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New species of *Allonothrus* from Costa Rica (Acari: Oribatida: Trhypochthoniidae)

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ABSTRACT. *Allonothrus longinoi* n. sp. is described from Costa Rica. The comparison of important morphological characters with all known Neotropical species is presented.

Key words: acarology, taxonomy, morphology, new species, Acari, Oribatida, Trhypochthoniidae, Neotropical Region

INTRODUCTION

The genus *Allonothrus* VAN DER HAMMEN, 1953 comprises 14 described so far species (SUBÍAS 2004). It could be distinguished from related genera by the following combination of characters: 15 pairs of notogastral setae (f_1 absent); number of genital setae variable (even within species), fluctuate from 9 to 13; aggenital setae absent; two pairs of anal setae; three pairs adanal setae; tarsi with one or three claws. In 1958 BALOGH created the genus *Pseudonothrus*, later (MAHUNKA 1985) recognised as conspecific with *Allonothrus*.

BADEJO et al. (2002) described two subsequent closely related species from Brazil and Nigeria which he classified as members of the new genus (*Parallonothrus*) belonging to the described by them new family (Parallonothridae) mostly by possesing the nondeficient setation on notogaster (setae f_1 present). In the opinion of authors of the present article the legitimacy of the distinguish of both mentioned taxa demands further research and will be an object of the following elaboration.

All described species of *Allonothrus* live in the Ethiopian, Oriental, Australian and Neotropical regions. Four species (*Allonothrus foveolatus*, *A. neotropicus*, *A. russeolus*, *A. tuxtlasensis*) have been so far recorded from the Neotropical region. Below we present a description of a new species of *Allonthrus* found in tropical forest in Costa Rica.

***Allonothrus longinoi* n. sp.**

DESCRIPTION

Body length: 520 µm; maximum body width: 270 µm. Colour: light brown to brown. Body flatenned dorso-ventrally (maximum height about 200 µm).

Prodorsum (Figs 1-7)

Rostrum rounded. All prodorsal setae (Figs 1, 4-7) barbed and rigid. Rostral setae (*ro*) setiform, tapering and curved medially (length 40 µm). Lamellar setae (*le*) bacilliform, long (length 110 µm). Interlamellar setae (*in*) bacilliform, very short, about 10 mm long, not visible in lateral view (not stand besides bothridia). Bothridia cylindrical. Sensilli (*ss*) narrowly clavate, serrated distally (Fig. 7). Exobothridial setae absent. Surface of prodorsum punctate with paired swellings anterior to bothridia, ending laterally to bases of lamellar setae. Central region delimited posteriorly by slightly curved contour joining bases of interlamellar setae. A nearly circular depressed area present in the middle of prodorsum, slightly anterior to setae *in*. Pair of apparent ridges present in median part of bearing postero-laterally from the bases of lamellar setae to bothridia.

Notogaster (Figs 1-3, 8-12)

Notogaster bottle-shaped, lateral margins tapered in posterior part (ca. 185 µm) and expand posteriorly to 270 µm. Posterior margin slightly rounded. 15 pairs of dorsal setae present (setae f_1, and their apophyses absent). Notogastral setae heterogeneous in shape and size, bacilliform to setiform, blunt, rounded or widened distally, with fine, dense barbs on their convex surface; only setae ps_2 and ps_3 pointed. Posterior setae distinctly elongated. Very long setae e_1, three times longer than d_1; setae d_2 shorter and thinner than d_1. Length of dorsal setae: c_1 - 40 µm, c_2 - 30 µm, d_1 - 50 µm, d_2 - 40 µm, e_1 - 200 µm, h_1 - 130 µm, h_2 - 90 µm, h_3 - 120 µm. Notogastral surface mostly reticulate, formed by polygonal or irregular foveolae. Lateral ornamentation consist of small tubercles. An unpaired oval cavity sharply defined on the terminal part of the notogaster (between setae h_1 and ps_1), border appears darker in dorsal view, this cavity serves for origin of group of muscles associated with anal plates. Latero-opisthosomatic gland distinctly developed.

Ventral region (Fig. 2)

Epimeral setae formula: 3-1-3-3. Anal and genital shields similar in length. Genital plates with 13 setae; each narrow anal plate with two setae, adanal plate with three setae. Genital setae and all adanal setae ciliate, anal setae smooth. Lyrifissures *ips*, *iad* and *ian* in normal position.

Legs (Figs 13-16)

Tarsi tridactylous, claws smooth. Leg setation (including famulus): I: 1-6-4(1)-6(2)-15(3), II: 1-7-5(1)-5(1)-14(2), III: 2-4-3(1)-4(1)-12, IV: 1-3-3-4(1)-12.

MATERIAL EXAMINED

The holotype (adult female) was collected from: Costa Rica, Prov. Cartago, Reventazon Gorge, coll. T.B. WOOLLEY, XI-10-1980. It is deposited in the Field Museum of Natural History, Chicago, USA.

ETYMOLOGY

This species is named in honour of Prof. John T. LONGINO, a prominent entomologist, persistent explorer of the fauna of Costa Rican tropical forests.

Table 1. Comparison of selected morphological characters of Neotropical species of *Allonothrus*

Character	***A. foveolatus***	***A. neotropicus***	***A. russeolus***	***A. tuxtlasensis***	***A. longinoi***
body length (µm)	650-720	617-658	532-618	582	520
setae e_1	the same length as d_1	half longer than d_1	the same length as d_1	twice longer than d_1	three times longer than d_1
	the same length as half distance between setae e_1-h_1	as long as half distance between setae e_1-h_1	considerably shorter than half distans between setae e_1-h_1	the same length as distance between setae e_1-h_1	twice longer than distance between setae e_1-h_1
setae d_2	the same length as d_1	the same length as d_1	the same length as d_1	half longer than d_1	half shorter than d_1
oval cavity on the terminal part of the notogaster	absent	absent	absent	absent	present
shape of notogaster	rectangular	trapezoidal, widened posteriorly	trapezoidal, slightly widened posteriorly	oval	bottle-shaped, lateral margins tapered in posterior part
surface of setae ad_1 and ad_2	smooth	ciliate	smooth	ciliate	ciliate

DISCUSSION

Allonothrus longinoi n. sp. possesses the typical set of morphological characters distinguishing it from the other Neotropical species of the genus (Tab. I) including mostly related to it *A. tuxtlasensis* PALACIOS-VARGAS et IGLESIAS described from Mexico. Typical for *A. longinoi* characters are as follows: (1) small measurements of the body (length ca. 520 µm), (2) body distinctly flattened, (3) notogaster bottle-shaped, (4) oval cavity sharply defined on the terminal part of the notogaster, 5) very long setae e_1, 6) notogastral setae heterogeneous in size, hovewer, not according to the rule observed in *A. neotropicus* and *A. tuxtlasensis*, (posterior setae of notogaster are relatively longer than anterior (BALOGH & MAHUNKA 1969, PALACIOS-VARGAS & IGLESIAS 1997)), in *A. longinoi* setae e_1 are longer than h_1 and ps_1, and setae d_2 are relatively shorter and thiner than d_1 and c_1.

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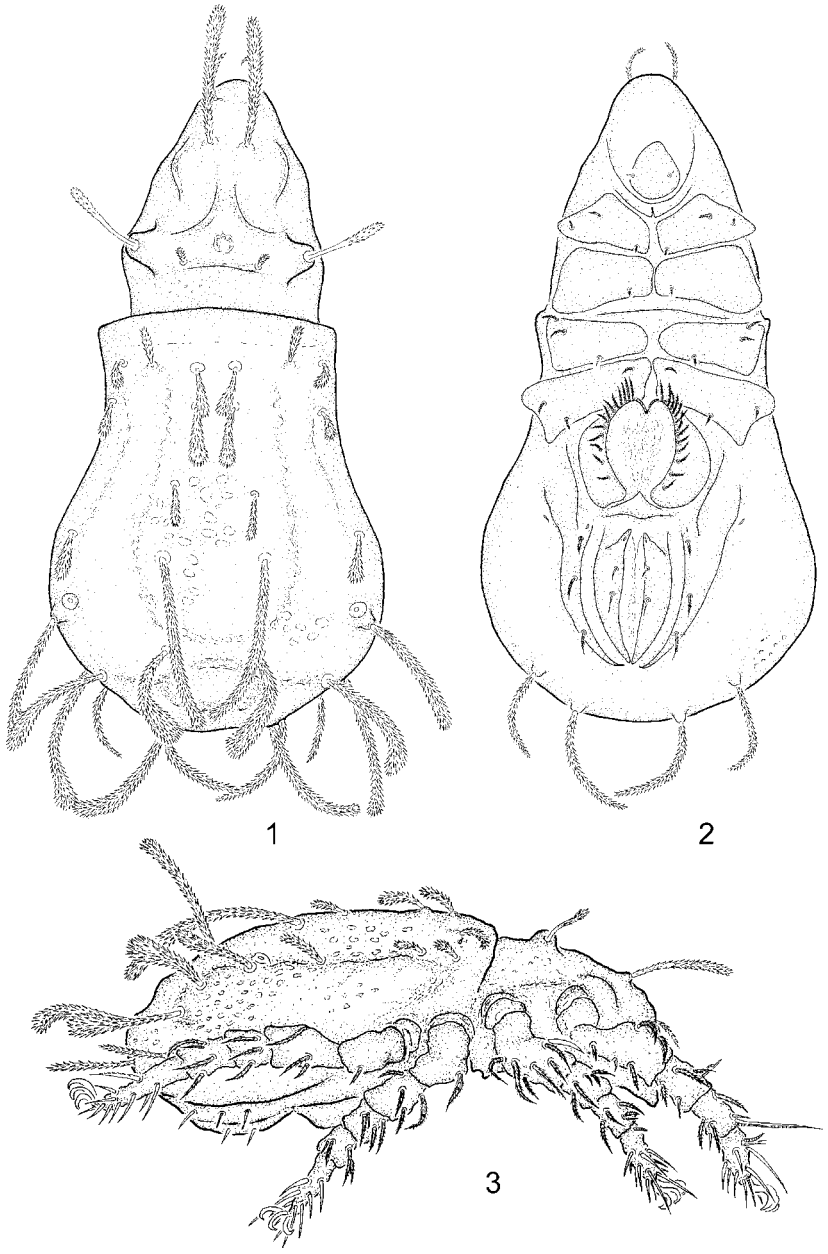
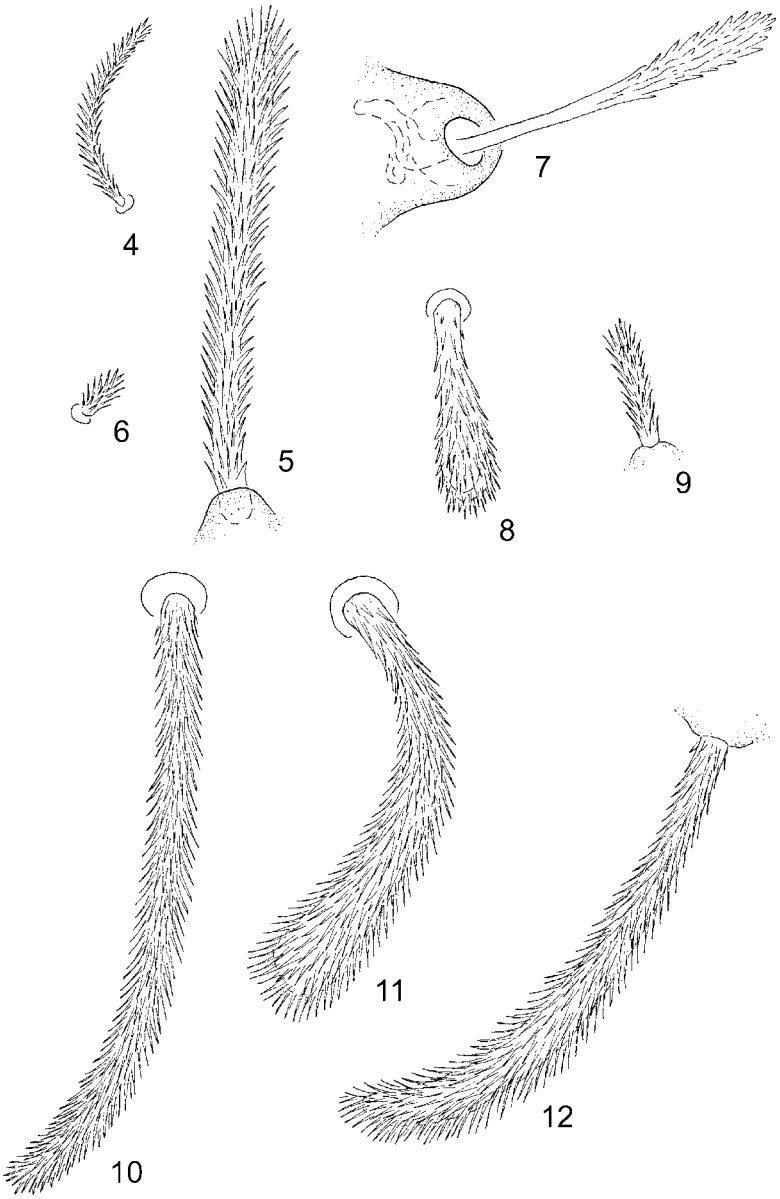
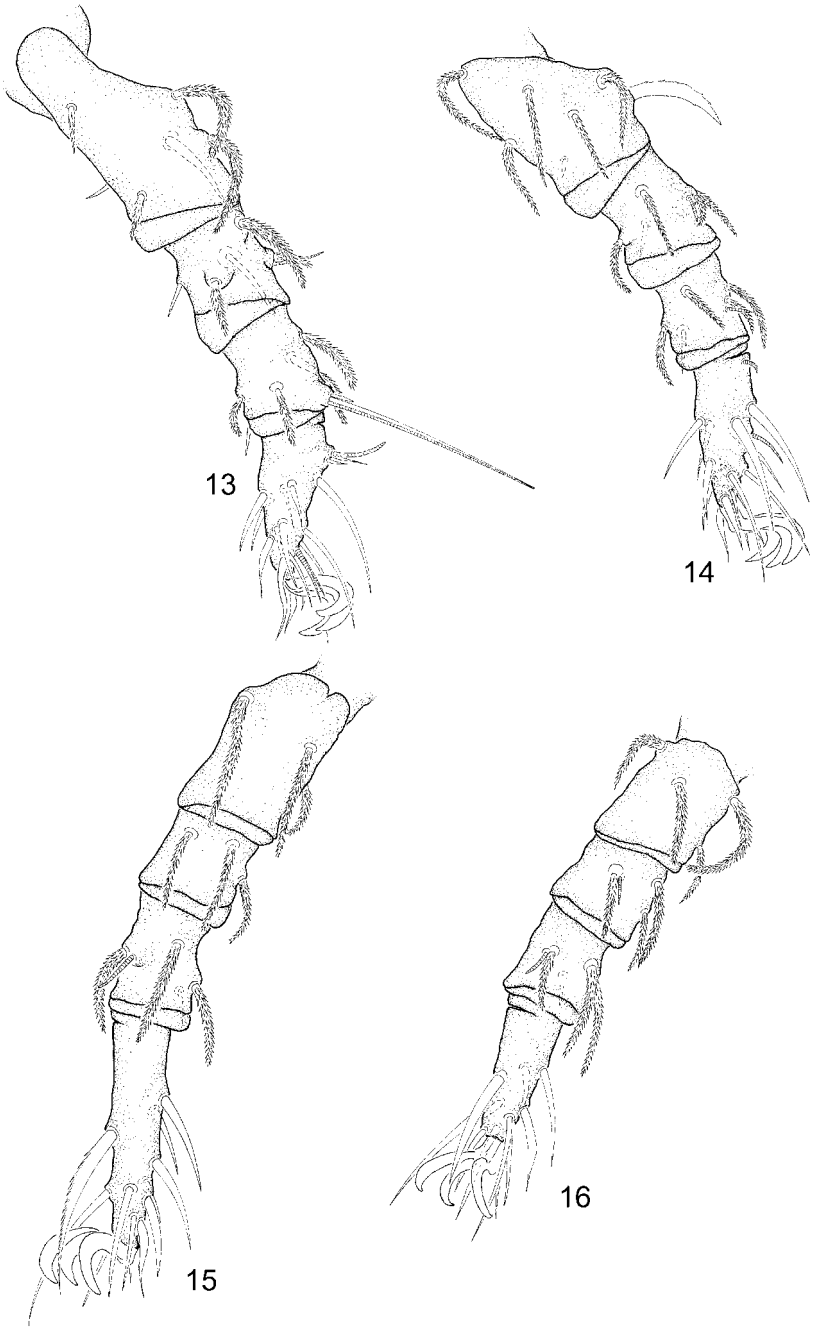


1-3. *Allonothrus longinoi* n. sp.: 1 - holotype, dorsal aspect, 2 - holotype, ventral aspect, 3 - holotype, lateral aspect



4-12. *Allonothrus longinoi* n. sp., holotype, dorsal aspects: 4 - seta ro; 5 - seta le; 6 - seta in; 7 - trichobothrium; 8 - seta c1; 9 - seta c2; 10 - seta e1; 11 - seta h1; 12 - seta ps1



13-16. *Allonothrus longinoi* n. sp., holotype, legs: from femur to tarsus, antiaxial aspect: 13 - leg I, 14 - leg II, 15 - leg III, 16 - leg IV