

**Uropodina species from East Africa III.
A new genus and five new species of Uropodina
(Acari: Mesostigmata) from Shimba Hills (Kenya)**

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Abstract – One genus (*Shimbulla* gen. n.) and five species (*Shimbulla afra* sp. n., *Trigonuropoda shimbaensis* sp. n., *Latotutulioplitis kenyaensis* sp. n., *Trachyuropoda marginalia* sp. n., *Nenteria shimbaensis* sp. n.) are described from Shimba Hills, Kenya. With 34 figures.

Key words – Acari, Uropodina, new species, Shimba Hills, Kenya.

INTRODUCTION

The Uropodina fauna of Kenya is poorly known. In my previous papers (KONTSCHÁN 2004, 2006) several species were published from Kenya, two of them (KONTSCHÁN 2004) were found in Shimba Hills. All species described in the present paper are from Shimba Hills.

Shimba Hills is a nature reserve at the southern part of Kenya near the coast of the Indian Ocean (Fig. 1). The vegetation of Shimba Hills is very important, because it holds the largest areas of coastal rain forest in East Africa (LUKE 2005).

The material is stored in alcohol and deposited in the Collections of Soil Zoology of the Hungarian Natural History Museum. Setal terminology follows MAHUNKA & ZOMBORI (1985).

DESCRIPTION OF TAXA

Shimbulla gen. n.

Type species – *Shimbulla afra* sp. n.

Diagnosis – Idiosoma oval, reddish-brown. Genital shield of female linguliform. Apical part of marginal and dorsal setae pilose. Dorsal side with marginal and dorsal shields and without postdorsal shields. Ornamentation of dorsal and ventral shields alveolar. Peritreme with characteristic shape. Only three pairs of setae of gnathosoma are clearly visible. First pair of them very wide, with several long processes. Second pair wide, smooth and spiniform. Third pair with serrated margin. Apical part of first and third legs are shown in Figs 7–8.

Etymology – The name of the new genus refers to the name of the type locality (Shimba).

Remarks – The new genus is similar to the genus *Uroobovella* BERLESE, 1905. The most important difference is the type of first setae of gnathosoma. The species of *Uroobovella* have smooth first setae, or these are hairy or with serrated margin of setiform setae, but these setae in the new genus are wide and with several long processes.



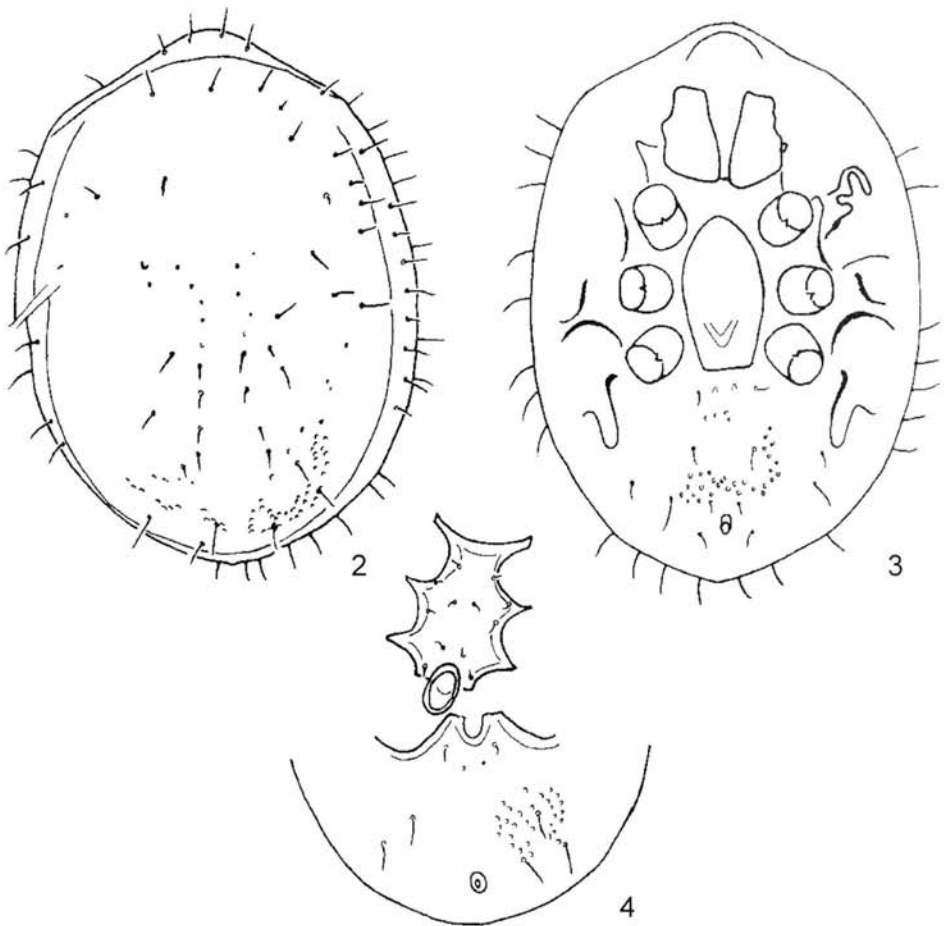
Fig. 1. Map showing Shimba Hills in Kenya

Shimbullia afra sp. n.

(Figs 2–9)

Diagnosis – See the diagnosis of genus.

Description – Female. Length of idiosoma 105 μ m, width 75 μ m. Shape alveolar, posterior margin rounded. Dorsal side (Fig. 2): all dorsal and marginal setae setiform, apical part pilose (Fig. 6). Marginal setae are different, one type shorter than the other type. Marginal shield without ornamentation, caudal part of dorsal shield with alveolar ornamentation. Dorsal side without postdorsal shield. Ventral side (Fig. 3): sternal shield without ornamentation, sternal setae not clearly visible.

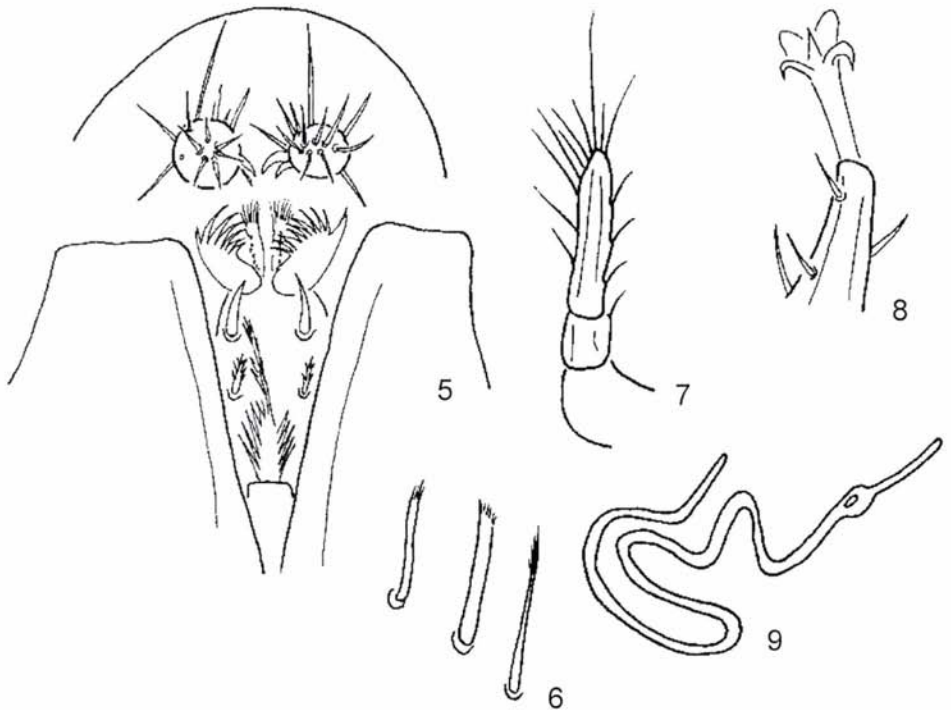


Figs 2–4. *Shimbullia afra* gen. et sp. n.: 2 = female, dorsal view, 3 = female, ventral view, 4 = male, ventral view

Ventral shield with alveolar ornamentation. Ventral setae smooth and setiform. One pair of setae longer than the other ventral setae. Adanal setae similar to ventral setae. Peritrema with characteristic shape (Fig. 9). Genital shield situated between 2 and 4 coxae, large, linguliform, without process and ornamentation. Legs: apical part of first and third legs are shown in Figs 7–8. Gnathosoma (Fig. 5): corniculi not clearly visible, laciniae long, with long hairs. Ventral side of gnathosoma with 4 pairs of hypostomal setae, h1 very wide, with several long processes, h2 wide, smooth and spiniform, h3 with serrated margin, h4 not clearly visible (covered by coxae 2). Base of tritosternum narrow, apical part with serrated margin. Epistoma and chelicera not clearly visible. Male. Length of idiosoma 103 μm , width 75 μm . Ventral and dorsal side similar to female, sternal shield with rounded genital shield, all sternal setae (six pairs) filiform and smooth, sternal shield without ornamentation, genital shield situated between coxae 4 (Fig. 4). Deuteronymph, protonymph and larva unknown.

Material examined – Holotype: female, “Kenya, Shimba Hills, Lodge, rain forest, from decomposed tree, 12.03.2002. leg. S. Mahunka & L. Mahunka-Papp”. Paratype: male, date and locality same as holotype.

Etymology – This species is named after the African continent.

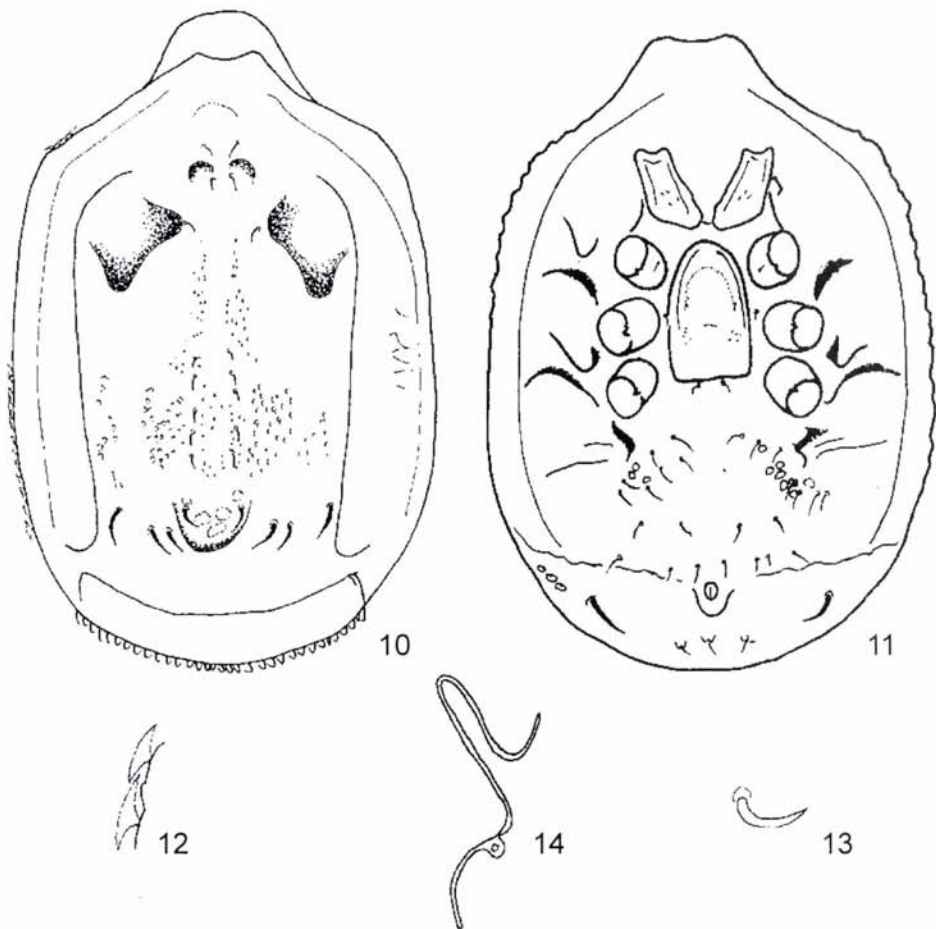


Figs 5–9. *Shimbulla afra* gen. et sp. n.: 5 = female, gnathosoma, 6 = female, dorsal and marginal setae, 7 = female, apical part of leg 1, 8 = female, apical part of leg 3, 9 = female, peritrema

Trigonuropoda shimbaensis sp. n.
(Figs 10–18)

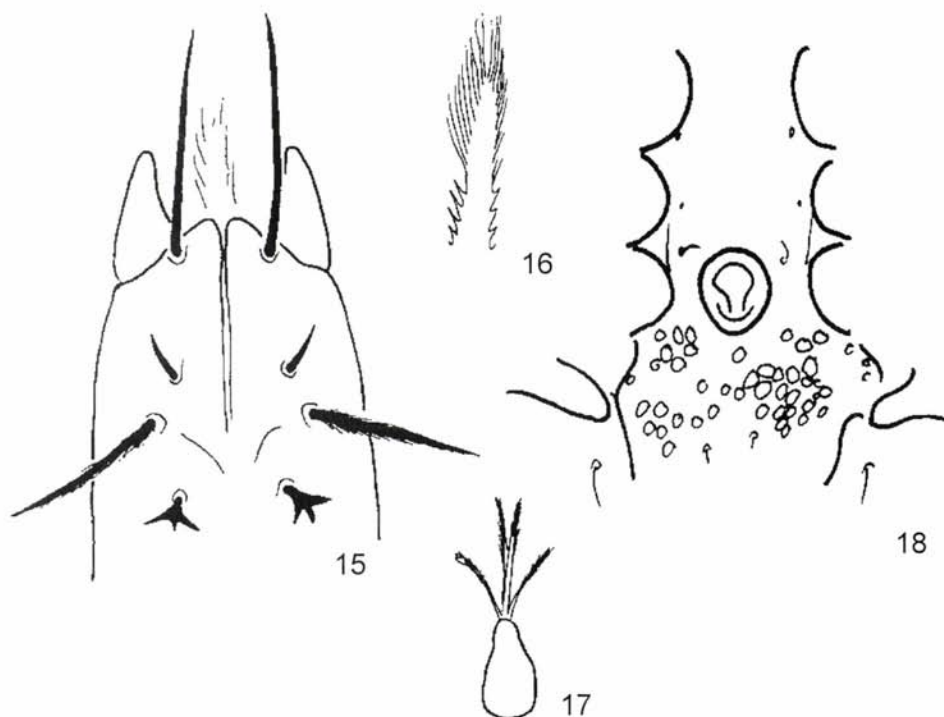
Diagnosis – All marginal setae wide and T-shaped. Ventral setae smooth and setiform. Dorsal setae short, smooth and setiform, four pairs on caudal part of dorsal shield longer, stronger than other dorsal setae, spiniform. Ventral shield with alveolar ornamentation. Genital shield of female scutiform.

Description – Female. Length of idiosoma 660–670 μm , width 460–480 μm . Shape alveolar, posterior margin rounded. Dorsal side (Fig. 10): most dorsal setae short, smooth and setiform, four



Figs 10–14. *Trigonuropoda shimbaensis* sp. n.: 10 = female, dorsal view, 11 = female, ventral view, 12 = female, marginal setae, 13 = female, caudal seta, 14 = female, peritreme

pairs on caudal part of dorsal shield longer, stronger than other dorsal setae, spiniform. Two of them placed in a well-sclerotized hump, covered by maculate ornamentation. Dorsal shield with foveolate ornamentation. Setae and ornamentation on postdorsal shield lacking. Two well-sclerotized half ring and two well-sclerotized humps on anterior part of dorsal shield. All marginal setae wide and T-shaped (Fig. 12), marginal shield without ornamentation. Caudal part of dorsal side with long, smooth and spiniform setae (Fig. 13). Ventral side (Fig. 11): sternal setae short, smooth and setiform. All ventral setae longer, smooth and setiform. Ventroanal setae not clearly visible. Three smooth and setiform postanal setae on small humps and one pair long, smooth and spiniform setae without humps on caudal part of ventral shield. Ventral shield with alveolar ornamentation. Peritrema is shown in the Fig. 14. Genital shield situated between 2 and 4 coxa and large and scutiform, without ornamentation. Gnathosoma (Fig. 15.): corniculi horn-like, laciniae not clearly visible. Hypostomal setae are the following: h1 long, smooth and setiform, h2 short, smooth and setiform, h3 very long and setiform, with hairs on its margin, h4 shorter, trifurcate. Base of tritosternum narrow, without spines, laciniae with four branches, their margin with hairs, (Fig. 17). Epistoma long, base distally serrated, apical part with hairs (Fig. 16). Chelicerae not clearly visible. Male. Length of idiosoma 640 μm , width 480 μm . Ventral and dorsal side similar to female, sternal shield with rounded genital shield, all sternal setae setiform, short and smooth, sternal shield alveolar ornamentation, genital shield situated between coxae 4 (Fig. 18). Deuteronymph, protonymph and larva unknown.



Figs 15–18. *Trigonuropoda shimbaensis* sp. n.: 15 = female, gnathosoma, 16 = female, epistoma, 17 = female, tritosternum, 18 = male, ventral view

Material examined – Holotype: female, “Kenya, Shimba Hills, Lodge, rain forest, from decomposed tree, 12.03.2002. leg. S. Mahunka & L. Mahunka-Papp”. Paratypes: 4 females and one male, date and locality same as holotype. Non-type specimens: 3 males, “Kenya, Shimba Hills, Lodge, rain forest, from soil and litter, 13.03.2002. leg. S. Mahunka & L. Mahunka-Papp”.

Etymology – This species is named after the region of its origin.

Latotutulioplitis kenyaensis sp. n.

(Figs 19–23)

Diagnosis – All smooth and setiform dorsal setae on pear-shaped base. A number of smooth and setiform setae on ventral and caudal part of marginal shields. Ventral shield without ornamentation, only posterior part of metapodal lines present coriaceous ornamentation. Genital shield of female large and oval.

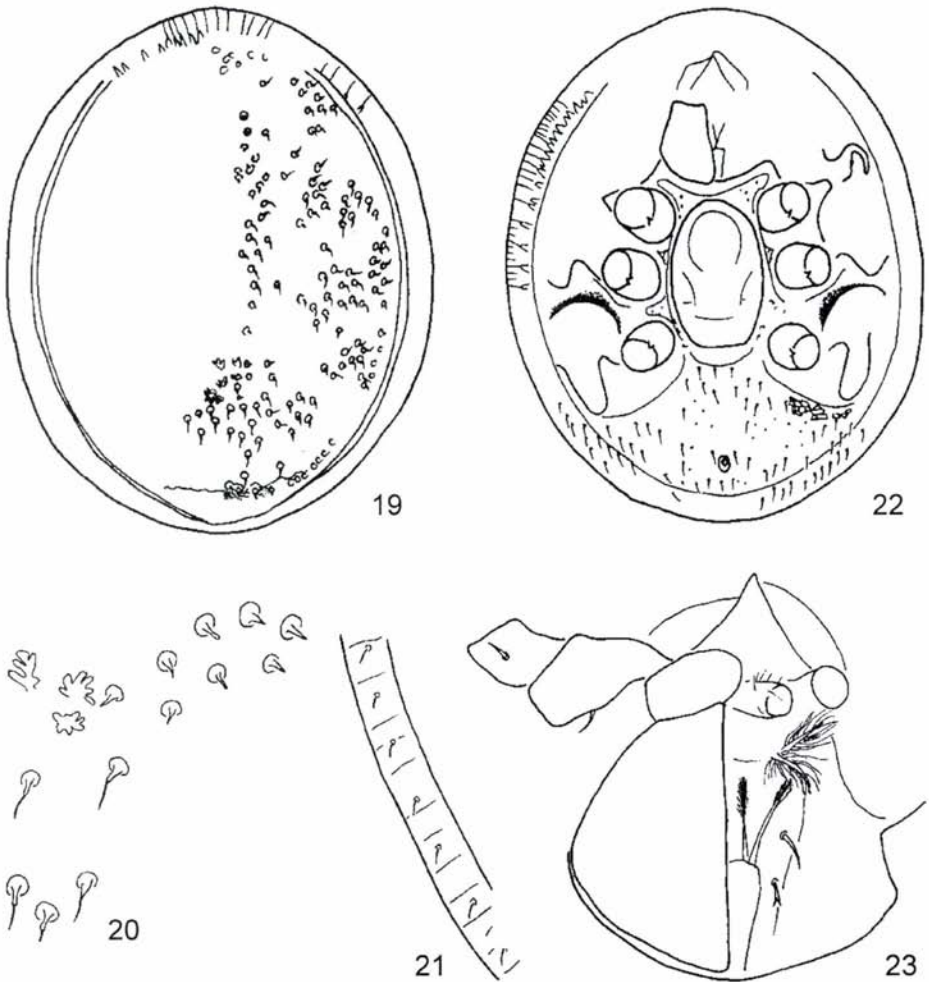
Description – Female. Length of idiosoma 1440 µm, width 1180 µm. Shape alveolar, posterior margin rounded. Dorsal side (Fig. 19): all smooth and setiform dorsal setae on pear-shaped base (Fig. 20). Ornamentation of dorsal shield alveolate, caudal part of dorsal shield dotted. Marginal setae shorter than dorsal setae and without pear-shaped base (Fig. 21). Marginal shield without ornamentation. Ventral side (Fig. 22): sternal setae short, smooth and filiform. All ventral setae longer than sternal setae, smooth and setiform. All setae on caudal part of marginal shield similar to ventral setae. Ventral shield without ornamentation, only posterior part of metapodal lines present coriaceous ornamentation. Peritrema characteristic for genus. Genital shield situated between 2 and 4 coxa and large and oval, without ornamentation. Gnathosoma (Fig. 23) not clearly visible (covered by coxae 1). Laciniae with several branches, their margin with long hairs. Two of the hypostomal setae visible clearly. One of them smooth and setiform, other one bifurcate. Base of tritosternum narrow, without spines, laciniae with two visible branches, their apical parts with hairs. Epistoma and chelicerae not clearly visible. Male, deuteronymph, protonymph and larva unknown.

Material examined – Holotype: female: “Kenya, Shimba Hills, rain forest, from mixed litter, 10.03.2002. leg. S. Mahunka & L. Mahunka-Papp”.

Etymology – This species is named after the region of its origin.

Remarks – Until now, species of the genus *Latotutulioplitis* HIRSCHMANN, 1984 were known from Cameroon only (WISNIEWSKI 1993). This is the first record of the genus from East Africa. Unfortunately, three species (*L. angustifolia* HIRSCHMANN, 1984, *L. latifolia* HIRSCHMANN, 1984 and *L. irae* HIRSCHMANN, 1984) were described on the basis of the deuteronymph only, and *L. radiata* HIRSCHMANN, 1984 was described on the basis of the male only. A key to the females is given below.

- 1 (4) Dorsal setae smooth.
 2 (3) Dorsal setae without pear-shaped base *L. ootutuli* HIRSCHMANN, 1984
 3 (2) Dorsal setae with pear-shaped base ***L. kenyaensis* sp. n.**
 4 (1) Dorsal setae not smooth.
 5 (6) Genital shield with wide process on anterior margin
L. labyrinthi HIRSCHMANN, 1984



Figs 19–23. *Latotutulioplitis kenyaensis* sp. n.: 19 = female, dorsal view, 20 = female, dorsal setae, 21 = female, marginal setae, 22 = female, ventral view, 23 = female, gnathosoma

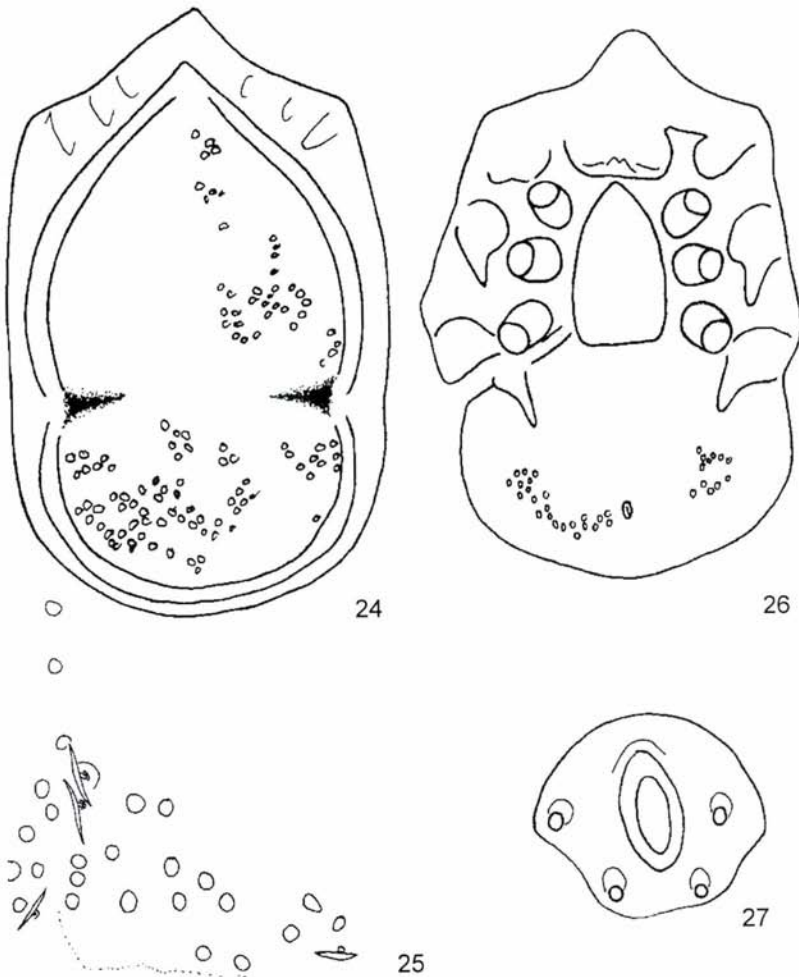
6 (5) Genital shield without process.

7 (8) St5 situated near the posterior margin of genital shield

L. latotutuli HIRSCHMANN, 1984

8 (7) St5 situated far from the posterior margin of genital shield

L. tutuli HIRSCHMANN, 1984



Figs 24–27. *Trachyuropoda marginalia* sp. n.: 24 = female, dorsal view, 25 = female, ornamentation and setae of dorsal shield, 26 = female, ventral view, 27 = female, anal platelet

Trachyuropoda marginalia sp. n.
(Figs 24–29)

Diagnosis – All dorsal and ventral setae T-shaped. Marginal shield on anterior part of dorsal side wide. Ornamentation of dorsal and ventral shields alveolar. One pair of furrows on lateral part of dorsal shield, furrows without long hairs. Genital shield of female large and scutiform.

Description – Female. Length of idiosoma 920 μm , width 640 μm . Shape alveolar, posterior margin rounded. Dorsal side (Fig. 24): dorsal shield well-sclerotized. All dorsal setae T-shaped and ornamentation of dorsal shield alveolate (Fig. 25). One pair of furrows on lateral part of dorsal shield can be found. Furrows without long hairs. Marginal shield on anterior part of idiosoma wide and apical part widely triangular. Marginal setae wide and T-shaped. Ornamentation on marginal shield lacking. Ventral side (Fig. 26): sternal setae not clearly visible, ornamentation on sternal shield lacking. All ventral setae T-shaped. Ventral shield with alveolar ornamentation. Peritreme not clearly visible. Anal plate is shown in Fig 27. Genital shield situated between 2 and 4 coxa, large and scutiform, without ornamentation.

Gnathosoma (Fig. 28) not clearly visible. Laciniae with several branches, their margin with long hairs. Three of hypostomal setae clearly visible. Two (h2 and h3) of them setiform with serrated margin, h4 short and trifurcate. Base of tritosternum narrow, without spines, lacininae with four visible branches, their apical parts with long hairs. Epistoma triangular with hairs (Fig. 29), chelicerae not clearly visible. Male, deuteronymph, protonymph and larva unknown.

Material examined – Holotype: female, “Kenya, Shimba Hills, Kwale, from soil and litter, 30.06.1992. leg. S. Mahunka & L. Mahunka-Papp”.

Etymology – This species is named after the widened posterior part of the marginal shield.

Remarks – The new species belongs to the *Trachyuropoda canestriniana* (BERLESE, 1891) group, from which one species is known from Africa (*Trachyuropoda athiasae* HIRSCHMANN, 1975). *T. athiasae* is narrower than the new species, and bears several long setae near the dorsal furrows.

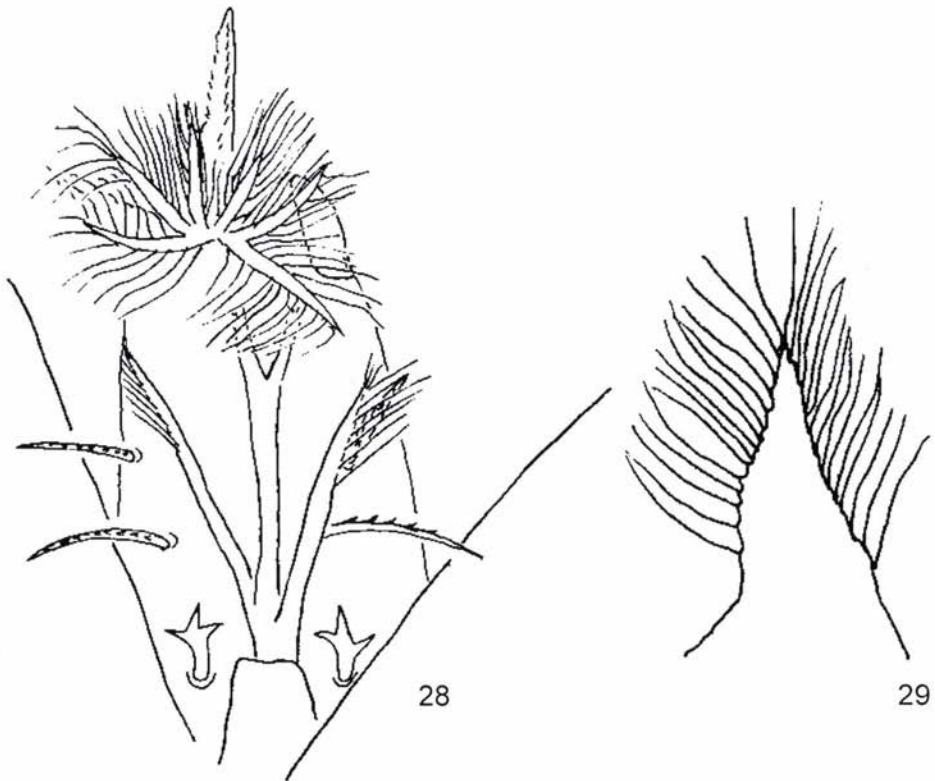
Nenteria shimbaensis sp. n.
(Figs 30–34)

Diagnosis – Idiosoma oblong. All dorsal, marginal and ventral setae smooth and setiform. Ornamentation on dorsal and marginal shields lacking, ventral shield with dotted ornamentation. Genital shield of female oblong and oval, with process on anterior margin. Perigenital line present.

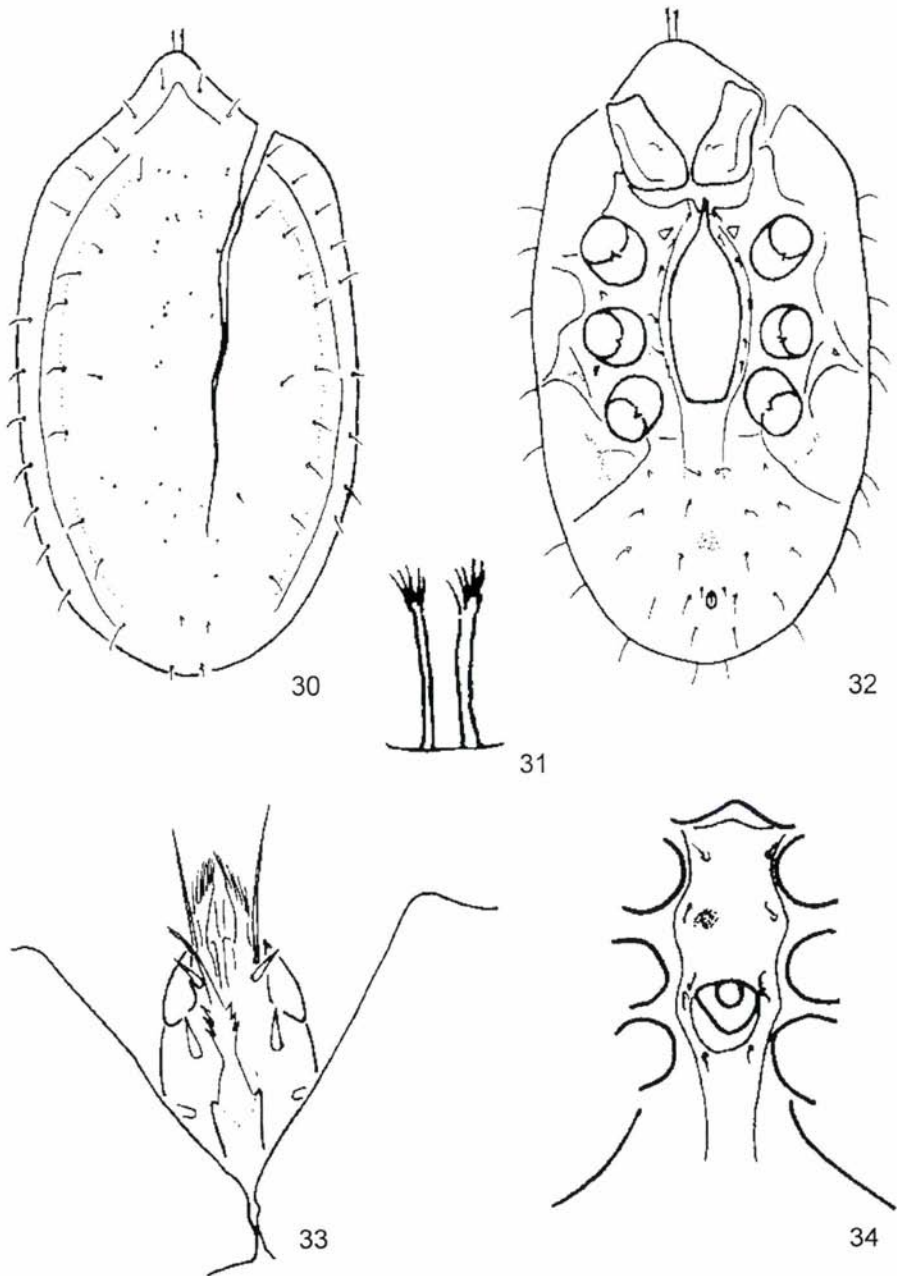
Description – Female. Length of idiosoma 500 μm , width 260 μm . Shape oblong, posterior margin rounded. Dorsal side (Fig. 30): all dorsal and marginal setae smooth and setiform. Ornamentation on dorsal and marginal shields lacking, ventral shield with dotted ornamentation.

tation on dorsal and ventral shields lacking. One pair of pilosed setae on anterior part of idiosoma (Fig. 31). Ventral side (Fig. 32): sternal setae short, smooth and filiform. Sternal shield without ornamentation. All ventral setae longer than sternal setae, smooth and setiform. Ventral shield with dotted ornamentation. Adanal setae smooth, filiform, shorter than ventral setae. Peritrema not clearly visible. Genital shield situated between 2 and 4 coxa and oblong, without ornamentation and with process. Apical part of process with two short branches. Gnathosoma (Fig. 33): corniculi horn-like, apical part of laciniae with long hairs. Three of the hypostomal setae clearly visible: h1 long, smooth and setiform, h2 and h3 shorter and wider than h1, h4 not clearly visible. Base of tritosternum narrow, with two spines, apical part of laciniae not clearly visible, visible part with serrated margin. Epistoma and chelicerae not clearly visible. Male. Length of idiosoma 480 μm , width 260 μm . Shape oblong, posterior margin rounded. Dorsal and ventral side similar to female. Sternal setae short, smooth and filiform. Ornamentation dotted. Genital shield of male oval and situated between coxae 3 and 4 (Fig. 34). Deuteronymph, protonymph and larva unknown.

Material examined – Holotype: female, “Kenya, Shimba Hills, Kwale, from soil and litter, 30.06.1992. leg. S. Mahunka & L. Mahunka-Papp., Paratype: male, date and locality same as holotype.



Figs 28–29. *Trachyuropoda marginalia* sp. n.: 28 = female, gnathosoma, 29 = female, epistoma



Figs 30–34. *Nenteria shimbaensis* sp. n.: 30 = female, dorsal view, 31 = female, anterior setae on idiosoma, 32 = female, ventral view, 33 = female, gnathosoma, 34 = male, ventral view

Etymology – This species is named after the region of its origin.

Remarks – The shape and size of the idiosoma are different from those of the other species of the genus. The idiosoma is elongate (not oval as in the other species), and the length is 480 to 500 μm , i.e. shorter than in any other species.

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The oribatid species described by Berlese (Acari)

by MAHUNKA, S. and L. MAHUNKA-PAPP

The authors had the opportunity for years to study the Oribatid species described by Berlese currently deposited in the Istituto Sperimentale per la Zoologia Agraria at Florence. The results of this series of studies are summarized in this volume.

The volume begins with an essay-like Introduction heavily relying on subjective opinions discussing the general questions of Oribatology. The following section lists Berlese's species placed in the modern system helping the specialists with morphological notes and many drawings; here also the condition of the specimens is discussed and lectotypes are designated.

The third, large section is the catalogue proper, wherein all the species are listed in the systematic order together with their combination and synonymic names. Here one may find all the literature data, usually missing from ordinary works, with reference to Description and Taxonomy, Distribution, with special emphasis on Catalogues whose references are partly unreliable. Where it was deemed necessary further information are added under the heading of Remarks. The volume closes with a very detailed list of literature.

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