



Persian J. Acarol., 2018, Vol. 7, No. 2, pp. 217–220.
<http://dx.doi.org/10.22073/pja.v7i2.37376>
Journal homepage: <http://www.biotaxa.org/pja>



Article

Two new records of the genus *Halolaelaps* (Mesostigmata, Halolaelapidae) from Iran

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PAPER INFO.: Received: 14 March 2018, Accepted: 10 April 2018, Published: 15 April 2018

The Halolaelapidae, as a family of Rhodacaroidea (Acari: Mesostigmata), currently comprises about 80 described species distributed worldwide that mostly inhabit in soil and moist organic substrates (Halliday 2008; Lindquist *et al.* 2009; Krantz 2016). Halliday (2008) regarded to *Halolaelaps* Berlese & Trouessart, 1889, *Halodarcia* Karg, 1969, *Leitneria* Evans, 1957 and *Saprosecans* Karg, 1964 as the only valid genera for the family Halolaelapidae. *Halolaelaps* currently is the largest genus in number of the species. Phoretic behavior has been described in deutonymphs of some species of *Halolaelaps* with amphipodes, flies, and beetles (Bregetova and Shcherbak 1977; Karg 1993; personal observations of the senior author). Trach (2016) described a new species of *Halolaelaps* and also reported *H. saproincisus* Hirschmann & Götz, 1968 based on its female specimens collected in soil and bird faeces in Ukraine. He also described the male and deutonymph of *H. saproincisus* for the first time. So far only one species of *Halolaelaps*, *H. sexclavatus* Oudemans, 1902, has been reported from Iran (Kazemi and Rajaei 2013). In a survey on phoretic Mesostigmata in northeastern Iran and also another study on soil-dwelling mesostigmatans in Kerman Province, some deutonymph specimens of *H. saproincisus* associated with different beetles and a female of *H. curvisetosus* (Leitner, 1946) were collected and identified that considered as new records for mite fauna of Iran.

Mite specimens studied in the current paper were removed from insects' bodies or extracted from soil and litter using a Berlese-Tullgren funnel, cleared in Nesbitt's fluid and then mounted in Hoyer's medium on microscope slides before examination. Morphological observations, measurements, and illustrations were made using compound microscopes equipped with differential interference contrast and phase contrast optical systems. Measurements were made in micrometres. The length and width of idiosoma were respectively taken from the anterior to posterior margins along the midline and from the lateral margins at the broadest point. All examined specimens in this paper are deposited in Acarological Collection, Institute of Science and High Technology and Environmental Sciences, Graduate University of Advanced Technology, Kerman, Iran.

Halolaelaps Berlese & Trouessart, 1889

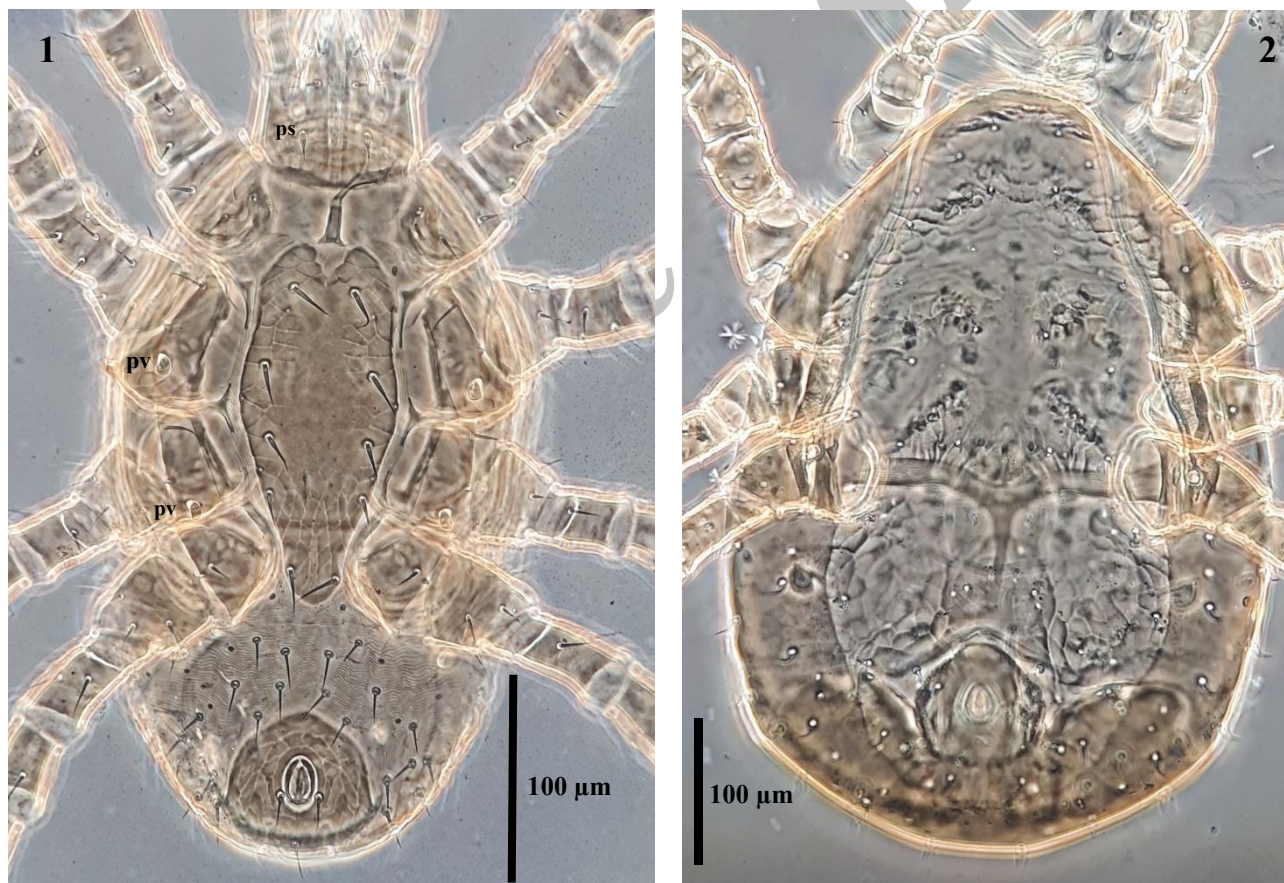
***Halolaelaps saproincisus* Hirschmann & Götz, 1968 (Fig. 1)**

Halolaelaps saproincisus. – Hirschmann and Götz 1968: 9; Karg 1971: 294, 1993: 300; Bregetova and Shcherbak 1977: 296; Krantz 2016: 13; Trach 2016: 444.

Halolaelaps (Halogamasellus) saproincisus. – Błaszak and Ehrnsberger 1995: 44; Błaszak *et al.* 2004: 6.

Material examined and measurements of Iranian specimens

One deutonymph removed from under elytra of an unidentified species of *Aphodius* Illiger, collected in Sarakhs region, Khorasan Razavi Province, northeastern Iran, 26 April 2010 [idiosoma length 329, width 198]; 14 deutonymphs removed from under elytra of an unidentified species of scarab beetles, collected in Mashhad region, Khorasan Razavi Province, northeastern Iran, 31 March 2010 [idiosoma length 353–371, width 219–234 (n = 4)]; one deutonymph removed from an unidentified species of Staphylinidae beetle, collected in Torbat Heydarieh region, Khorasan Razavi Province, northeastern Iran, 30 April 2010 [idiosoma length 338, width 201]; one deutonymph removed from under elytra of an unidentified Geotrupidae beetle, collected in Mashhad region, Khorasan Razavi Province, northeastern Iran, 25 March 2010 [idiosoma length 362, width 227].



Figures 1–2. 1. *Halolaelaps saproincisus* (deutonymph), ventral view of body; 2. *Halolaelaps curvisetosus* (female) dorsal view of idiosoma.

Notes

In a survey on mesostigmatic mites associated with some insects in northeastern Iran, some deutonymph specimens of an unknown species of *Halolaelaps* were collected. This species was unique within the known species of the genus until that time by presence of only two pairs of modified

setae *pv* on coxae II-III, but we did not described the species as new for science because its adult stages, especially adult females, had not been collected in that research. Trach (2016) redescribed adults of *H. saproincisus* and also described its deutonymphs for the first time. Comparison of the deutonymph specimens collected in Iran and that of *H. saproincisus* described by Trach (2016) indicated their conspecificity. However, Iranian deutonymphs of the species have a more concave anterior margin of sternal shield (Fig. 1). On the other hand, Trach (2016) reported phoretic deutonymphs of the species only in association with *Aphodius fimetarius* (L.) (Scarabaeidae), but the deutonymphs in this study were removed from three different species of Scarabaeoidea and also an unidentified species of Staphylinidae beetles. It should be noted that about 20 years ago, Mossadegh (1997) reported an uncertainly identified species of *Halolaelaps* as *H. cf. saproincisus* from bee hives (*Apis mellifera* L.) in northwestern Iran, but that species never identified certainly and recorded from Iran.

***Halolaelaps curvisetosus* (Leitner, 1946) (Fig. 2)**

Saprolaelaps curvisetosus. – Błaszak and Ehrnsberger 2002: 172

Halolaelaps leptoscutatus. – Karg 1971: 288, 1993: 289.

Material examined and measurements of Iranian specimens

One female specimen, extracted from soil and litter samples collected in a citrus orchard in Anbar-Abad region, Jiroft County, Kerman Province, southeastern Iran, 11 March 2010 [idiosoma length 525, width 363].

REFERENCES

- Błaszak, C. & Ehrnsberger, R. (1995) Beiträge zur Kenntnis von *Halolaelaps* (*Halogamasellus* subgen. nov.), (Acari: Gamasida: Halolaelapidae). *Osnabrücker Naturwissenschaftliche Mitteilungen*, 20/21: 25–94.
- Błaszak, C. & Ehrnsberger, R. (2002) Beiträge zur Kenntnis von *Saprolaelaps* Leitner, 1946 in Europa (Acari: Gamasida: Halolaelapidae). *Osnabrücker Naturwissenschaftliche Mitteilungen*, 28: 159–197.
- Błaszak, C., Ehrnsberger, R. & Michalik, J. (2004) Die Milben in der Zoologischen Staatssammlung München. Teil 5. Gattung: *Halolaelaps* Berlese & Trouessart, 1889 (Acari: Gamasida, Halolaelapidae). *Spixiana*, 27: 1–13.
- Bregetova, N.G. & Shcherbak, G.I. (1977) Family Rhodacaridae Oudemans, 1902. In: Ghilyarov, M.S. & Bregetova, N.G. (Eds.), Key to the soil-inhabiting mites. Mesostigmata, Nauka, Leningrad, pp. 256–307 (In Russian).
- Halliday, R.B. (2008) Two new species of littoral mites from Australia (Acari: Halolaelapidae). *Systematic and Applied Acarology*, 13: 214–230.
<http://dx.doi.org/10.11158/saa.13.3.8>
- Hirschmann, W. & Götz, H. (1968) Neue *Halolaelaps*-Arten. *Acarologie. Schriftenreihe für Vergleichende Milbenkunde*, 11: 7–10.
- Karg, W. (1971) Acari (Acarina), Milben. Unterordnung Anactinochaeta (Parasitiformes). Die freilebenden Gamasina (Gamasides). Raubmilben. Die Tierwelt Deutschlands, 59: 1–475.
- Karg, W. (1993) *Acari (Acarina), Milben Parasitiformes (Anactinochaeta), Cohors Gamasina Leach*. Raubmilben. Die Tierwelt Deutschlands, 59 Teil. Gustav Fischer Verlag, Jena, 523 pp.
- Krantz, G.W. (2016) A new species of Halolaelapidae (Acari: Mesostigmata: Rhodacaroidea) from beach wrack in Yaquina Bay, Oregon, USA, with comments on opisthonotal plasticity and cribral development in the family. *Journal of Natural History*, 50(29–30): 1797–1812.
<http://dx.doi.org/10.1080/00222933.2016.1170904>

- Kazemi, S. & Rajaei, A. (2013) An annotated checklist of Iranian Mesostigmata (Acari), excluding the family Phytoseiidae. *Persian Journal of Acarology*, 2(1): 63–158.
- Lindquist E.E., Krantz G.W., Walter D.E. (2009) Order Mesostigmata, *In*: Krantz G.W. and Walter D.E. (Eds.), *A Manual of Acarology*, Third Edition. Texas Tech University Press, Lubbock, pp. 124–232.
- Mossadegh, M.S. (1997) Some mites of the honey bee *Apis mellifera* L. hives in Iran. *The Scientific Journal of Agriculture*, 19(1, 2): 7–16
- Trach, V.A. (2016) New and little known species of *Halolaelaps* (Acari: Mesostigmata: Halolaelapidae) from Ukraine. *Zootaxa*, 4154(4): 336–52.

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