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Three new species of *Rotundabaloghia* Hirschmann, 1975 from Brazil (Acari: Uropodidae)

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

Abstract. Three new species (*Rotundabaloghia traseri* n. sp., *R. brasiliensis* n. sp. and *R. gigantea* n. sp.) of *Rotundabaloghia* Hirschmann, 1975 (Acari: Uropodidae) are described from Brazil. A key is provided for the known species of *Rotundabaloghia* that are known from Brazil. With 12 figures.

Key words: acarology, taxonomy, new species, *Rotundabaloghia*, Uropodidae, Brazil.

INTRODUCTION

The genus *Rotundabaloghia* Hirschmann, 1975 (Acari: Uropodidae) includes over 120 species from the tropical regions of the world, which together have a circum-tropical distribution (Hirschmann 1975a, 1975b, 1975c; Wiśniewski 1993; Wiśniewski & Hirschmann 1993; Kontschán 2004, 2005, 2006, 2007, 2008).

Hirschmann (1972) described the first Brazilian species, which were placed in the genus *Uroobovella* (*U. guttasetta* Hirschmann, 1972 and *U. unguiseta* Hirschmann, 1972). In the next year Hirschmann (1973) described a new species (as *U. rotunda* Hirschmann, 1973) from Brazil. After the description of the genus *Rotundabaloghia* (Hirschmann 1975a), Hirschmann (1975b) placed the *U. guttasetta, U. unguiseta* and *U. rotunda* species to the new genus (*R. guttasetta* (Hirschmann, 1972)*, R. unguiseta* (Hirschmann, 1972)*, R. rotunda* (Hirschmann, 1973)). Later the same author described one new species (*R. woelkei* Hirschmann, 1981) from this country and eleven years later he presented another two new *Rotundabaloghia* species *(R. hexaunguiseta* Hirschmann, 1992 and *R. manausensis* Hirschmann, 1992) from Brazil (Hirschmann 1992a).

Professor JÁNOS BALOGH, the noted Hungarian acarologist collected several soil, moss and leaf litter materials in several part of Brazil. This paper presents the descriptions of three new *Rotundabaloghia* species from Balogh's Brazilian collection.

MATERIALS AND METHODS

Specimens were cleared in lactic acid and stored in alcohol. Drawings were made with a camera lucida. The specimens examined are stored in ethanol and deposited in the Collections of Soil Zoology of the Hungarian Natural History Museum, Budapest. The nomenclature and the abbreviations follow KONTSCHÁN's (2008) paper: h1-h4, hypostomal setae, St1-St5, sternal setae, V2, V6, V7 and V8 are the ventral idiosomal setae, *ad* are the adanal setae. Measurements are given **in** micrometres (μm).

DESCRIPTION OF THE NEW SPECIES

Rotundabaloghia brasiliensis n. sp.

(Figs 1–4)

DIAGNOSIS

Sternal setae St1 absent, St2 and St4 short, St3 two times longer than St2. V2 and V6 short, smooth and needle-like. V7 and V8 three times longer than other ventral setae and pilosed. Setae *ad* as long as V7 and V8 and their margin smooth. Sternal, genital and ventral shields without ornamentation. Genital shield scutiform. Dorsal setae heterotrichous, most of setae needle-like and smooth on the anterior and marginal region, several setae on the caudal region bear short hairs on their apical part. Ornamentation on dorsal shield absent.

MATERIAL EXAMINED.

Holotype: Female. BR92B36. Brazil, Serra do Mar, Carangatatuba National Park, 900–1000 m, from soil, 03.VI.1992. leg. J. Balogh. Paratypes: six females and six males. Locality and date the same as holotype.

DESCRIPTION.

Female. Length of idiosoma 300-310 μm, width 250-270 μm (n= 7). Shape circular, posterior margin rounded.

Dorsal side (Figs 1-2). Marginal and dorsal shields fused. Most of dorsal setae smooth and needle-like on apical and marginal region. Setae on caudal part of dorsal shield bear short hairs on their apical part. Pattern of dorsal shield absent.

Ventral side (Fig. 2). Sternal and ventral shields without ornamentation. St1 absent, St2, St3 and St4 smooth and needle-like, St3 two time longer than St2 and St4. St2 placed near anterior region of coxae II, St3 near central region of coxae III and St4 can be seen near the anterior margin of coxae IV. Ventral setae are as follows: V2 and V6 short, smooth and needle-like, V2 placed near the basis of genital shield. V7 and V8 three times longer than V2 and V6, their margin pilesed. Setae *ad* long, as long as V7

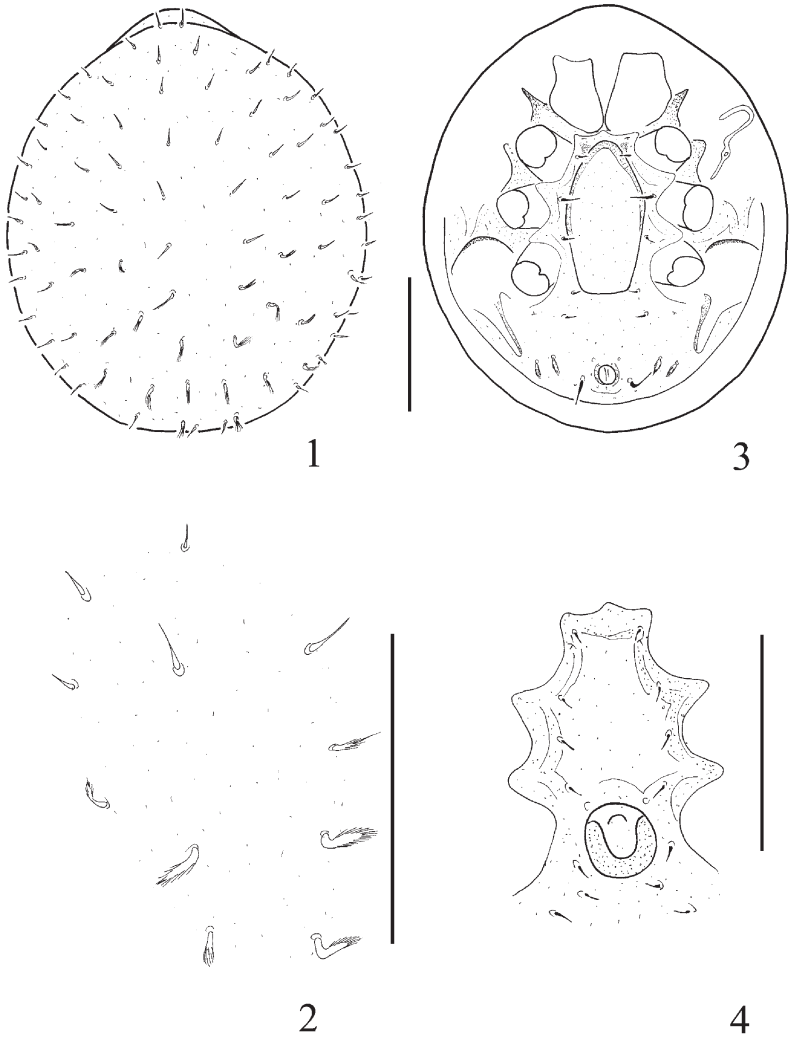
and V8, and setiform. One pair of lyriform fissures can be found near metapodal line and other pair near the anterior margin of sternal shield.

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

Genital shield scutiform, without pattern and without process on its apical margin.

Base of tritosternum narrow, laciniae not clearly visible (covered by coxae I).

Gnathosoma. All parts of gnathosoma not clearly visible. Visible parts (corniculi, internal malae and setae h1) typical for the genus.



1-4. *Rotundabaloghia brasiliensis* n. sp. 1 - holotype female, dorsal shield, 2 - dorsal setae, 3 - ventral view, 4 - paratype male, sternal region (scale bar: 100 μm)

Male. Length of idiosoma 290-300 µm, width 250-270 µm (n=6). Shape circular, posterior margin rounded.

Dorsal side. Ornamentation and chaetotaxy of dorsal shield as in female. Ventral side (Fig. 10). Five pairs of sternal setae can be found on it, St1-St4 on anterior region of genital shield, St5 placed near posterior margin of genital shield. V2 and V6 can be seen near St5. Position and form of setae V7, V8 and *ad* as in female.

Genital shield alveolar and placed between coxae IV.

Gnathosoma. Same as in the females.

Larvae and nymphs are unknown.

Etymology

The name of the new species refers to the country where the specimens were collected.

Notes

The new species belongs to the *woelkei*-species group (Hirschmann 1992b, Kontschán 2008). Only one species occurs (*R. woelkei*) in Brazil and eight other species were reported from other parts (Venezuela, Peru, Bolivia and Columbia) of South America. All of the species from this species group do not have pilosed V7 and V8 setae, therefore this character is unique by the members of this species group in South America.

***Rotundabaloghia gigantea* n. sp.**

(Figs 5-8)

Diagnosis

Sternal setae St1 and St4 short, smooth and needle-like, St2 and St3 setiform, wide and three times longer than St1 and St4. V2 and V6 short, smooth and needle-like. V7 and V8 three times longer than other ventral setae and pilosed. Setae *ad* as long as V7 and V8 and their margin smooth. Sternal, genital and ventral shields without ornamentation. Genital shield scutiform. Most of dorsal setae needle-like and smooth, but several dorsal setae on caudal region bear short hairs. Ornamentation on dorsal shield absent.

Material examined

Holotype: Female. BR92B35. Brazil, Serra do Mar, Carangatatuba National Park, 900–1000 m, from leaf litter 03.VI.1992. leg. J. Balogh. Paratypes: one female and one male. Locality and date the same as holotype.

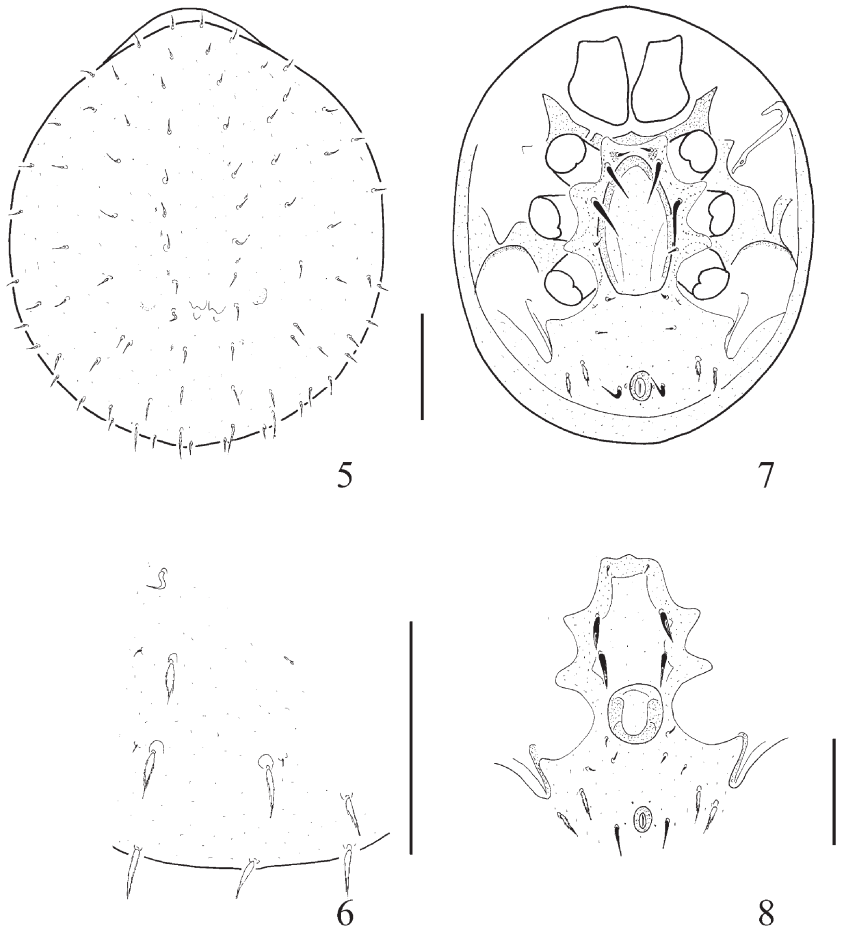
Description.

Female. Length of idiosoma 370-380 µm, width 320-330 µm (n= 2). Shape circular, posterior margin rounded.

Dorsal side (Fig. 5). Marginal and dorsal shields fused. Most of dorsal setae needle-like and smooth, but several dorsal setae on caudal region bear short hairs. Four

pairs of very short and needle-like setae can be found near the setae of row J (Fig. 6). Pattern of dorsal shield absent.

Ventral side (Fig. 7). Sternal and ventral shields without ornamentation. St1 and St4 short, smooth and needle-like, St2 and St3 setiform, wide and three times longer than St1 and St4. St1 placed near anterior region of genital shield, St2 near central region of coxae II, St3 near anterior margin of coxae III and St4 can be seen near the anterior margin of coxae IV. Ventral setae are as follows: V2 and V6 short, smooth and needle-like, V2 placed near the basis of genital shield. V7 and V8 three times longer than V2 and V6, their margin pilesed. Setae *ad* long, as long as V7 and V8, and setiform. One pair of lyriform fissures can be found between metapodal line and setaeV2.



5-8. *Rotundabaloghia gigantea* n. sp. 5 - holotype, female, dorsal shield, 6 - dorsal setae on caudal region, 7 - ventral view, 8 - paratype male, sternal region (scale bar: 100 μm)

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

Genital shield scutiform, without ornamentation and without process on its apical margin.

Base of tritosternum narrow, laciniae not clearly visible (covered by coxae I).

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

Male. Length of idiosoma 390 μm, width 340 μm (n=1). Shape circular, posterior margin rounded.

Dorsal side. Ornamentation and chaetotaxy of dorsal shield as in female. Ventral side (Fig. 8). St1 and St4 short, smooth and needle-like St2 and St4 three times longer than St1 and St4, wide, setiform and bear several spines on their margins. St5 absent. St1 placed near anterior margin of sternal shield, St2 near posterior margin of coxae II, St3 can be seen near central region of coxae III and St4 near posterior margin of genital shield. V2 and V6 can be found near setae St4. Position and form of setae V7, V8 and *ad* as in female.

Genital shield alveolar and placed between coxae IV.

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

Larvae and nymphs are unknown.

Etymology

This is relatively big *Rotundabaloghia* species; the name of the new species refers to the large size of the idiosoma.

Notes

This new species belongs to the *woelkei*-species group (Hirschmann 1992b, Kontschán 2008) too. This species is similar to the *R. brasiliensis* sp. n. The most important differences are the follows: setae St2 and St3 are long and wide in *R. gigantea*, the other species (*R. brasiliensis*) bears shorter and narrower St2 and St3. There are differences between the sizes of the specimens, the idiosoma of *R. gigantea* is more than 80 μm longer than in *R. brasiliensis.*

Rotundabaloghia traseri n. sp.

(Figs 9-12)

Diagnosis

Sternal setae St1 and St4 short, smooth and needle-like, St2 and St3 setiform, wide and four times longer than St1 and St4. V2 and V6 short, smooth and needle-like. V7 and V8 three times longer than other ventral setae and smooth. Setae *ad* 1.5 times shorter than V7 and V8 and smooth. Sternal, genital and ventral shields without ornamentation. Genital shield scutiform. Dorsal setae needle-like and bear short hairs on their apical part, ornamentation on dorsal shield maculate.

Material examined.

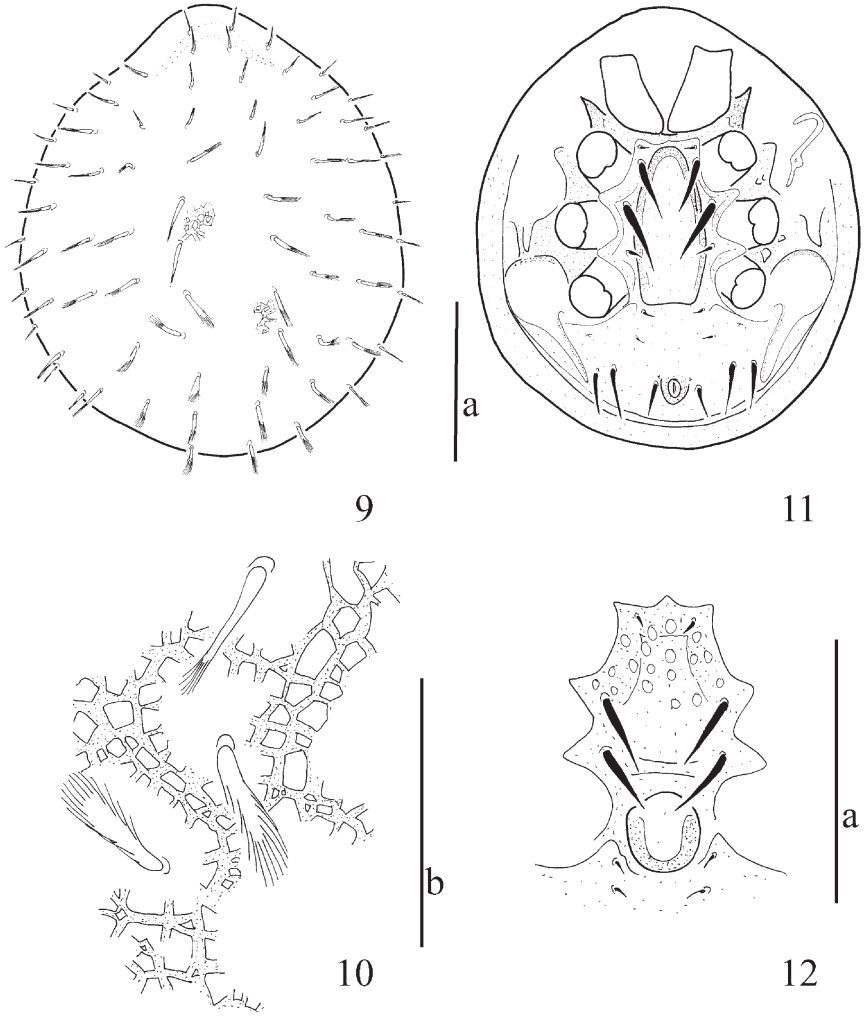
Holotype: Female. BR92B14. Brazil, Ilha San Sebastiana, forest in the town, from leaf litter, 29.V.1992. leg. J. Balogh. Paratypes: two females and three males. Locality and date the same as holotype.

DESCRIPTION.

Female. Length of idiosoma 260-270 μm, width 240-250 μm (n=3). Shape circular, posterior margin rounded.

Dorsal side (Fig. 9). Marginal and dorsal shields fused. All of dorsal setae bear short hairs on their apical part. Pattern of dorsal shield maculate (Fig. 10).

Ventral side (Fig. 2). Sternal and ventral shields without ornamentation. St1 and St4 short, smooth and needle-like, St2 and St3 setiform, wide and three times longer than St1 and St4. St1 placed near anterior region of genital shield, St2 near anterior margin of coxae II, St3 near anterior margin of coxae III and St4 can be seen near the anterior



9-12. *Rotundabaloghia traseri* n. sp. 9 - holotype, female, dorsal shield, 10 - dorsal setae and dorsal ornamentation, 11 - ventral view, 12 - paratype male, sternal region (scale bar: a: 100 μm, b: 50 μm)

margin of coxae IV. Ventral setae are as follows: V2 and V6 short, smooth and needle-like, V2 placed near the basis of genital shield. V7 and V8 three times longer than V2 and V6, their margin smooth. Setae *ad* long, as long as V7 and V8, and setiform. One pair of lyriform fissures can be found near metapodal line.

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

Genital shield scutiform, without ornamentation and without process on its apical margin.

Base of tritosternum narrow, laciniae not clearly visible (covered by coxae I).

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

Male. Length of idiosoma 290-300 μm, width 240-250 μm (n=3). Shape circle, posterior margin rounded.

Dorsal side. Ornamentation and chaetotaxy of dorsal shield as in female. Ventral side (Fig. 10). Sternal shield with alveolar ornamentation. St1 and St4 short, smooth and needle-like St2 and St4 four times longer than St1 and St4, wide, setiform and smooth. St5 absent. St1 placed near anterior margin of sternal shield, St2 near anterior margin of coxae III, St3 can be seen near posterior margin of coxae III and St4 posterior margin of genital shield. V2 can be found near setae St4. Position and form of setae V7, V8 and *ad* as in female.

Genital shield alveolar and placed between coxae IV.

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

Larvae and nymphs are unknown.

Etymology

The name of the new species is dedicated to the author's friend, Dr. György Traser, a springtail specialist.

Notes

The ornamentation of the dorsal shield is unique in the genus *Rotundabaloghia*, all known species of the genus bear alveolar or dotted ornamentation, or the pattern is lacking from the dorsal shield.

KEY TO THE BRAZILIAN *ROTUNDABALOGHIA* SPECIES

1. Ventral shield with ornamentation ……..……. 2.
–. Ventral shield without ornamentation ….....……. 3.
2. Sternal setae short ..... *R. guttaseta* (Hirschmann, 1972)
–. Sternal setae long ..... *R. unguiseta* (Hirschmann, 1972)
3. Genital shield of female and sternal shield of male ornamented ….....…….. 4.
–. Genital shield of female and sternal shield of male smooth ……..……..…… 6.
4. V9 setae present ..... *R. hexaunguiseta* Hirschmann, 1992
–. V9 setae absent ……..……..…… 5.
5. V2, V6,V7, V8 and ad short ..... *R. rotunda* (Hirschmann, 1973)
–. V2, V6,V7, V8 and ad long ……..……. 6.
6. Margin of setae V7 and V8 smooth ….....…. 7.

–. V7 and V8 setae pilosed ……..…….…….…….. 8.
7. Genital shield of female narrower (length : width= 3:1), steral shield of male smooth ..... *R. woelkei* Hirschmann, 1981
–. Genital shield of female wider (length : width= 3:1,5), sternal shield of male with ornamentation ..... *R. traseri* n. sp.
8. St2 and St3 wide and long ..... *R. gigantea* n. sp.
–. St2 and St3 narrow and short ..... *R. brasiliensis* n. sp.

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