

## *Rotundabaloghia browni* spec. nov., a new uropodine mite from Ivory Coast

(Acari, Mesostigmata, Uropodina, Uropodidae)

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One new species, *Rotundabaloghia browni* spec. nov., is described and illustrated from Ivory Coast. A key is provided for the known species of *Rotundabaloghia* that are known from West Africa.

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### Introduction

The genus *Rotundabaloghia* Hirschmann, 1975 is one of the richest Uropodina genera in the tropical regions (Wiśniewski 1993). Species of this genus occur in soils, mosses and leaf litter, and they are members of the canopy fauna as well. Currently, the genus contains more than one hundred species from all around the world (Wiśniewski & Hirschmann 1993; Kotschán 2004, 2005, 2006, 2007, 2008a), however our knowledge on the *Rotundabaloghia* species of the tropical regions is highly unbalanced.

The first *Rotundabaloghia* species were presented from West Africa by Hirschmann (1984), who described four new species from Cameroon, three of them from Mt. Koupe (*R. africanaguttaseta* Hirschmann, 1984, *R. daelei* Hirschmann, 1984 and *R. perstructura* Hirschmann, 1984) and one of them from Mount Oku (*R. camerunis* Hirschmann, 1984). Some years later Hirschmann (1992a) described nine new species from this region. Three species (*R. endroedyi* Hirschmann, 1992, *R. ghanaensis* Hirschmann, 1992 and *R. kintampoensis* Hirschmann, 1992) were found in Ghana, five species (*R. bueaensis* Hirschmann, 1992, *R. campanellae* Hirschmann, 1992,

*R. campanellasimilis* Hirschmann, 1992, *R. masoumbouensis* Hirschmann, 1992 and *R. masoumbouoides* Hirschmann, 1992) from Cameroon and one species (*R. congoensis* Hirschmann, 1992) from Republic of Congo. Recently Kotschán (2008b) presented a new record of *R. congoensis* from Republic of Congo. The species of the genus *Rotundabaloghia* are unknown from the other West African countries. Present paper consists of the first record of the genus in Ivory Coast with the description of a new species.

### Materials and methods

Specimens were cleared in lactic acid and later 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 (HNHM), Budapest and in the Section Arthropoda varia of Zoologische Staatssammlung München (ZSM). The nomenclature and the abbreviations follow Kotschán'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).

*Rotundabaloghia browni*, spec. nov.  
(Figs 1-6)

**Diagnosis.** Dorsal, ventral, genital shields of female and sternal shield of male ornamented by alveolar sculptural pattern. Dorsal setae pilose distally, brush-like, sternal setae smooth, st2 and st3 longer than st1 and st4. Ventral setae V2, V6 and ad smooth, V7 and V8 pilose apically. Peritreme V-form.

**Material examined.** Holotype: Female. Ivory Coast, Nzi Noua, N. of Ndouci, degradate forest, from decayed tree, 13.01.1977, leg. W. L. & D. E. Brown (HNHM). Paratypes: female (ZSM) and male (HNHM). Locality and date same as in holotype.

**Description**

**Female.** Length of idiosoma 370 µm, width 310 µm (n=2). Shape subcircular, posterior margin rounded.

Dorsal side (Fig. 1). All of dorsal setae bear short hairs on their margins and dorsal shield bear alveolar ornamentation (Fig. 2).

Ventral side (Fig. 3). Sternal shield without ornamentation, all of sternal setae smooth and needle-like. St1 and St4 three times shorter than St2 and St3. St1 placed near anterior margin of genital shield, St2 can be seen near inner margin of coxae III. St3 and St4 can be found near inner margin of coxae IV. Ventral setae V2 and V6 smooth and needle-like, V2 placed near the posterolateral corners of genital shield. Margins of V7 and V8 bear short hairs. V7, V8 and V6 placed near the metapodal line. Setae ad long, as long as V7 and V8, and needle-like. Sculptural pattern of ventral shield alveolar. Stigmata situated at the level of coxae II-III. Peritreme V-shaped. Genital shield scutiform, with alveolar pattern on surface, and without process on its anterior margin. Base of tritosternum narrow, laciniae smooth and subdivided into three branches.

Gnathosoma (Fig. 5). All part of gnathosoma not clearly visible. Observable structures (corniculi, internal malae and setae h1) typical for the genus. Palp trochanter with two smooth setae, other setae of the palp smooth and simple.

Legs. All legs with a pair of ambulacral claws and with smooth simple setae.

**Male.** Length of idiosoma 370 µm, width 310 µm (n=1). Shape subcircular, posterior margin rounded.

Dorsal side. Ornamentation and setation of dorsal shield as in female. Ventral side (Fig. 10). Sternal region with five pairs of smooth and needle-like setae, St1-St4 with anterior position to genital operculum, and st5 with posterior position to operculum. Position and form of setae V2, V6, V7, V8 and ad as for female. Genital operculum alveolar and placed between coxae IV.

Gnathosoma and legs. Same as in the females.

Larvae and nymphs are unknown.

**Etymology.** I dedicate the new species to W. L. & D. E. Brown, who collected the specimens in Ivory Coast.

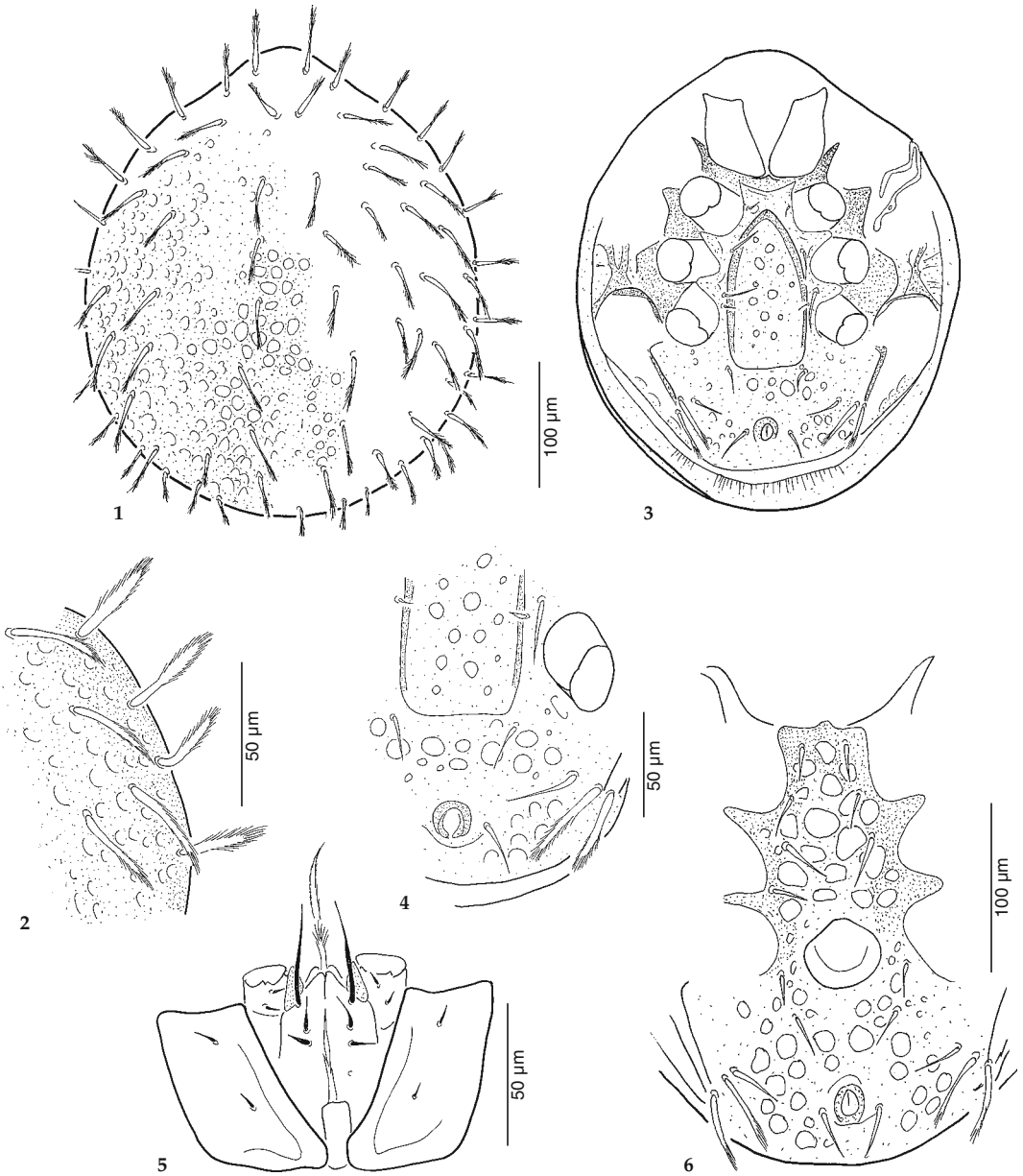
**Notes.** The new species belongs to the *mahunikai*-species group established by Hirschmann (1992b). Only three species (*Rotundabaloghia campanellae*, *R. ghanaensis* and *R. rwandae*) occur in West and Central Africa from this group. The most important differences between the most similar species are shown in Table 1.

**Key to the West African *Rotundabaloghia* species**

- 1. Ventral shield ornamented .....2
  - Ventral shield without ornamentation..... 5
- 2. Genital shield of female ornamented .....3
  - Genital shield of female without ornamentation ..... 4
- 3. Setae V6, V7 and V8 pilose .....
  - Rotundabaloghia masoumbouoides* Hirschmann, 1992 (Cameroon)
  - Setae V6, V7 and V8 smooth .....
    - Rotundabaloghia congoensis* Hirschmann, 1992 (Republic of the Congo)

**Table 1.** Main differences between *Rotundabaloghia campanellae*, *R. ghanaensis* and *R. browni*.

		<i>R. campanellae</i>	<i>R. ghanaensis</i>	<i>R. browni</i> spec. nov.
	Peritreme	Mushroom-form	V-form	V-form
Females	Genital shield	With anterior process	(only the male known)	Without anterior process
Males	st1	Reach to basis of st2	Reach to basis of st2	Not reach to basis of st2
	st3	Reach to anterior margin of operculum	Reach to anterior margin of operculum	Not reach to anterior margin of operculum



**Figs 1-6.** *Rotundabaloghia browni* spec. nov. (holotype, female) 1. dorsal view of idiosoma; 2. marginal dorsal setae and sculptural ornamentation; 3. ventral view of idiosoma; 4. ventral setae and sculptural ornamentation; 5. ventral view of gnathosoma; 6. sternal and ventral regions of paratype male (scale: a = 100 µm, b = 50 µm).

- |  |  |   |
|--|--|---|
| 4. Setae V7 pilose, V6 and V8 smooth.....                            | 5. Setae V6, V7 and V8 smooth .....      | 6 |
| <i>Rotundabaloghia camerunis</i> Hirschmann, 1984<br>(Cameroon)      | - One pair of ventral setae pilose ..... | 9 |
| - Setae V6, V7 and V8 pilose .....                                   | 6. Sternal setae long.....               | 7 |
| <i>Rotundabaloghia masoumbouensis</i> Hirschmann,<br>1992 (Cameroon) | - Sternal setae short .....              | 8 |

7. St5 and V2 shorter than V6.....  
*Rotundabaloghia campanellasimilis* Hirschmann,  
 1992 (Cameroon)
- St5 and V2 as long as V6.....  
*Rotundabaloghia kintampoensis* Hirschmann,  
 1992 (Ghana)
8. V7 longer than V6 and V8, anal region sculptured.....  
*Rotundabaloghia daelei* Hirschmann,  
 1984 (Cameroon)
- V7 as long as V8 and V6, circumanal ornamentation absent.....  
*Rotundabaloghia endroedyi* Hirschmann, 1992  
 (Ghana)
9. At most one pair of ventral setae pilose.....  
*Rotundabaloghia africaguttaseta* Hirschmann,  
 1984 (Cameroon)
- At least two pairs of ventral setae pilose..... 10
10. V6 smooth..... 11
- V6 pilose ..... 13
11. Peritreme mushroom-like.....  
*R. campanellae* Hirschmann, 1992 (Cameroon)
- Peritreme V-form..... 12
12. St1 reaching to basis of st2.....  
*Rotundabaloghia ghanaensis* Hirschmann, 1992  
 (Ghana)
- St1 not reaching to basis of st2.....  
*Rotundabaloghia browni* spec. nov. (Ivory Coast)
13. V2 placed near central region of operculum.....  
*Rotundabaloghia bueaensis* Hirschmann, 1992  
 (Cameroon)
- V2 placed near the posterior margin of operculum.....  
*Rotundabaloghia perstructura* Hirschmann, 1984  
 (Cameroon)

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