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M. Ahaniazad, M. Bagheri. A new species of the genus *Molothrognathus* Summers and Schilinger (Acari: Trombidiformes: Caligonellidae) from Iran. *Acarologia*, 2012, 52 (4), pp.373-376. 10.1051/ac-arologia/20122066 . hal-01567102

HAL Id: hal-01567102

<https://hal.science/hal-01567102>

Submitted on 21 Jul 2017

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Subscriptions: Year 2017 (Volume 57): 380 €

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Previous volumes (2010-2015): 250 € / year (4 issues)

Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France

The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under the reference ID 1500-024 through the « Investissements d'avenir » programme (Labex Agro: ANR-10-LABX-0001-01)



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A NEW SPECIES OF THE GENUS *MOLOTHROGNATHUS* SUMMERS AND SCHILINGER (ACARI: TROMBIDIFORMES: CALIGONELLIDAE) FROM IRAN

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(Received 07 May 2012; accepted 21 June 2012; published online 21 December 2012)

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ABSTRACT — A new species of *Molothrognathus* Summers and Schlinger (Acari: Caligonellidae), *Molothrognathus mikaeli* n. sp. is described and illustrated from Northwestern Iran. A key of the four species of *Molothrognathus* known from Iran is provided.

KEYWORDS — Taxonomy; Raphignathoidea; soil; Caligonellidae; Iran

INTRODUCTION

Mites of the family Caligonellidae (Acari: Trombidiformes) are relatively small, free-living predatory mites that feed on small arthropods. They often live on tree bark and in litter, soil, moss, storehouses and bird nests (Summers and Schlinger 1955; Meyer and Ueckermann 1989; Fan 2000; Do?an 2003). The genus *Molothrognathus* is the best known genus in this family and has three known species namely: *M. mehrnejadi* Liang and Zhang, 1997; *M. azizi* Ueckermann and Khanjani, 2002 and *M. bahariensis* Ueckermann and Khanjani, 2002 in Iran.

In this paper, we describe and illustrate *Molothrognathus mikaeli* n. sp. from Iran. The terminology and abbreviations adopted are from Kethley (1990). All measurements are given in micrometers (μm). Measurements of holotype are given first followed in parentheses by those of three paratypes.

Genus *Molothrognathus* Summers and Schlinger, 1955

Type species — *Molothrognathus leptostylus* Summers and Schlinger

Diagnosis — *Molothrognathus* can be recognized by the following character: Stylophore conical; peritremes originating dorsally on the median portion of the stylophore, immediately behind the stylet condyle and descending on the laterobasal margins of the stylophore; Palptarsi bearing on solenidion and four distal eupathidial setae

Molothrognathus mikaeli n. sp. Bagheri and Ahaniazad

Holotype — Female (Figures 1-8). Length of body (including gnathosoma) 385 (370 – 395); length of gnathosoma 110 (105 – 115); width 170 (160 – 172);

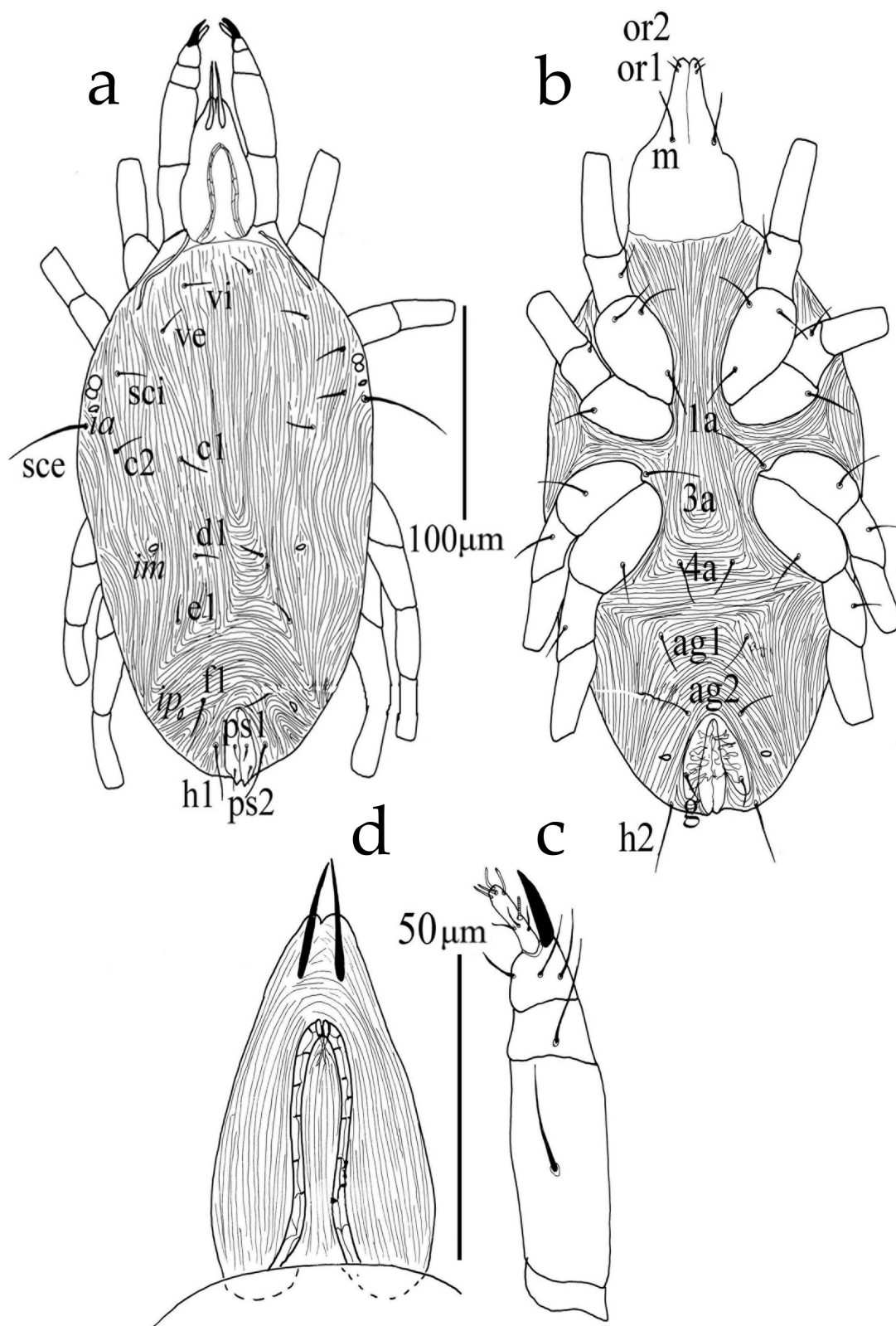


FIGURE 1: *Molothrognathus mikaeli* n. sp. (female): a – Dorsal view; b – Ventral view; c – Palp; d – Stylophore.

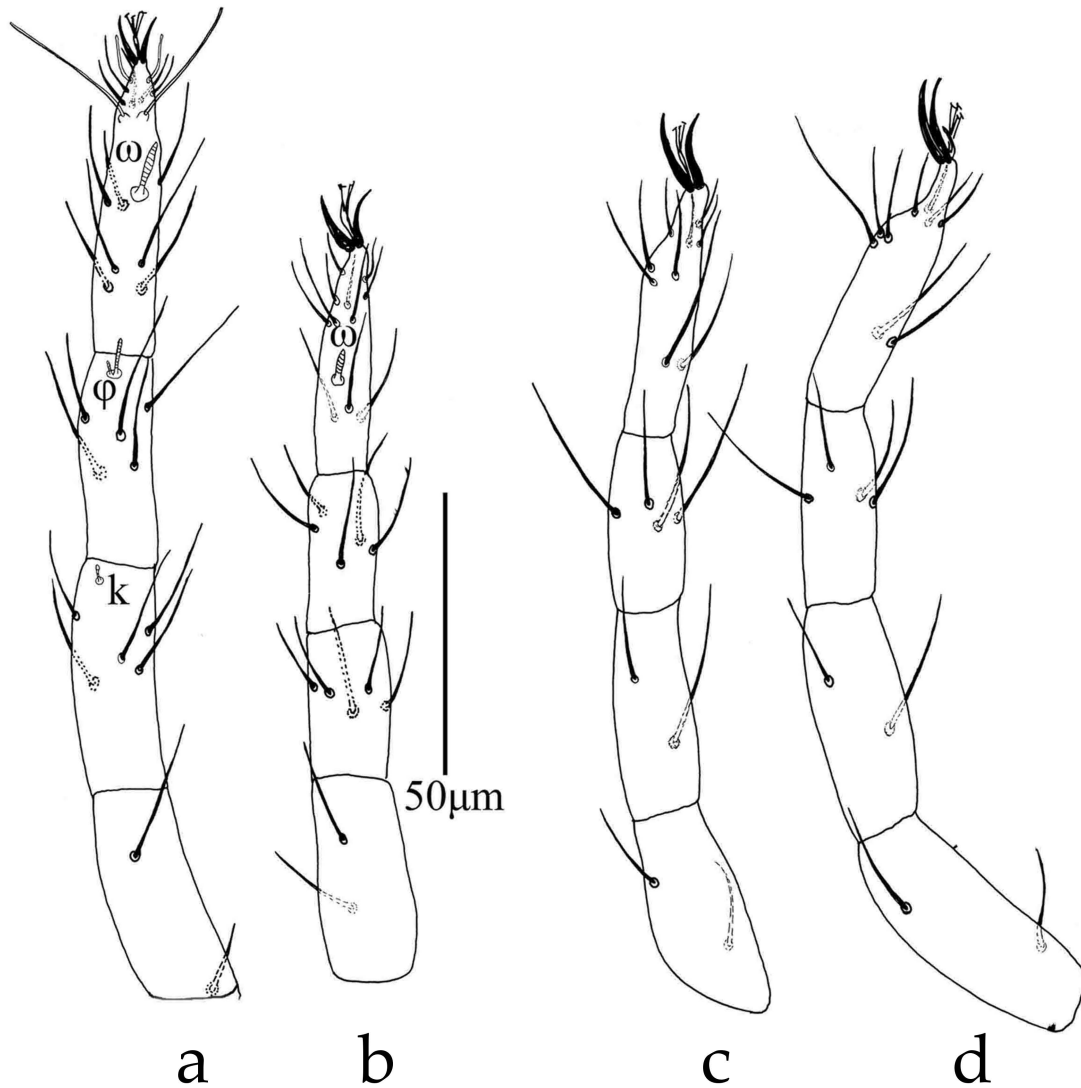


FIGURE 2: *Molothrognathus mikaeli* n. sp. (female): a – Leg I; b – Leg II; c – Leg III; d – Leg IV.

Dorsum (Figure 1a) — Striated and with all setae slender and smooth; setae *sce* longer than other dorsal setae; two pairs of eyes present; seta measurements as follows: *vi* 21 (18 – 21); *ve* 20 (18 – 20); *sci* 21 (19 – 20); *sce* 50 (48 – 50); *c*₁ 15 (15 – 16); *c*₂ 20 (19 – 23); *d*₁ 16 (17); *e*₁ 17 (16 – 17); *f*₁ 21 (20 – 22); *h*₁ 32 (31 – 33); *h*₂ 30 (30 – 31); distances between setae: *vi-vi* 28 (27 – 32), *ve-ve* 45 (35 – 47), *vi-ve* 36 (30 – 40),

sci-sci 106 (90 – 110), *sce-sce* 167 (145 – 170), *sci-sce* 45 (37 – 47), *c*₁-*c*₁ 41 (37 – 45), *c*₂-*c*₂ 112 (87 – 110), *d*₁-*d*₁ 40 (30 – 40), *e*₁-*e*₁ 62 (58 – 62), *f*₁-*f*₁ 38 (35 – 40), *c*₁-*d*₁ 52 (40), *d*₁-*e*₁ 35 (32 – 37), *e*₁-*f*₁ 40 (35 – 40), *f*₁-*h*₁ 26 (25 – 27), *h*₁-*h*₁ 27 (26 – 30), *h*₂-*h*₂ 47 (42 – 47), *h*₁-*h*₂ 20 (17 – 21); dorsum also with three pairs of visible cupules on the integument, *ia* behind eyes, *im* lateral to setae *d*₁ and *ip* lateral to setae *f*₁; anal covers

dorsally with two pairs of setae ps_1 9 (9 – 10) and ps_2 10 (10 – 11) .

Venter (Figure 1b) — Ventral surface striate; endopodal shields between coxae absent; setae $1a$ on coxae I but $3a$ and $4a$ on integument; two pairs of aggenital setae (ag_{1-2}) present; genital flaps bearing one pair of simple setae (g_1), one pair of cupules laterad to genital shields present.

Gnathosoma (Figure 1c-1d) — Subcapitulum smooth, with two pairs of adoral setae ($or_{1,2}$) and also one pair of subcapitular setae (m); stylophore (Figure 3) conical; palpus (Figure 4) with the following complement of setal formulae (femur to tarsus): 1, 1, 3+1 well-developed claw, 3+1 ω +4 acicular eupathidia; tibial claw of palpus as long as palptarsus.

Legs (Figure 2) — Length of legs: leg I 274 (240 – 270); leg II 212 (194 – 210); leg III 239 (212 – 234); leg IV 264 (255 – 270). Setae on leg segments as follows: tarsi 16(+1 ω)-11(+1 ω)-9-9, tibiae 5(+2 ω)-5-4-4, genua 5(+1 κ)-5-2-2, femora 2-2-2-2, trochanters 1-1-1-1, coxae 3-1-1-1.

Male and Immature stages — Unknown

Type materials — Holotype female and three female paratypes were collected from soil from black cherry and pear orchards, 28 April 2011, Danalo village, Ajabshir, East Azerbaijan province, Iran, by Mansoureh Ahaniazad. The holotype will be deposited in the Arachnida Collection of Plant Protection Research Institute, Pretoria, South Africa and paratypes were deposited in the Acarological Collection, Department of Plant Protection, Faculty of Agriculture, University of Maragheh, Iran.

Etymology — This species is named in honor of Mr Mikaeel Ahaniazad, father of the senior author.

Remarks — *Molothrognathus mikaeli* resembles *M. fulgidus* Summers and Schlinger, *M. crucis* Summers and Schlinger and *M. phytocolus* Meyer and Ueckermann in general appearance. However it differs from *M. fulgidus* in that tarsus II bears 11 instead of 10 simple setae, setae c_1 as long as c_2 opposed c_2 two times longer than c_1 in *M. fulgidus*. It differs from *M. crucis* in that tarsus I bears 16 instead of 15 setae and tarsus II bears 11 instead of 10 simple setae in *M. crucis*, and sce/sci 2.4 opposed 3.8 in *M. crucis*. The new species differs from *M. phytocolus* in that tarsus I bears 16 instead of 15 setae and tarsus II bears 11 instead of 10 simple setae in *M. phytocolus*,

setae c_1 as long as c_2 but c_2 two times longer than c_1 in *M. phytocolus*.

Key to the *Molothrognathus* species of Iran

1. Prodorsum with finely striated spindle shaped shield - like area *M. mehrnejadi*
— Prodorsum without finely striated spindle shaped shield - like area 2
2. Tarsus II bears 11 setae; c_2 about 1.5 times longer than c_1 *M. mikaeli* n. sp.
— Tarsus II bears 10 setae; c_2 at least 5 times longer than c_1 3
3. Tarsus I bears 16 simple setae; setae f 91 – 123 long. *M. bahariensis*
— Tarsus I bears 15 simple setae; setae f 34 – 44 long. *M. azizi*


ACKNOWLEDGEMENTS

We greatly appreciate the support for this project provided by the Research Division of University of Maragheh, Maragheh, Iran.

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