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Uropodina mites of East-Africa (Acari: Mesostigmata) I.

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Abstract. Five new Uropodina species (*Afrotrachytes longicaudatus* sp. n., *Polyaspis africanus* sp. n., *Trigonuropoda gerei* sp. n., *Trigonuropoda takacsi* sp. n., *Macrodinycus alveolaris* sp. n.) are described from East-Africa (Tanzania and Kenya). They belong to four genera *(Afrotrachystes* KONTSCHÁN, 2006, *Polyaspis* BERLESE, 1881, *Trigonuropoda* TRÄGARDH, 1952 and *Macrodinychus* BERLESE, 1917), short description of genera are given. With 33 figures.

The Uropodina fauna of East-Africa are poorly-investigated. However Tanzania from this point of view is must better known than the other African countries. Up till now 38 species have been recorded in Tanzania, (WISNIEWSKI 1993) belonging to seven genera. Two of the genera show tropical distribution (*Rotundabaloghia* HIRSCHMANN, 1975 and *Trigonuropoda* TRÄGARDH, 1952), and the other five are distributed across the tropical countries and the Holarctic.

The Uropodina mites of the other investigated East-African countries (for example Kenya) are absolutely unknown, up till now there are not any record published (Wisniewski 1993).

The Pedozoological Collection of the Hungarian Natural History Museum contains a lot of soil samples from different part of East-Africa; all the materials presented are from this collection.

In the present paper five new species are described from following genera: *Afrotrachytes* KONTSCHÁN, 2006, *Polyaspis* BERLESE, 1881, *Trigonuropoda* TRÄGARDH, 1952 and *Macrodinychus* BERLESE, 1917. The species of these genera occur throughout in the tropical countries, but there are only a few data from the Afro-tropical region (Fig. 1).

The specimens identified are preserved in alcohol and deposited in the Pedozoological Collections of the Hungarian Natural History Museum. The system and the names of the species are according to WISNIEWSKI (1993).

genus *Afrotrachytes* KONTSCHÁN, 2006

Diagnosis. Idiosoma: Shape oval, posterior margin rounded. First and second legs with characteristic processes. Dorsal shield with trapezoid postdorsal shield. Caudal region bear some very long setiform setae.

Gnathosoma: h1, long and setiform, h2with some branches, h3 long and setiform, h4 short and distally serrated.

Type species. Afrotrachytes seticaudatus KONTSCHÁN, 2006.

Type locality. Angola.

Afrotrachytes longicaudatus sp.n.

(Figs. 2-9)

Material examined. Holotype: female, Tanzania, Matombo Morogoro region, 45 km South from Morongoro, from litter and soil, 04. 02. 1987, leg. S. MAHUNKA, T. PÓCS & A. ZICSI. Paratypes: two female, Tanzania, Matombo Morogoro region, 45 km South from Morongoro, from litter and soil, 04. 02. 1987, leg. S. MAHUNKA, T. PÓCS & A. ZICSI.

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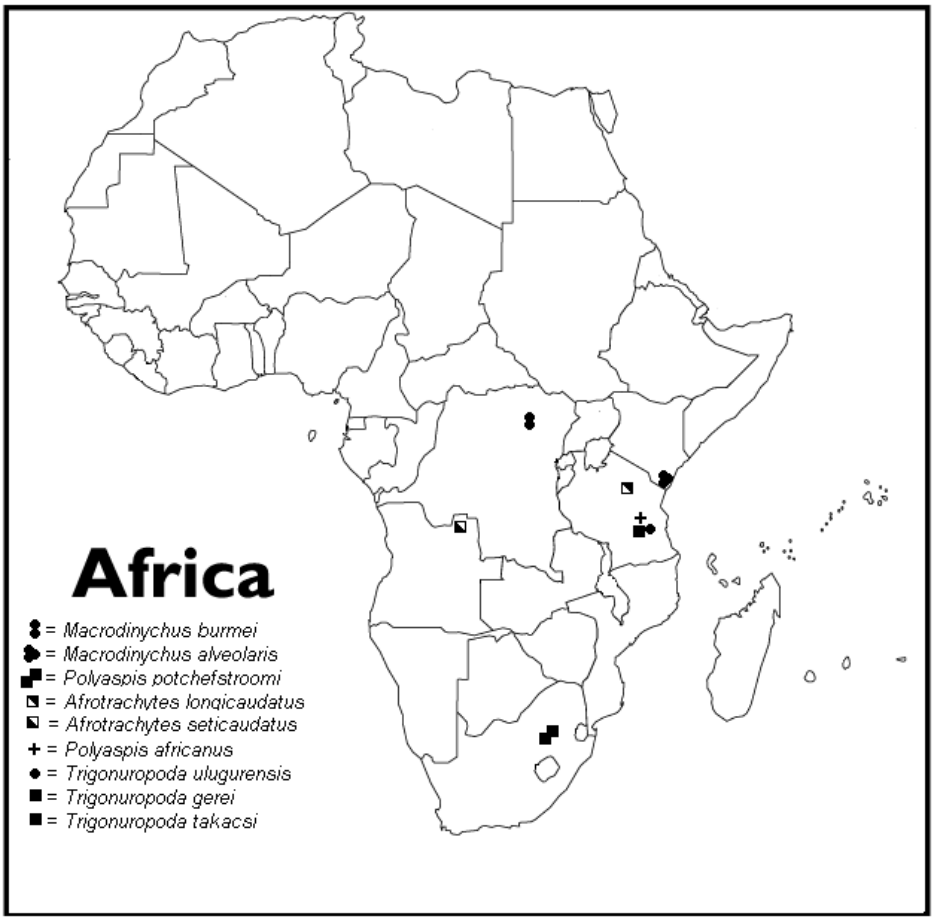


Figure 1. Occurrence of *Afrotrachystes*, *Polyaspis, Trigonuropoda* and *Macrodinychus* species in Africa

Diagnosis. Dorsal, postdorsal, ventral and marginal shield with alveolar ornamentation. Caudal region with three pairs long, spiniform setae. Marginal setae serrated. Genital shield of females with characteristic ornamentation.

Description. Female. Length of idiosoma 700-710 µm, width (in middle of idiosoma) 470-480 µm. Shape oval, posterior margin rounded.

Male, deuteronymph, protonymph and larva unknown.

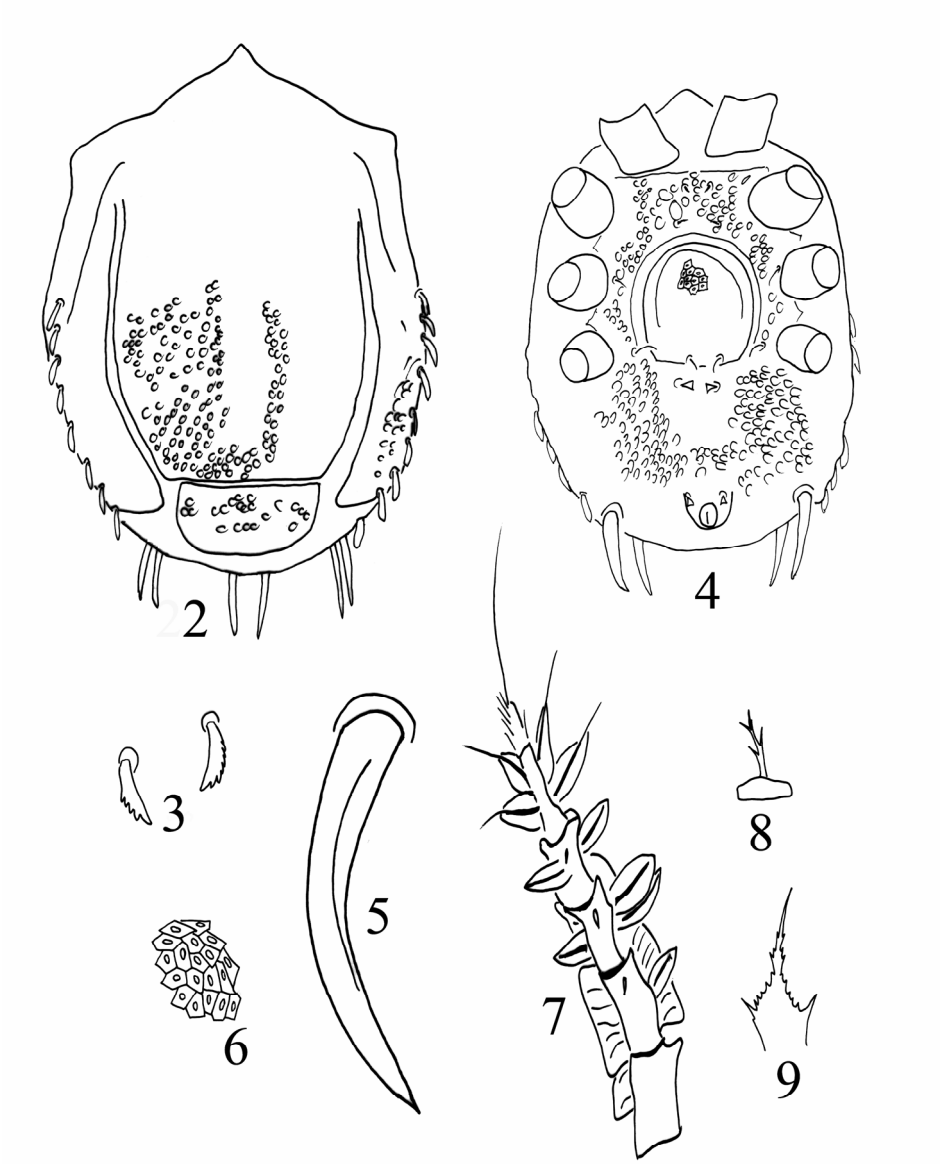
Dorsal side (Fig. 2). Dorsal setae not clearly visible. Dorsal shield with alveolar ornamentation. Postdorsal shield with alveolar ornamentation, setae lacking. Marginal shield with alveolar ornamentation and serrated setae (Fig. 3). Interscutellar membrane between present dorsal and marginal shield and in the caudal region.

Ventral side (Fig. 4). Steranal shield with alveolar ornamentation. Three (St3, St4, St5) of the sternal setae short, smooth and filiform, but St1 stronger and shorter than St3, St4 and St5. St2 triangular. Ventral shield with alveolar ornamentation. Ventral and ventroanal setae are not clearly visible. Visible setae are triangular inform. Caudal part of ventral shield with three pairs long, strong, smooth and setiform setae (Fig. 5).

Genital shield large, rounded and with characteristic ornamentation and without process (Fig. 6). Genital shield between coxae 2 and 4.

First legs with characteristic processes and phylliform setae (Fig. 7).

Gnathosoma. Corniculae short, horn-like, laciniae short. Ventral side of gnathosoma with 4 pairs of hypostomal setae: h1 long, smooth and



Figures 2-9. *Afrotrachystes longicaudatus* sp.n. 2: dorsal aspect; 3: serrated marginal setae; 4: ventral aspect; 5: caudal seta; 6: ornamentation of genital shield of female; 7: first leg; 8: tritosternum; 9: epistoma

setiform, h2 short with four branches, h3 not clearly visible, h4 shorter, distally serrated. Base of tritosternum wide, laciniae with four branches (Fig. 8). Base of epistoma wider with serrated lateral margins and apical part (Fig. 9). Chelicera not clearly visible.

Etymology. This species is named after its long caudal setae.

Remarks. The new species is similar to the species *Afrotrachytes seticaudatus* Kontschán, 2006. The most important differences are the followings: the postdorsal shield of the known species is narrower than the new species, the known species has reticulate ornamentation on dorsal and sternal shield, but the dorsal, ventral and sternal shield of the new species bear alveolate pattern.

genus *Polyaspis* BERLESE, 1881

The species of this genus occur in the Holarctis and New Guinea. One species (*Polyaspis potchefstroomi* RYKE, 1956) was found in South Africa (RYKE 1956).

The main characteristics of the genus are the followings: *Idiosoma.* Shape oval, posterior margin rounded. First and second legs with characteristic processes. Dorsal and ventral side with large interscutellar region. Dorsal shield with postdorsal shield.

Gnathosoma. h1, h2 setiform, h3 longer and setiform distally serrated, h4 short and distally serrated, laciniae and corniculi long.

Polyaspis africanus sp.n.

(Figs. 10-13)

Material examined. Holotype: female, Tanzania, Mbulu Highland, Evergreen Mountain forest, 1900 m a.s.l., 01. 05. 1990, leg. T. PÓCS.

Diagnosis. Dorsal, postdorsal, ventral and marginal shield without ornamentation. Marginal, dorsal and ventral setae spatuliform. Genital shield of female large. Postdorsal shield trapezoid-shape.

Description. Female. Length of idiosoma 620 µm, width (in middle of idiosoma) 410 µm. Shape oval, posterior margin rounded.

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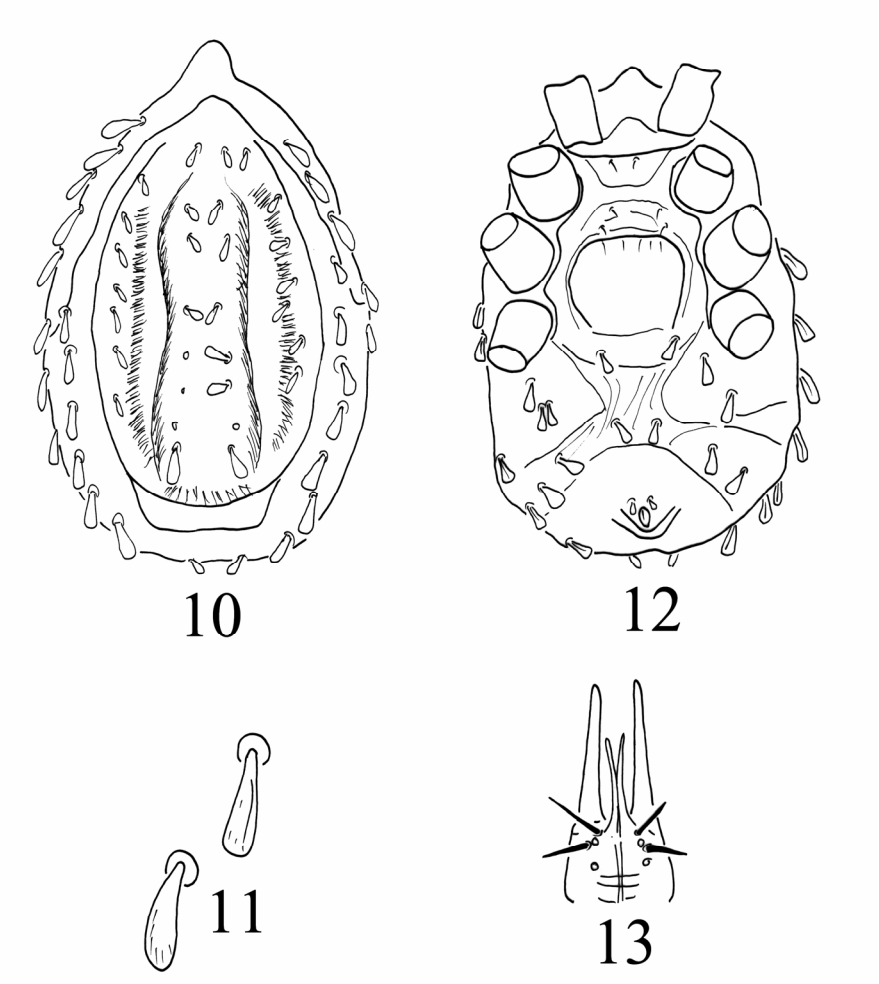


Figures 10-13. *Polyaspis (Polyaspis) africanus* sp.n. 10: dorsal aspect; 11: spatuliform setae; 12: ventral aspect; 13: gnathosoma

Male, deuteronymph, protonymph and larva unknown.

Dorsal side (Fig. 10). Dorsal shield without ornamentation. Central region of dorsal shield with eight, lateral part with seven pairs of spatuliform setae (Fig. 11). Postdorsal shield trapezoid, ornamentation and setae lacking. Marginal shield short with spatuliform setae. Interscutellar membrane between marginal and dorsal shields and on caudal region. Several spatuliform setae on interscutellar membrane.

Ventral side (Fig. 12). Sternal shield poorly sclerotised. Sternal setae not clearly visible, the visible setae (St1 and St3) short, smooth and filiform. Ventral shield subdivided to metapodal and anal shields. Interscutellar membrane present between metapodal, sternal and anal shields. All setae of metapodal and anal shield and on interscutellar membrane are spatuliform.

Genital shield between coxae 3 and 4. It is large, rounded and without ornamentation.

Gnathosoma (Fig. 13). Corniculae very long, laciniae long and smooth. Hypostomal setae are the follows: h1 and h3 long, smooth and setiform, h2 and h4 not clearly visible. Tritosternum, epistoma and chelicera not clearly visible.

Etymology. This species is named after its locality.

Remarks. The new species is similar to *Polyaspis potchefstroomi* Ryke, 1956. The most important difference between the two species are the following: adanal setae of the known species are setiform, but these setae are spatuliform in the new species.

genus *Trigonuropoda* TRÄGARDH, 1952

The species of this genus occur in South and Central-America, Indo-Malay Region and New Guinea. Only one species (*Trigonuropoda ulugurensis* HIRAMATSU, 1981) was known from Africa (HIRAMATSU 1981).

The main characteristics of the genus are the followings:

Idiosoma. Shape oval, posterior margin rounded. Dorsal and ventral side with phylliform setae. Ornamentation of genital shield coriaceus or reticulate.

Gnathosoma. h1 long, setiform, calyciform or biretiform, h2 short setiform, h3 long and setiform, h4 short and distally serrated. Laciniae long, corniculi horn-like.

Trigonuropoda gerei **sp.n.**

(Figs. 14-20)

Material examined. Holotype: female, Tanzania, Mikumi National Park, E boundary of the park, Morogoro region, 01. 02. 1987, leg. S. MAHUNKA, T. PÓCS & A. ZICSI. Paratype: female, Tanzania, Mikumi National Park, E boundary of the park, Morogoro region, 01. 02. 1987, leg. S. MAHUNKA, T. PÓCS & A. ZICSI.

Diagnosis. All dorsal, ventral and marginal setae phylliform. Ventroanal setae longer than other ventral and dorsal setae. Dorsal, marginal and ventral shield without ornamentation. The genital shield of females reticulated.

Description. Female. Length of idiosoma 530-540 µm, width (in middle of idiosoma) 330-340 µm. Shape oval, posterior margin rounded.

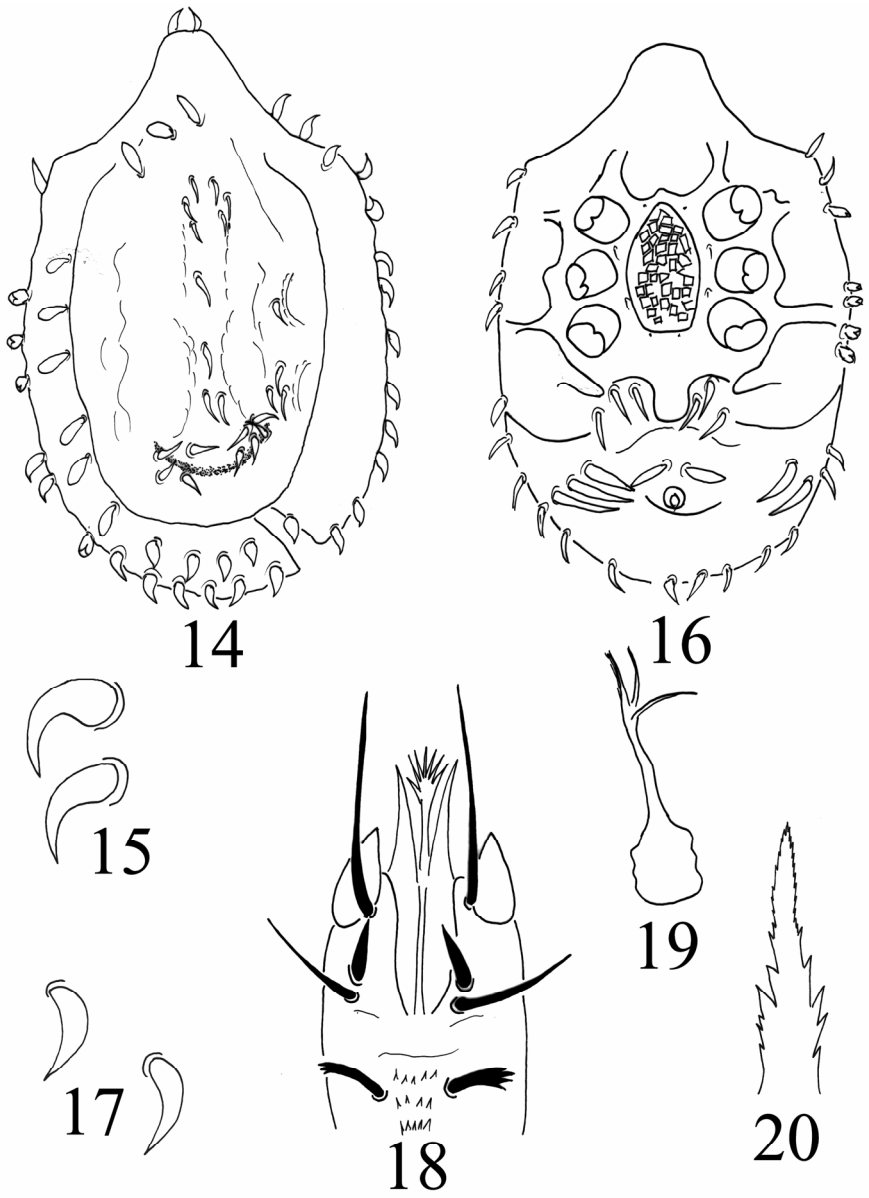
Male, deuteronymph, protonymph and larva unknown.

Dorsal side (Fig. 14). Dorsal shield without ornamentation, central part of dorsal shield with several thinner (Fig. 15) caudal part with thicker phylliform setae. Postdorsal shield lacking. Marginal shield not ornamented and with very thick phylliform setae.

Ventral side (Fig. 16). Sternal shield smooth. Sternal setae not clearly visible, some setae (St3, St4) short, smooth and filiform. Ventral shield without ornamentation. Three pairs of ventral setae thin and phylliform, ventroanal setae phylliform, longer and thicker than the ventral setae. All marginal setae phylliform (Fig. 17)

Genital shield narrow, tongue-like and with reticulate ornamentation. Genital shield between coxae 2 and 4.

Gnathosoma (Fig. 18). Corniculae short, horn-like, laciniae long and smooth. Ventral side of gnathosoma with 4 pairs of coxal setae. h1 long,



Figures 14-20. *Trigonuropoda gerei* sp.n. 14: dorsal aspect; 15: dorsal setae; 16: ventral aspect; 17: marginal setae; 18: gnathosoma; 19: tritosternum; 20 epistoma

smooth and setiform, h2 shorter and setiform, h3 long, smooth and setiform, h4 shorter, distally serrated. Base of tritosternum narrow, laciniae with four branches (Fig. 19). Base of epistoma wider and lateral margins serrated (Fig. 20). Chelicera not clearly visible.

Etymology. This species is named after PROF. DR. GÉZA GERE, with whom I traveled to Africa.

Remarks. The shape of the idiosoma and the types of the dorsal and marginal setae are not similar to the other known Afrotropical species.

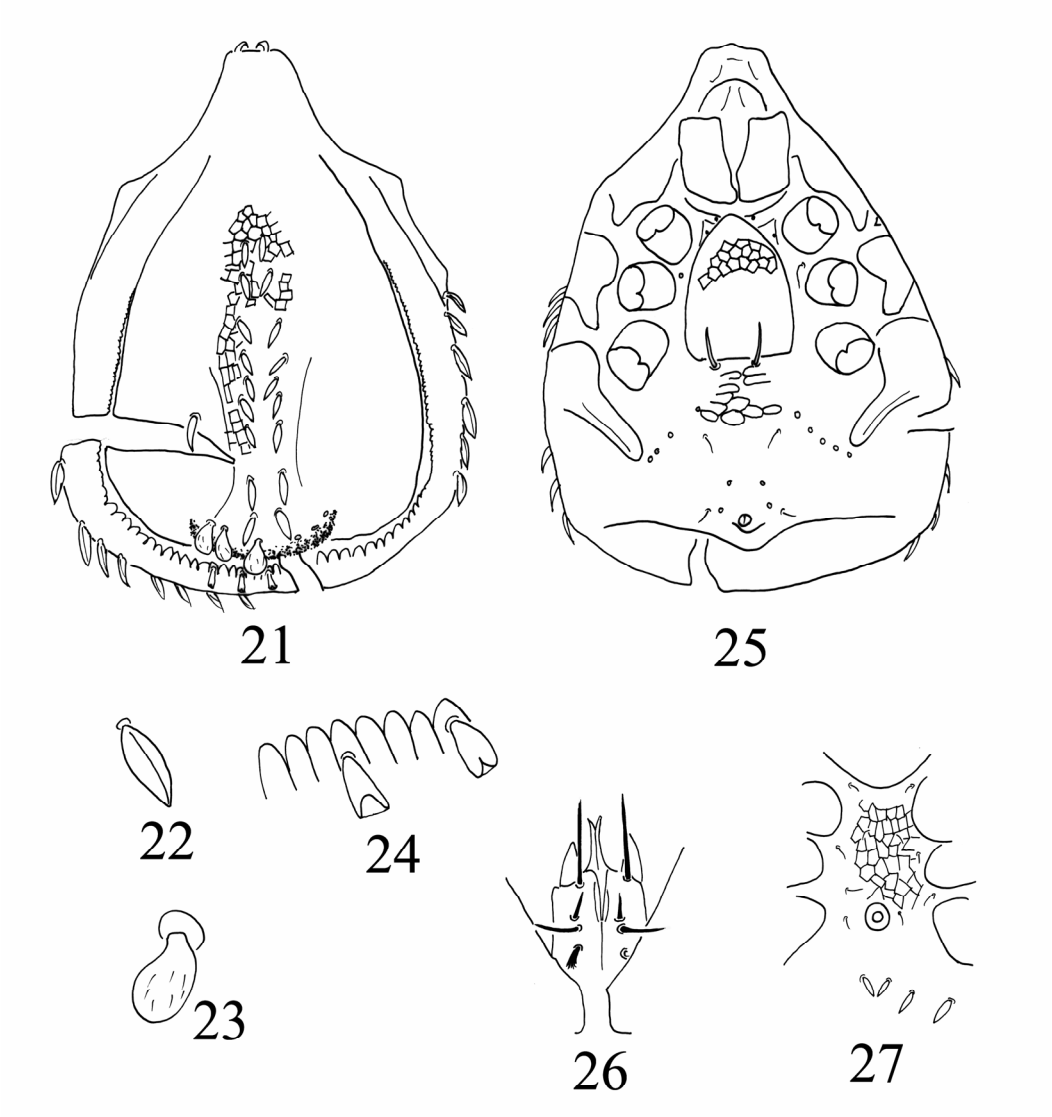
***Trigonuropoda takacsi* sp.n.**
(Figs. 21-27)

Material examined. Holotype: female, Tanzania, Mikumi National Park, E boundary of the park, Morogoro region, 01. 02. 1987, leg. S. MAHUNKA, T. PÓCS & A. ZICSI. Paratype: male Tanzania, Mikumi National Park, E boundary of the park, Morogoro region, 01. 02. 1987, leg. S. MAHUNKA, T. PÓCS & A. ZICSI.

Diagnosis. Dorsal, ventral and marginal setae phylliform, caudal part of dorsal shield with three pairs of fungiform setae. Dorsal shield with coriaceus ornamentation. St5 long and setiform. Genital shield of females coriaceus.

Description. Female. Length of idiosoma 400 µm, width (in middle of idiosoma) 310 µm. Shape triangular, posterior margin rounded.

Deuteronymph, protonymph and larva unknown.



Figures 21-27. *Trigonuropoda takacsi* sp.n. 21: dorsal aspect; 22: dorsal seta; 23: fungiform seta; 24: marginal seta; 25: ventral aspect; 26: gnathosoma; 27: sternal shield of male

Dorsal side (Fig. 21). Dorsal shield with coriaceus ornamentation, central part of dorsal shield with nine pairs phylliform (Fig. 22), caudal part of dorsal shield with three pairs of fungiform setae (Fig. 23). Postdorsal shield absent. Marginal shield without ornamentation and provided with phylliform setae (Fig. 24). Marginal shield with scalloping margin.

Ventral side (Fig. 25). Steranal shield without ornamentation. Sternal setae not clearly visible. S3 short, smooth and filiform, S5 setae longer and setiform. Ventral shield without ornamentation, three pairs of ventral setae phylliform and one pair ventroanal setae short and filiform.

Genital shield between coxae 2 and 4, shield-shape with coriaceus ornamentation.

Gnathosoma (Fig. 26). Corniculae short, horn-like, laciniae long and smooth. Hypostomal setae are the follows: h1 long, smooth and setiform, h2 shorter and setiform, h3 long, smooth and setiform, h4 shorter, distaly serrated. Tritosternum, epistoma and chelicera not clearly visible.

Male: Length of idiosoma 400 µm, width 300 µm. Ventral and dorsal side similar to female, sternal shield coriaceus, all sternal setae filiiform and smooth. Genital shield rounded, between coxae 4 (Fig. 27). Ventral setae phylliform.

Etymology. This species is named after MR. KÁROLY TAKÁCS, ex-director of Vért Rt., who supported my travel to Africa.

Remarks. The new species is similar to *Trigonuropoda ulugurensis* HIRAMATSU, 1981, but the St5 of this species is short, while that of the new species is long. Furthermore, the central part of the dorsal shiedl possesses Phylliform setae in the new species, while there are setiform setae on this region in the known species.

genus *Macrodinychus* BERLESE, 1917

The species of this genus are distributed in the Palearctis, South and Central-America, Indo-Malay Region and New Guinea. Only one species (*Macrodinychus durmei* HIRSCHMANN, 1983) is described from Africa (HIRSCHMANN 1983).

The main characteristics of the genus are the followings:

Idiosoma. Very large mites. Shape oval, posterior margin rounded. Dorsal side with dorsal and postdorsal shields. Genital shield small, and between coxae 2 and 3.

Gnathosoma. All hypostomal setae (h1, h2, h3 and h4) distally serrated, laciniae short and serrated, corniculi horn-like.

Macrodinychus alveolaris sp.n.

(Figs. 28-33)

Material examined. Holotype: female, Kenya, Shimba Hills, from litter and epiphytes plants, 10. 03. 2001, leg. S. MAHUNKA & L. MAHUNKA-PAPP. Paratype: female, Kenya, Shimba Hills, from litter and epiphytes plants, 10. 03. 2001, leg. S. MAHUNKA & L. MAHUNKA-PAPP.

Diagnosis. Dorsal and ventral setae very short and filiform. Dorsal, ventral and marginal shield with alveolar ornamentation. Genital shield of female small, smooth and between coxae 2 and 3. Postdorsal shield without sculpture.

Description. Female. Length of idiosoma 1350-1360 µm, width (in middle of idiosoma) 850-860 µm. Shape oblong, posterior margin rounded.

Male, deuteronymph, protonymph and larva unknown.

Dorsal side (Fig. 28). Dorsal and marginal shield with alveolar ornamentation and with very short filiform setae (Fig. 29). Postdorsal shield smooth.

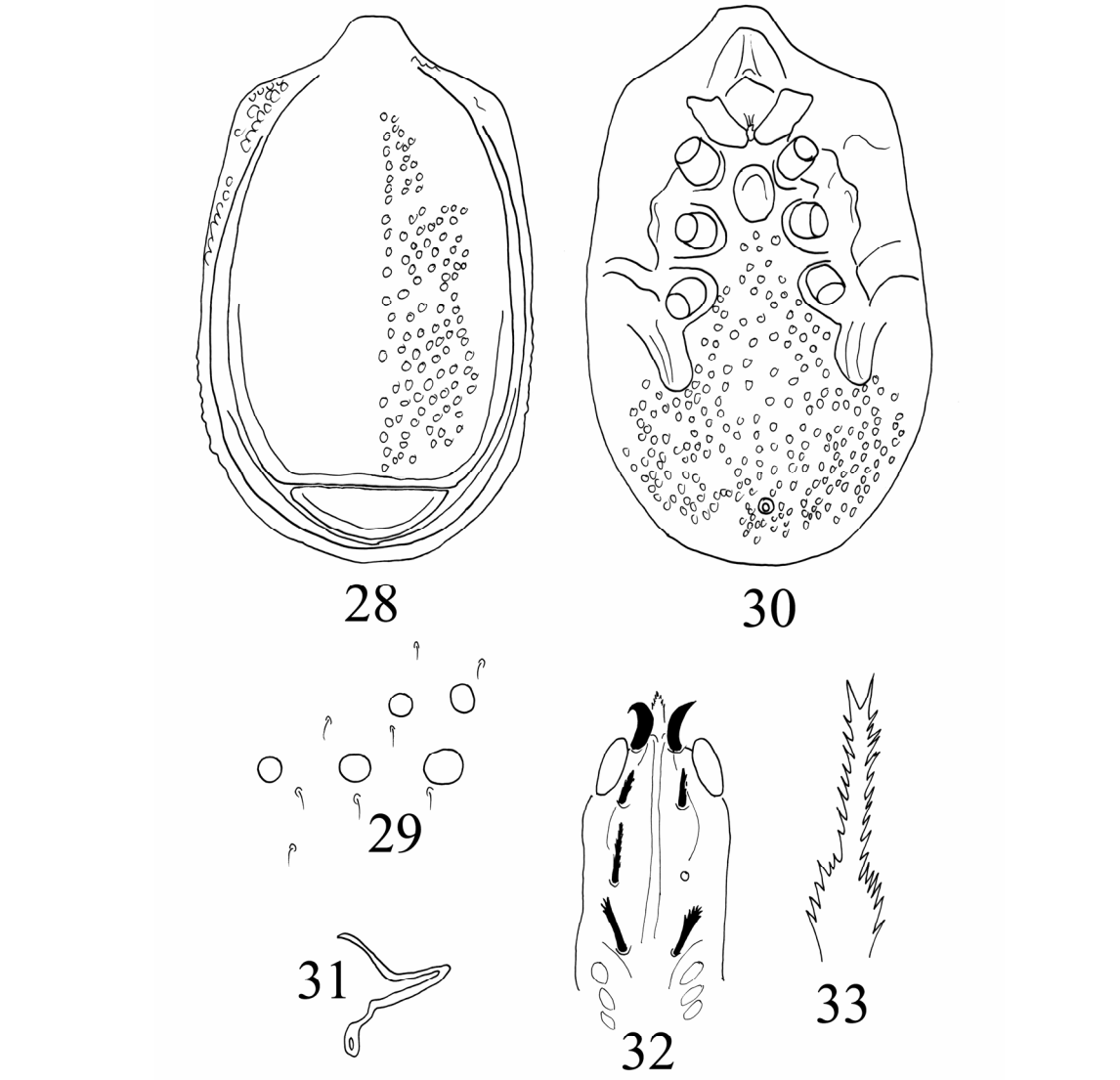
Ventral side (Fig. 30). Steranal shield smooth. All sternal setae not clearly visible. Ventral shield with alveolate and with very short filiform setae. Peritrema V-form (Fig. 31).

Genital shield very small and oval-form, without ornamentation. Genital shield between coxae 2 and 3.

Gnathosoma (Fig. 32). Corniculae short, oval, laciniae short and serrated. Ventral side of gnathosoma with four pairs of hypostomal setae: h1 short, smooth, thick and setiform, h2 short, setiform and distally serrated, h3 and h4 long, setiform and distally serrated. Epistoma with serrated margin (Fig. 33) Tritosternum and chelicera not clearly visible.

Etymology. This species is named after its characteristic ornamentation.

Remarks. The ornamentation of the new species is unique in the genus *Macrodinychus*, there are not any known *Macrodinychus* species with such alveolar pattern.



Figures 28-33. *Macrodinychus alveolaris* sp.n. 28: dorsal aspect; 29: setae and ornamentation on dorsal shield; 30: ventral aspect; 31: peritrema; 32: gnathosoma; 33: epistom

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REFERENCES

HIRAMATSU, N. (1981): Stadien von 3 neuen Trigonuropoda-Arten der Crucistruca- und Difolveolata-Gruppe aus Tanzania und Neuguinea. *Acarologie,* 28: 103-104.

HIRSCHMANN, W. (1983): Stadien von 4 neuen Uropodiden-Arten aus, Zaire, Vietnam und Tanganyika. *Acarologie,* 30: 73-77.

KONTSCHÁN, J. (2006): Uropodina (Acari: Mesostigmata) species from Angola. *Acta zool. hung*. (in press)

RYKE, P. A. J. (1953): A new species of polyaspid mite closely related to *Polyaspis berlesei* Camin 1954 (Acarina: Polyaspidae). *Journal Ent. Soc. S. Africa,* 19:217-218.

WISNIEWSKI, J. (1993): Die Uropodiden der Erde nach Zoogeographischen Regionen und Subregionen geordnet (Mit Angabe der Lande). *Acarologie,* 40: 221-291.