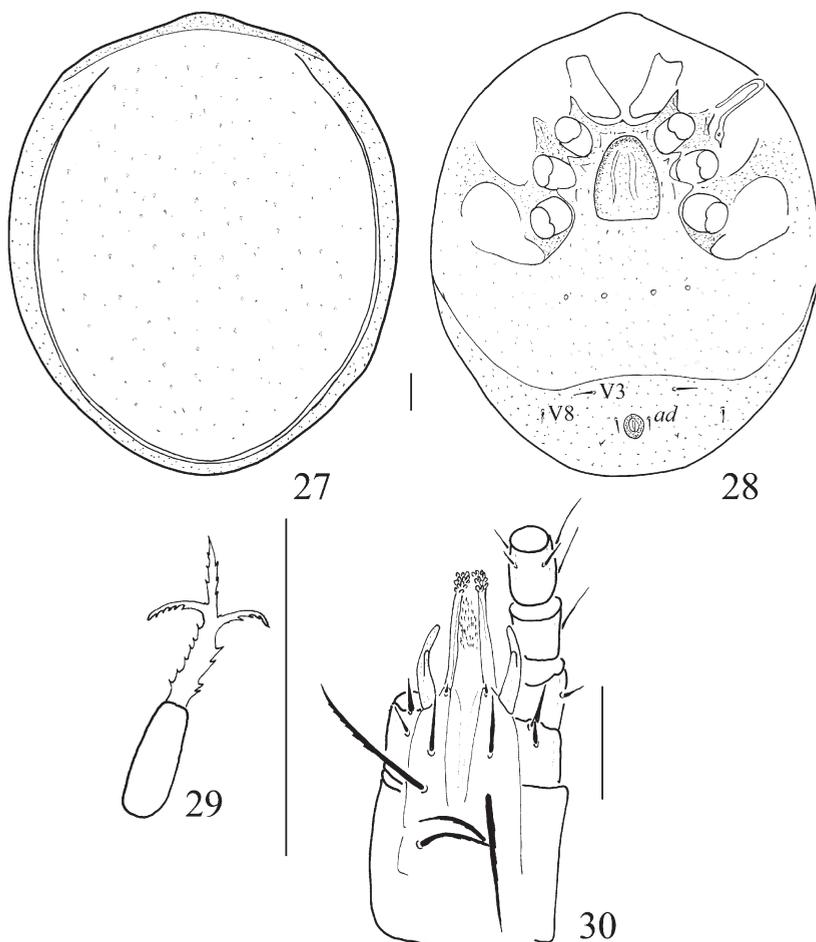
(*U. mexicana* HIRSCHMANN, 1979; *U. nova-teutoniae* HIRSCHMANN, 1981; *U. vulgaris* HIRSCHMANN & ZIRNGIEBL-NICOL, 1972; *U. portalis* HIRSCHMANN, 1973; *U. portalisimilis* HIRSCHMANN, 1981). The most important differences between the six species are shown in Table 1.

***Trichouropodella ujvarii* sp. nov.**

(Figs 27–30)

DIAGNOSIS

Dorsal- and ventral shields without sculptural pattern. Most of dorsal setae very short, smooth and needle-like. All of sternal and ventral setae similar to the dorsal setae,



27–30. *Trichouropodella ujvarii* sp. nov. 27 – female, holotype, dorsal view, 28 – ventral view, 29 – tritosternum, 30 – ventral view of gnathosoma (scale bar: 100 μ m)

three pairs of ventral setae on the posterior region of preanal line five times longer than other ventral setae. Peritreme hook-shaped.

MATERIAL EXAMINED.

Holotype: Female. Dam-510: Panama, Chirigui, 12 km El hattó del volcan, 4500 m, litter from cloud forest, 27.06.1976. leg. A. Newton. Paratype: one female. Locality and date same as holotype.

DESCRIPTION

Female. Length of idiosoma 1100-1200 μm , width 950-960 μm (n=2). Shape oval, posterior margin rounded.

Dorsal idiosoma (Fig. 27). Marginal and dorsal shields fused anteriorly. Dorsal shield covered by several very short, smooth and needle-like setae and not bearing ornamentation. Marginal shield without sculptural pattern and with very short, smooth and needle-like setae. Four pairs of caudal setae not clearly visible.

Ventral idiosoma (Fig. 28). Sternal and ventral shields without sculptural pattern. Sternal and ventral setae very short, smooth and needle-like. Setae on posterior region of preanal line five times longer than other ventral setae, only three pairs of long, smooth and needle-like setae can be found in this region. One pair of lyriform fissures placed near anal platelets.

Stigmata situated between coxae II and III. Peritreme hook-shaped.

Genital shield scutiform, without ornamentation and anterior process.

Base of tritosternum narrow, tritosternal laciniae subdivided into three branches, their margins serrated (Fig. 22).

Gnathosoma (Fig. 30). Corniculi horn-like with a small lateral tooth, internal malae long, basal part with smooth margins, apical part bearing several finger-shaped processes. Hypostomal setae are the follows: h1, very short, smooth and placed near the anterior margin of gnathosoma, h2 smooth, needle-like and six times longer than h1, h3 and h4 with serrated margins, h3 two times longer than h2, h4 as long as h2. Epistome and chelicerae not clearly visible.

Male, nymphs and larvae are unknown.

ETYMOLOGY

I dedicate the new species to my colleague and friend Mr. ZSOLT UJVÁRI, acarologist, Zerconid specialist.

NOTES

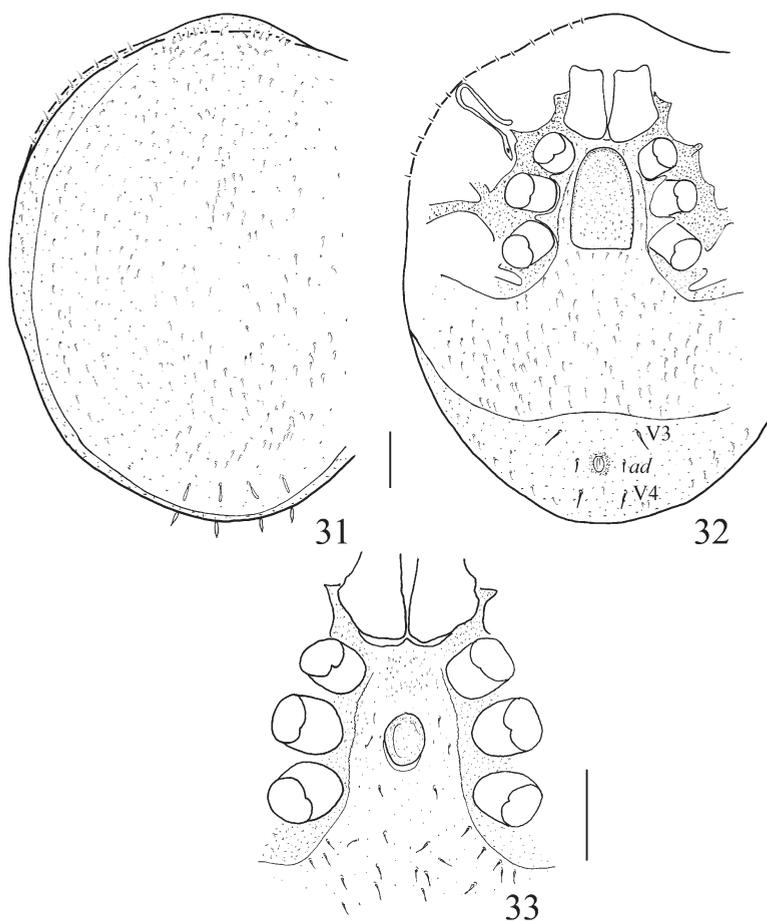
The only one known species has very short ventral and dorsal setae (*Trichouropodella minimasetae* HIRSCHMANN & ZIRNGIEBL-NICOL, 1972), but setae of this species on the posterior region of preanal line are also very short (as long as ventral setae), contrary to the new species, which has setae of this region five times longer.

***Trichouropodella punctata* sp. nov.**

(Figs 31–33)

DIAGNOSIS

Dorsal- and ventral shields without sculptural pattern. Most of dorsal setae very short, smooth and needle-like. Genital shield of female and the anterior region of sternal shield in male covered by small alveolar ornamentation. All of sternal and ventral setae similar to the dorsal setae, three pairs of ventral setae on the posterior region of preanal line five times longer than other ventral setae. Peritreme hook-shaped.



31–33. *Trichouropodella punctata* sp. nov. 31 – female, holotype, dorsal view, 32 – ventral view, 33 – male, paratype, intercoxal region (scale bar: 100 μ m)

MATERIAL EXAMINED

Holotype: Female. Dam-515: Panama, Barro Colorado, from litter under old fungus, 04.02.1976. leg. A. Newton. Paratypes: two males. Locality and date same as holotype.

DESCRIPTION

Female. Length of idiosoma 870 μm , width 710 μm (n= 1). Shape oval, posterior margin rounded.

Dorsal idiosoma (Fig. 31). Marginal and dorsal shields fused anteriorly. Dorsal shield covered by several very short, smooth and needle-like setae and not bearing ornamentation. Marginal shield without sculptural pattern and with very short, smooth and needle-like setae. Four pairs of smooth caudal setae present.

Ventral idiosoma (Fig. 32). Sternal and ventral shields without sculptural pattern. Sternal and ventral setae very short, smooth and needle-like. Setae on posterior region of preanal line five times longer than other ventral setae, only three pairs of long, smooth and needle-like setae can be found in this region.

Stigmata situated between coxae II and III. Peritreme hook-shaped.

Genital shield linguliform, with small alveolar ornamentation and without anterior process.

Tritosternum not clearly visible (covered by coxae I.).

Gnathosoma. Not clearly visible (covered by coxae I.).

Male. Length of idiosoma 780-810 μm , width 640-680 μm (n=2). Shape oval, posterior margin rounded.

Dorsal idiosoma. Ornamentation and chaetotaxy of dorsal shield as in female.

Ventral idiosoma (Fig. 33). Anterior region of sternal shield with small alveolar ornamentation. Ventral shields without ornamentation. Sternal and ventral setae very short and needle-like. Genital shield oval, and placed between coxae III.

Gnathosoma. Whole gnathosoma not clearly visible. Visible part is as follows: Corniculi horn-like with a small lateral tooth, internal malae long, basal part with smooth margins, their apical part bearing several finger-shaped processes. Hypostomal setae are the follows: h1 not clearly visible, h2, smooth, needle-like, h3 and h4 with serrated margins, h3 two times longer than h2, h4 as long as h2. Epistome and chelicerae not clearly visible.

Nymphs and larvae are unknown.

ETYMOLOGY

The name of the new species refers to the fine alveolar ornamentation (punctate) on the genital shield of female and on the sternal shield of male.

NOTES

The only one known species (*Trichouropodella minimasetae* HIRSCHMANN & ZIRNGI-EBL-NICOL, 1972) and the previous new species (*Trichouropodella ujvarii* n. sp.) have very short ventral and dorsal setae, but these two species do not bear ornamentation on genital shield of female and sternal shield of male.

REFERENCES

- ELZINGA, R. J., 1982. The genus *Antennequesoma* (Acari: Uropodina) and description of four new species. *Acarologia*, **23**(4): 319–325.
- ELZINGA, R. J., RETTENMEYER, C., 1966. A neotype and new species of *Planodiscus* (Acarina: Uropodina) found on doryline ants. *Acarologia*, **8**(2): 191–199.
- , 1970. Five new species of *Planodiscus* (Acarina: Uropodina) found on doryline ants. *Acarologia*, **12**(1): 59–70.
- , 1975. Seven new species *Circocylliba* (Acarina: Uropodina) found on army ants. *Acarologia*, **16**(4): 595–611.
- HIRSCHMANN, W., 1972. Gangsystematik der Parasitiformes Teil 108. Teilgänge, Stadien von 8 neuen *Trichouropoda*-Arten. (Trichouropodini, Uropodinae). *Acarol. Schrift. Vergl. Milbenkunde*, **18**: 11–15.
- , 1975. Gangsystematik der Parasitiformes Teil 198. Stadien von 4 neuen Uropodiden-Arten aus „Manual of Acarology“ von G.W. KRANTZ. *Acarol. Schrift. Vergl. Milbenkunde*, **21**: 17–18.
- , 1977. Gangsystematik der Parasitiformes Teil 251. Teilgang und Stadium von 2 neuen *Brasiluropoda*-Arten aus Brasilien und Panama. *Acarol. Schrift. Vergl. Milbenkunde*, **23**: 53–54.
- HIRSCHMANN, W., ZIRNGIEBL-NICOL, I., 1961. Gangsystematik der Parasitiformes Teil 4. Die Gattung *Trichouropoda* BERLESE 1916 nov. comb., die Cheliceren und das System der Uropodiden. *Acarol. Schrift. Vergl. Milbenkunde*, **4**: 1–41.
- , 1969. Gangsystematik der Parasitiformes Teil 9. Bestimmungstabellen von 300 Uropodiden-Arten (Larven, Protonymphen, Deutonymphen, Weibchen, Männchen). *Acarol. Schrift. Vergl. Milbenkunde*, **8**: 2–31.
- , 1972. Gangsystematik der Parasitiformes Teil 111. Adulte Tiere von 5 neuen *Trichouropodella*-Arten (Trichouropodini, Uropodinae). *Acarol. Schrift. Vergl. Milbenkunde*, **18**: 18–20.
- , 1979. Gangsystematik der Parasitiformes Teil 307. Teilgänge, Stadien von 10 neuen Uropoda (*Phaulodinychus*)-Arten aus Kalifornien, Ekuador, Peru, Mexico und Panama (Uropodini, Uropodinae). *Acarologie. Acarol. Schrift. Vergl. Milbenkunde*, **25**: 16–29.
- KONTSCHÁN, J., 2008. Uropodina mites (Acari) collected in Costa Rica, I. *Opusc. Zool. Budapest*, **40**(1): 23–33.
- WIŚNIEWSKI, J., 1993. Gangsystematik der Parasitiformes Teil 549. Die Uropodiden der Erde nach Zoogeographischen Regionen und Subregionen geordnet (Mit Angabe der Lande). *Acarol. Schrift. Vergl. Milbenkunde*, **40**: 221–291.
- WIŚNIEWSKI, J., HIRSCHMANN, W., 1993. Gangsystematik der Parasitiformes Teil 548. Katalog der Ganggattungen, Untergattungen, Gruppen und Arten der Uropodiden der Erde. *Acarol. Schrift. Vergl. Milbenkunde*, **40**: 1–220.