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First record of the genus *Bloszykiella* in Kenya with the description of *Bloszykiella tertia* sp. n. (Acari: Uropodidae) from a *Pinus radiata* D. Don plantation

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ABSTRACT

The third species of the genus *Bloszykiella* Kontschán, 2010 was found in Kenya in a *Pinus radiata* D. Don plantation. This is the first record of this genus in this country. The new species is described as *Bloszykiella tertia* sp. n. from Nyandarua district of Kenya, and differs from the other previously described species in the absence of strongly sclerotised dorsal lines, the shape of the dorsal setae and the type of dorsal ornamentation.

KEY WORDS: Acari, Uropodina, new species, new record, *Pinus radiata* plantation, Kenya.

INTRODUCTION

The genus *Bloszykiella* was established by Kontschán (2010) for the species *B. africana* Kontschán, 2010, which was collected in Tanzania. Three years later, Kontschán and Stárý (2013) found the second species of this genus and added several new additional data to the description of the genus. On the basis of these two Tanzanian records, the genus *Bloszykiella* seemed to be an endemic Tanzanian mite genus. During the last year, we investigated the mite collection of the Natural History Museum of Geneva (Muséum d'histoire naturelle de la Ville de Genève) and we found four specimens of *Bloszykiella* in one unsorted soil sample collected in Kenya. This new species was found in a plantation of *Pinus radiata* D. Don, a tree of North-American origin that is often planted in the Southern Hemisphere. The largest plantations of *Pinus radiata* can be found in Australia, New Zealand, Chile and Spain. Several large plantations are present in South Africa (57 000 ha), but smaller forests can be seen in several other countries as well (Mead 2013).

We add several new data to the diagnosis of the genus and we give the description and illustration of the third *Bloszykiella* species which was collected in Kenya.

MATERIAL AND METHODS

Specimens of the new species were found in one unsorted African soil sample of the Arachnida Collection of the Natural History Museum of Geneva, which was collected in a *Pinus radiata* plantation in the Nyandarua district in Kenya. Specimens were cleared in lactic acid and drawings were made with the aid of a drawing tube. The specimens investigated were stored in ethanol and deposited in the Natural History Museum of Geneva, Switzerland.

Abbreviations: St — sternal setae, h — hypostomal setae, v — ventral setae, ad — adanal setae.

TAXONOMY

Genus *Bloszykiella* Kontschán, 2010

Diagnosis (based on females after Kontschán & Starý 2013, but modified; for deutonymph see Kontschán 2010): Idiosoma oval, dorsally domed, marginal and dorsal shields fused anteriorly. All dorsal setae short, with pilose or serrate distal margins. Submarginal shield reduced posteriorly, pygidial shield trapezoidal, bearing pilose or serrate setae. Five pairs of sternal setae present, all smooth and needle-like. Genital shield trapezoidal, its anterior margin situated between coxae III. Peritreme L-shaped. Hypostomal setae h1 in female pilose in the central one third, distally and basally smooth; h2 short and smooth, placed close to h1; h3–h4 smooth or marginally serrate. Corniculi small and horn-like, fixed digit of chelicera as long as movable digit, bearing several large and short teeth. Chelicera without internal sclerotised nodes. Leg I without ambulacral claws; with serrate setae on trochanter.

Type species: *Bloszykiella africana* Kontschán, 2010, by original designation.

Bloszykiella tertia sp. n.

Figs 1–16

Etymology: This is the third species of this genus that has been found; therefore, the name of the new species refers to its chronological placement (*tertia* = third in Latin).

Description:

Female.

Idiosoma: Length 1290–1360 µm, width 800–850 µm (n=4), colour brown. Shape oval, posterior margin rounded.

Dorsal aspect (Fig. 1): Marginal and dorsal shields fused anteriorly. Dorsal shield neotrichous, most dorsal setae short and marginally pilose (*ca* 60–75 µm). Dorsal shield covered by oval pits (Fig. 2). Caudal margin of dorsal shield bearing a large, triangular protuberance (Fig. 3). Margins of idiosoma with reticulate sculptural pattern on caudal area and with numerous pilose setae. Submarginal shield posteriorly reduced and without setae; pygidial shield trapezoidal, anterior margin undulate, bearing several marginally pilose setae (*ca* 60–70 µm) and covered by oval pits.

Ventral aspect (Fig. 5): Intercoxal area with a strongly sclerotised court around genital opening and with five pairs of sternal setae, all needle-like and smooth. Seta St1 inserted at the level of the anterior margin of coxae II, St2 at the level of the anterior margin of the strongly sclerotised court, St3 at the level of the anterior margin of coxae III, St4 at the level of the posterior margin of coxae III, St5 near basal edges of genital shield. St5 (*ca* 40 µm) longer than other sternal setae (*ca* 32–35 µm). Sternal shield without ornamentation. Ventral shield with numerous, short (*ca* 40–45 µm) marginally pilose setae, except the short (*ca* 23 µm) and needle-like first ventral setae (v1) (Fig. 5). Surface of ventral shield smooth, but posterior area of ventral shield covered by oval pits (Fig. 6). Pedofossae deep, without ornamentation and without separate furrows for tarsi IV. Genital shield triangular, situated between coxae III and IV, with a rounded anterior

TABLE 1
Distinguishing characters of *Bloszykiella* species.

	<i>B. africana</i>	<i>B. grebennikovi</i>	<i>B. tertia</i>
Strongly sclerotised dorsal lines	present	present	absent
Triangular caudal process on dorsal shield	absent	absent	present
Ornamentation on central area of dorsal shield	absent	with irregular pits	with oval pits
Apical margin of pygidial shield	straight	straight	undulate
Dorsal setae	pilose	phylliform with serrate margins	pilose
Setae v1	marginally pilose	trifurcate	smooth and needle-like
Ornamentation of genital shield	some rounded pits near anterior margin	reticulate sculptural pattern	reticulate sculptural pattern
Tritosternal laciniae	with six branches	with two branches	with two long central and several short lateral branches
Hypostomal setae h3 and h4	smooth	smooth	marginally serrate
Internal malae	with one lateral tooth	with one lateral tooth	apically pilose

edge and straight posterior edge. Posterior surface of genital shield covered by reticulate sculptural pattern (Fig. 7). Peritremes L-shaped (Fig. 8). Adanal setae similar in shape and length to ventral setae, postanal seta absent. Tritosternum (Fig. 9) with vase-shaped base, laciniae divided into several branches.

Gnathosoma (Fig. 10): Corniculi small, smooth and horn-like, internal malae apically pilose and longer than corniculi. Hypostomal setae h1 long (ca 90–95 µm), pilose in apical two-thirds and basally smooth; h2, h3 and h4 short (ca 13–20 µm), h2 smooth and needle-like, h3 and h4 marginally serrate. Tritosternum with vase-like basis, laciniae with two long central and several short lateral branches. Chelicerae without internal sclerotised nodes (Fig. 12). Fixed digit of chelicera as long as movable digit, with three large apical teeth on movable digit and two large apical and several short lateral teeth on fixed digit. Trochanter of palp with two long and serrate ventral setae (Fig. 8), all setae on palp smooth, except pilose inner setae on palp genu. Epistome apically subdivided into two pilose and three smooth branches, short spine situated near basis of branches (Fig. 11).

Legs (Figs 13–16): Leg I without ambulacral claws. Serrate setae and smooth setae situated on all legs.

Larva, nymphs and male unknown.

Holotype ♀: KENYA: Ke-77/68, Nyandarua district, 10km SE of Njabini, leaf litter of a *Pinus radiata* plantation, alt. 2550 m; 9.xi.1977, V.Mahnert & J.-L.Perret (NHMG).

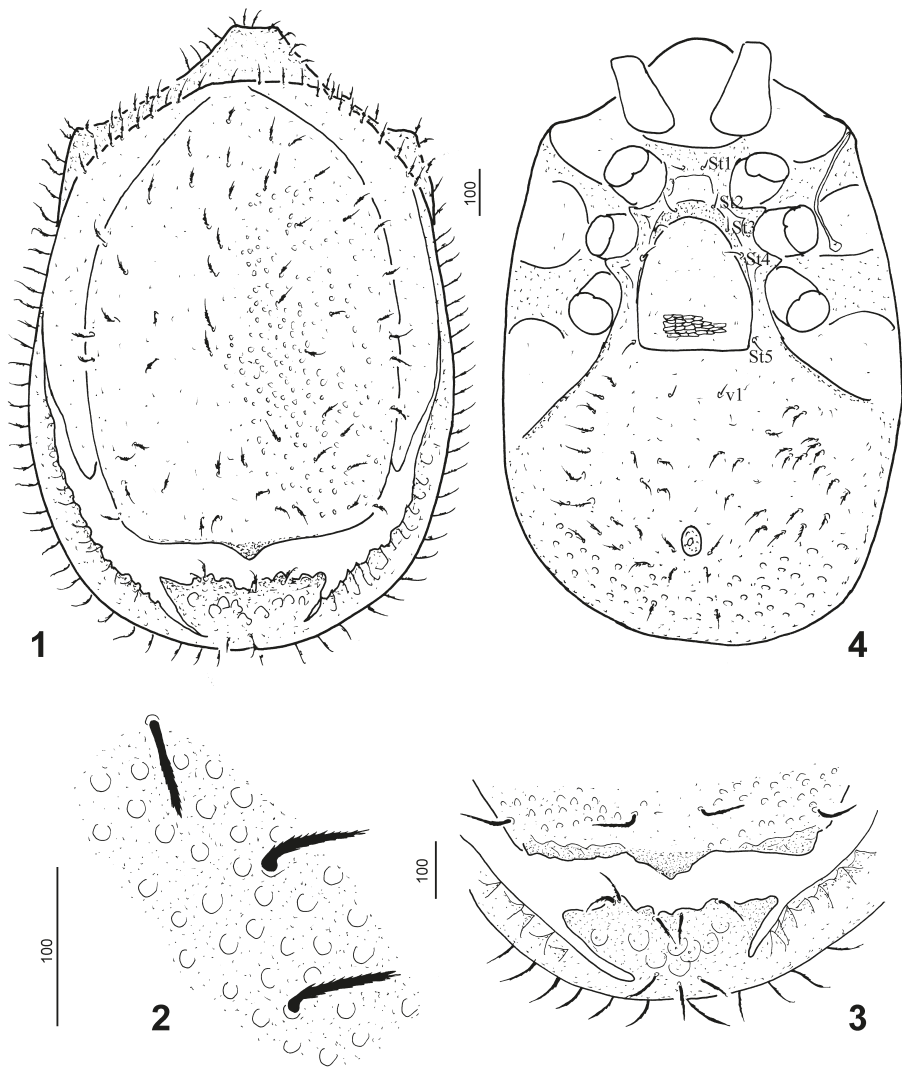
Paratypes: 4♀ Same data same as for holotype (NHMG).

Comparison: Currently only two *Bloszykiella* species are known, both of which were collected in Tanzania and bear strongly sclerotised lines on the dorsal shields. The new

species is recorded from Kenya and the strongly sclerotised dorsal lines are missing from its body. The most important differences between the three known *Bloszykiella* species are summarised in Table 1.

DISCUSSION

The genus *Bloszykiella* seems to be an endemic East African genus of the Uropodina mites (Fig. 17). The described three species occur only in Tanzania and Kenya; the Tanzanian species were collected in moss (*B. africana*) and in leaf litter (*B. grebennikovi*), and the new species was found in the leaf litter of *Pinus radiata*. The three found species



Figs 1–4. *Bloszykiella tertia* sp. n., female, holotype, Kenya: (1) dorsal view of body; (2) ornamentation and setae on dorsal shield; (3) caudal area of dorsal idiosoma; (4) ventral view of body.

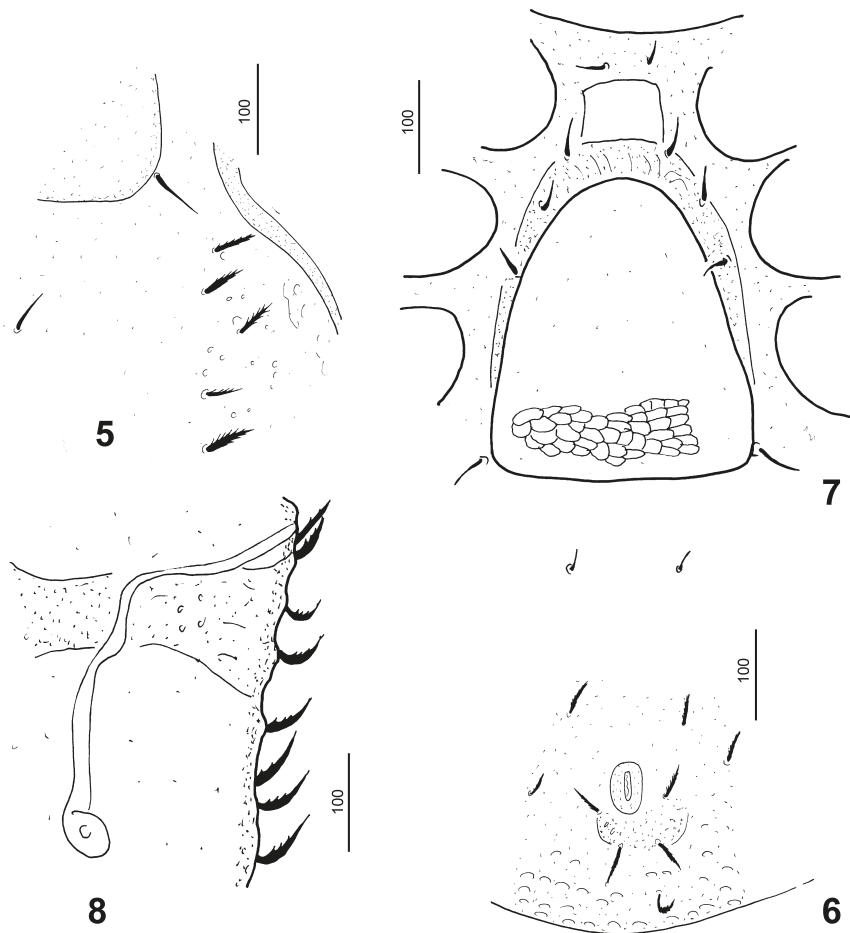
have large and strongly denticulate chelicerae; therefore these *Bloszykiella* species could be considered slow moving predators of East African soils.

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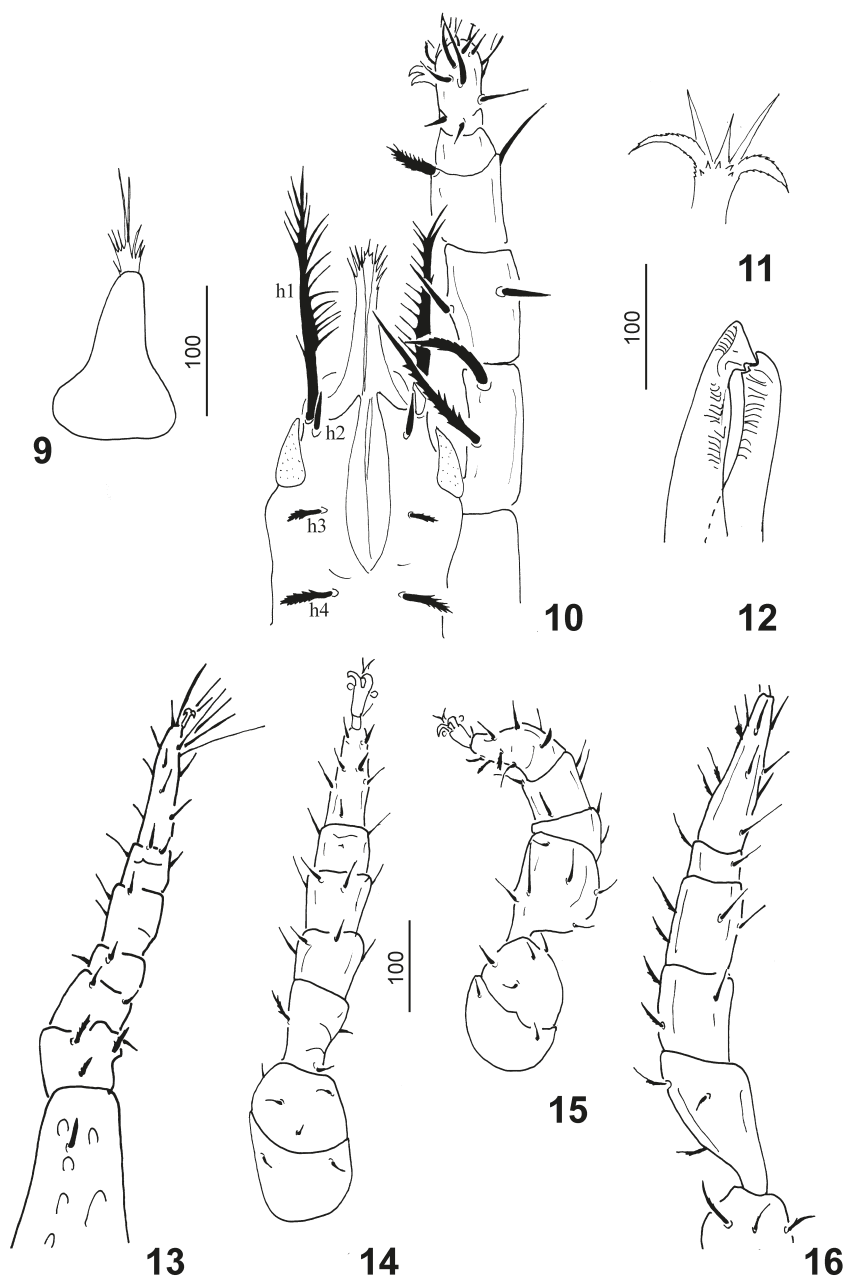
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REFERENCES

- KONTSCHÁN, J. 2010. *Bloszykiella africana* gen. nov., sp. nov., a new mite genus from East Africa. *Zootaxa* **2525**: 63–68.
- KONTSCHÁN, J. & STÁRÝ, J. 2013. New Uropodine mites from Tanzania (Acari: Mesostigmata). *Zootaxa* **3683**: 267–279.
- MEAD, D.J. 2013. *Sustainable management of Pinus radiata plantations*. FAO Forestry Paper No. 170. Rome, FAO.



Figs 5–8. *Bloszykiella tertia* sp. n., female, holotype, Kenya: (5) lateral part of ventral shield with ventral setae; (6) anal area of ventral shield; (7) intercoxal area; (8) peritreme.



Figs 9–16. *Bloszykiella tertia* sp. n., female, holotype, Kenya: (9) tritosternum; (10) entral view of gnathosoma and palp; (11) apical part of epistome; (12) chelicerae; (13) Leg I; (14) Leg II; (15) Leg III; (16) Leg IV (all legs in ventral view, claw of Leg IV not illustrated).

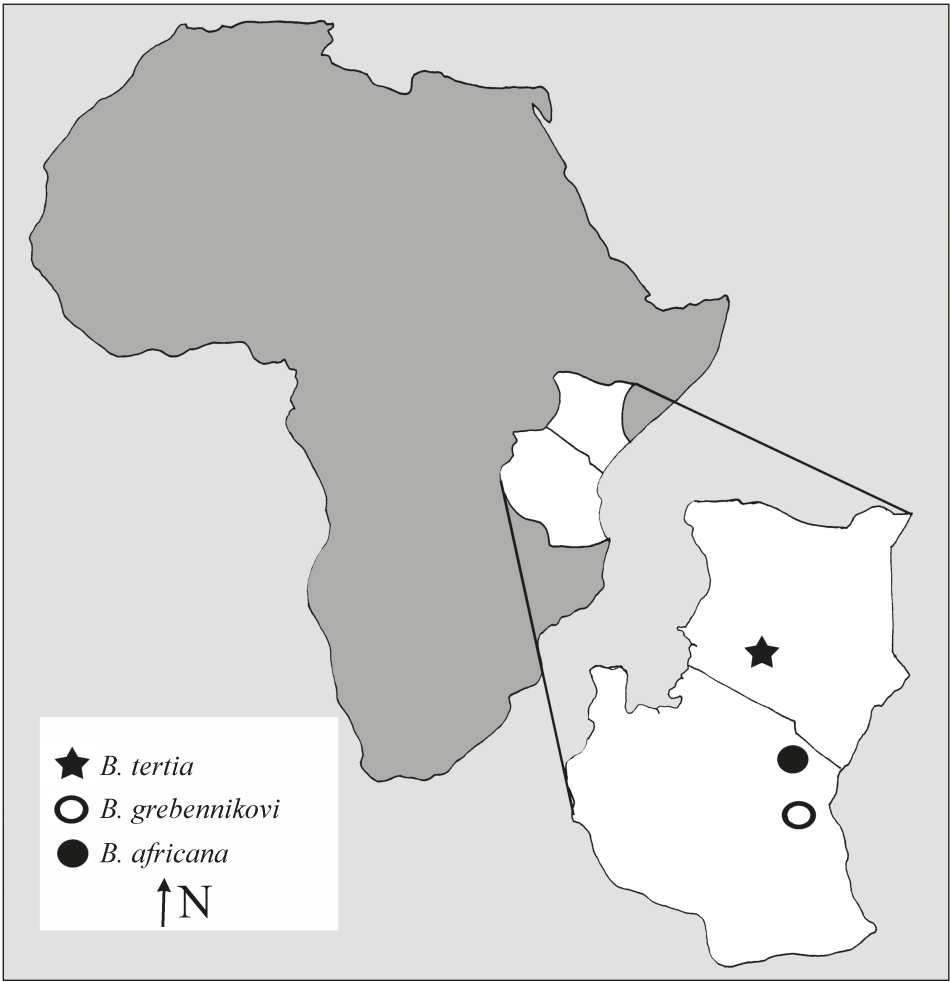


Fig. 17. Occurrences of *Bloszykiella* species in East Africa.

