Genus	Vol. 17(4): 621-626	Wrocław, 28 XII 2006

Nothrus piriformis a new crotonioid mite from Ecuador (Acari: Oribatida: Nothridae)

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ABSTRACT. The oribatid mite *Nothrus piriformis* sp. n. from Ecuador is described and illustrated. The new species differs morphologically from the most similar species *Nothrus willmanni* MAHUNKA, 1983 and *N. madagascarensis* MAHUNKA, 2000 especially by its narrower notogastral setae, their position and by a pear-shaped notogastral plate.

Key words: acarology, taxonomy, new species, *Acari*, *Oribatida*, *Nothridae*, Ecuador, Neotropical Region.

INTRODUCTION

The moss-mite genus *Nothrus* (Oribatida: Crotonioidea: Nothridae) occur in the whole world excluding the Antarctic Region. Only 12 species have been described from the Neotropical region so far (SUBÍAS 2004). In this paper a new species is described and compared to similar representatives of the genus.

The present paper is a part of the study on the crotonioid mite fauna of Ecuador, based on the results of the circumtropical collecting program launched in 1963 by Prof. J. BALOGH. He and his co-workers concentrated the collecting partly in the Andes mountain range, partly in Amazonian Basin. They endeavoured to collect in all vegetation zones and these collectings were extended with the aim to visit every country in South America, particularly Ecuador (BALOGH 1988, 1989; KUTY 2005, 2006).

Several collecting expeditions (during 10 years) in the Galápagos Islands were carried out by Prof. H. SCHATZ. Among 202 oribatid species, which were

encountered from these Ecuadorian islands, there were only two nothrid species: *Nothrus biciliatus* C. L. KOCH, 1844 and *N. oblongus* HAMMER, 1961 (SCHATZ 1998).

MATERIAL AND METHODS

The description presented is based on the material from the Basle Natural History Museum, Switzerland. All samples were collected by Prof. A. ZICSI and Dr. I. LOKSA from provinces Pichincha and Cotopaxi in Ecuador.

Six specimens of *Nothrus piriformis* sp. n. were found in 5 samples. The mites were preserved in 75% ethanol and cleared in lactic acid. The reference material – holotype and two paratypes – is stored in the Basle Natural History Museum, Switzerland and two paratypes in the collection of Dr. Ziemowit OLSZANOWSKI (Department of Animal Taxonomy and Ecology, A. Mickiewicz University, Poznań, Poland).

One specimen was examined with a scanning electron microscope in Electron and Confocal Microscope Laboratory, A. Mickiewicz University, Poznań, Poland. Specimen was mounted on stubs with double-sided stickytabs, coated with gold in Balzers SPC 050 ion coater, and observed in Philips 515 scanning electron microscope.

Nothrus piriformis sp. n.

ETYMOLOGY

Named after its pear-shaped notogastral plate.

TYPE MATERIAL

Holotype: Between Tandapi and Toachi, 15 km to Toachi, stream confluent with Rio Pilatón, 2 650 m – 19.II.1986 – litter and soil below shrubs, growing 30 m above the stream level.

Paratypes: Pululagua crater and its surroundings, "Midad del Mundo" /Prov. Pichincha/ – 12.II.1986 – eroded hollow in the direction of Midad del Mundo, moss under bushes growing on the sides of the hollow. Between Tandapi and Toachi, 15 km to Toachi, stream confluent with Rio Pilatón, 2 650 m – 19.II.1986 – somewhat farther from the stream, forest patch without reeds, litter and soil; forest patch, moss and soil from rocks. Cotopaxi National Park /Prov. Cotopaxi/ – 26.II.1986 – dried out big tussocks from closed forest stand.

DIAGNOSIS

Nothrus piriformis sp. n. is similar to the Guatemalan species *N. willmanni* MAHUNKA, 1983 and Madagascan *N. madagascarensis* MAHUNKA, 2000. All species are monodactyle, with long, smooth and sharper sensilli. Their notogastral setae are quite similar in length. However, *N. piriformis* sp. n. has a pear-shaped notogastral plate, narrower setae and h_1 placed above h_2 (*N. madagascarensis* has

both pairs placed on the same level). Unlike *N. willmanni*, new species has setae *in* similar to *le*, sensilli longer than distance between their bases and shorter setae p_1 are clavate (Table 1).

DESCRIPTION

Adult (Figs 1-16)

Body length: 860-920 µm (holotype: 875 µm), body width: 450-490 µm (holotype: 470 µm); colour: brown.

Anterior and posterior part of prodorsal surface covered with small and dense round pits, central part with pits of various size. Setae *ro* crenate and slightly bent medially, half shorter than distance between them, originating on tubercles. Setae *le* similar to *ro* but one and a half times longer, originating on apophyses. Setae *in* similar to *le*. Sensilli longer than overall distance between their bases, tapering and sharper on the ends. Setae *ex* setiform, twice shorter than *ro*. Notogaster pear-shaped. One pair of distinct folds of thickened cuticle running along the plate, from setae $c_1 - c_2$ and connecting beyond f_1. Surface of central part of plate between folds covered with pits of various size, marginal parts with small pits. Sixteen pairs of crenate, setae present, hardly discernible. Setae c_2 placed between c_1 and c_3 with same distance to c_1 and c_3. All notogastral setae similar in length, except c_2, p_3 and h_2. Setae c_2 and p_3 half shorter than c_1, h_2 not shorter than distance $h_2 - p_1$, lobate, with irregular rims. Setae p_1 clavate, with irregular rims, with distinctly branched caves. Oval opening of opisthosomal gland (*gla*) situated below setae f_2. Ventral region: Epimeral setation: 6-6-5-5. Genital plates with 9 pairs of setiform setae. Two pairs of anal and 3 pairs of adanal short setae. All legs monodactylous (setation not studied).

Table 1. Comparison of morphological characters of *Nothrus piriformis* n. sp., *N. willmanni* and *N. madagascarensis* (based on MAHUNKA 1983, 2000 and present studies).

Character	*N. piriformis* sp. n.	*N. willmanni*	*N. madagascarensis*
Body length	860-920 µm	800-854 µm	678-734 µm
Body width	450-490 µm	402-446 µm	360-388 µm
Setae *ro*	$ro = ½$ (*ro-ro*)	$ro < ½$ (*ro-ro*)	$ro > ½$ (*ro-ro*)
Setae *le*	$le > ro$, narrow	$le > ro$	$le = ro$, phylliform
Setae *in*	$in = le$	$in = 3le$	$in = 3le$
Setae *c*	$c_1 = c_3 = 2c_2$; $(c_1\text{-}c_2) = (c_2\text{-}c_3)$	$c_1 > c_3$, $c_1 = 3c_2$; $(c_1\text{-}c_2) < (c_2\text{-}c_3)$	$c_1 > c_3$, $c_1 = 3c_2$; $(c_1\text{-}c_2) > (c_2\text{-}c_3)$
Setae *h*	$h_2 \geq 2h_1$; h_1 placed above h_2	$h_2 = 2(3)h_1$; h_1 placed above h_2	$h_1 > ½\ h_2$; on one level
Epimeral setation	6-6-5-5	7-6(5)-6(5)-6	9(8)-5-5-6

ACKNOWLEDGEMENTS

Author would like to thank Dr. Ziemowit OLSZANOWSKI and Łukasz KACZMAREK (Department of Animal Taxonomy and Ecology, A. Mickiewicz University, Poland) for help and valuable advice, Prof. S. MAHUNKA (Zoology Department, Hungarian Natural History Museum, Budapest, Hungary) for providing access to the specimens and the curator of the Basle Natural History Museum, Switzerland for loaned material.

REFERENCES

BALOGH, P., 1988. Oribatid mites from Ecuador (Acari). Acta Zool. Hung., **34**: 321-338.

—, 1989. Oribatid mites from Ecuador (Acari) II. Acta Zool. Hung., **35**: 17-28.

KUTY, M., 2005. The morphology of juvenile stages of *Crotonia pulcher* (BECK, 1962) (Acari: Oribatida: Crotonioidea) with a redescription of the adult. Zool. Anzeig., **244**: 125-136.

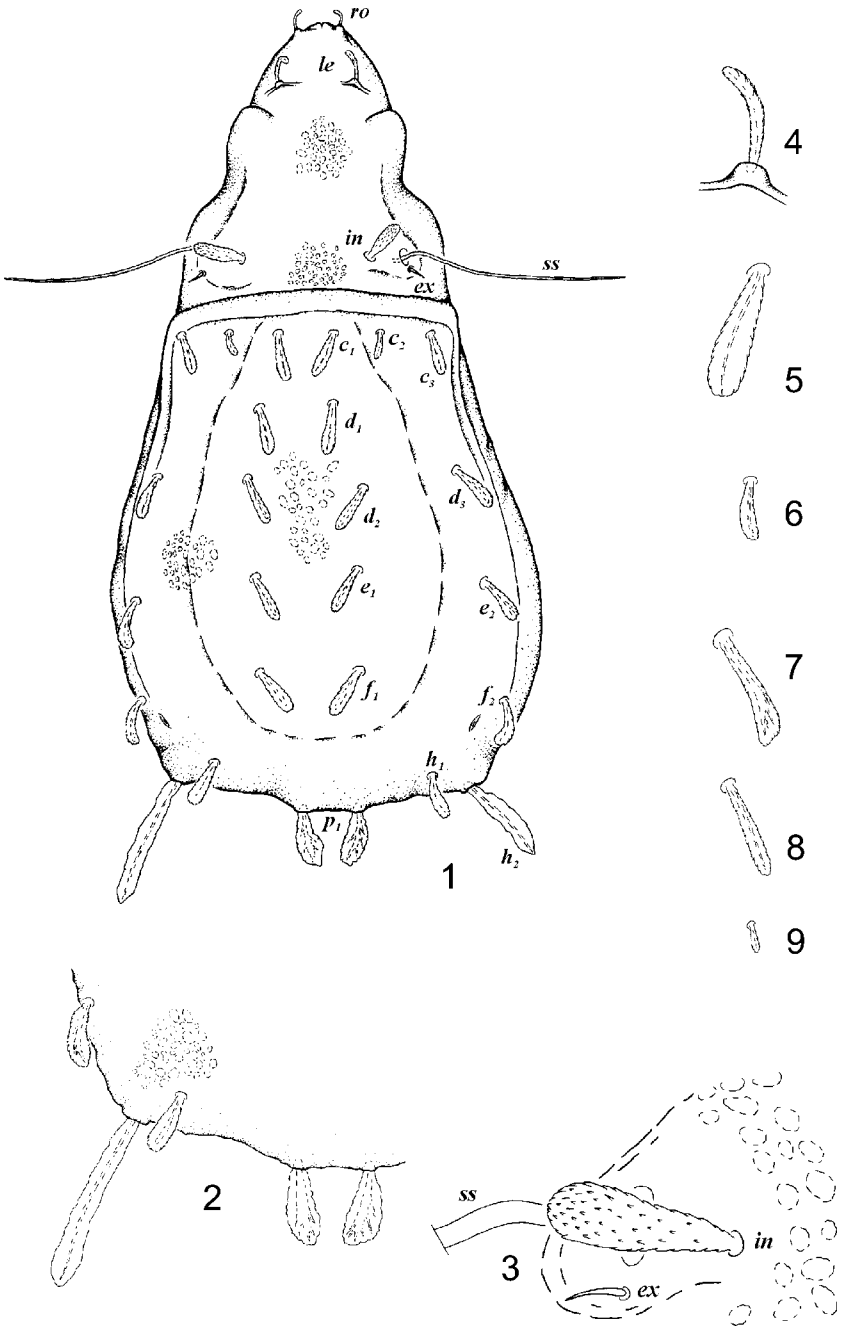
—, 2006. A new species of the genus Holonothrus from Ecuador (Acari: Oribatida: Crotoniidae). Genus, Wrocław, **17**: 307-310.

MAHUNKA, S., 1983. Neue und interessante Milben aus dem Genfer Museum XLVII. Oribatida Americana 7: Guatemala II (Acari). Rev. Suisse Zool., **90**: 709-724.

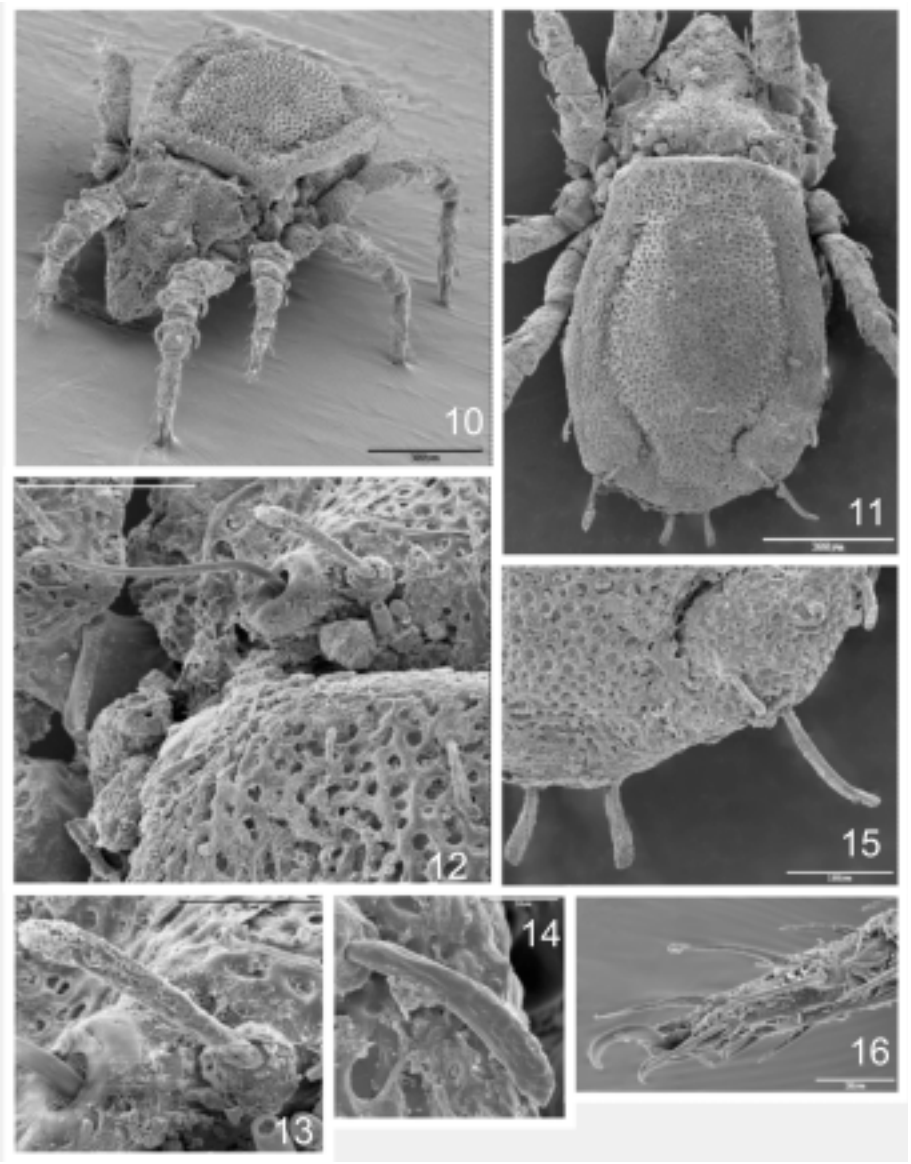
—, 2000. Oribatid mites (Acari: Oribatida) from Madagascar IV: new Nothrus and Damaeolus species. Folia Entomol. Hung., **61**: 21-25.

SCHATZ, H., 1998. Oribatid mites of the Galápagos Islands – faunistics, ecology and speciation. Experimen. Appl. Acarol., **22**: 373-409.

SUBÍAS, L.S., 2004. Listado Sistemático, Sinonímico Y Biogeográfico De Los Ácaros Oribatidos (Acariformes: Oribatida) Del Mundo (1758-2002). Graellsia, **60** (número extraordinaro): 3-305.



1-9. *Nothrus piriformis* n. sp., adult: 1 - dorsal view, 2 - lateral setae, 3 - enlarged region of sensillus, 4 - seta *le*, 5 - seta c_1, 6 - seta c_2, 7 - seta h_3, 8 - seta p_2, 9 - seta p_3



10-16. *Nothrus piriformis* n. sp., adult: 10 - anterodorsal view, 11 - dorsal view, 12 - region of sensillus and setae *c*, 13 - seta *in*, 14 - seta c_3, 15 - posterior notogastral setae, 16 - tarsus II with one claw