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Article

Redescription of *Schizotetranychus ugarovi* Wainstein (Acari: Tetranychidae) based on new materials from Iran

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ABSTRACT
Schizotetranychus ugarovi Wainstein is redescribed from new materials collected on *Alhagi maurorum* (Fabaceae) in Iran, representing a new country for this species.

KEY WORDS: *Alhaji*; new record; redescription; Sirjan; spider mites.

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INTRODUCTION

The genus *Schizotetranychus* is one of the largest genera in the family Tetranychidae and currently comprises 117 species (Migeon and Dorkeld 2018). To date, six species of *Schizotetranychus* have been known from Iran, comprising *S. garmani* Pritchard & Baker, 1955, *S. hindustanicus* (Hirst, 1924), *S. sayedi* Attiah, 1967, *S. schizopus* (Zacher, 1913), *S. smirnovi* Wainstein, 1954 and *S. iraniensis* Mahdavi & Asadi, 2015 (Beyzavi *et al.* 2013; Mahdavi and Asadi 2015; Migeon and Dorkeld 2018). These species belong to the groups 11th, 7th, 4th, 15^{th,} and 17th respectively (Flechtmann 2012). In this work, *S. ugarovi* is redescribed and reported as 7th species of the genus *Schizotetranychus* from Iran.

MATERIAL AND METHODS

Leaves and sheaths of *Alhagi maurorum* (Fabaceae) were collected in bags and brought to the laboratory. The dipping-washing-filtering method was used to remove the mites (Boller 1984). This solution was filtered through a sieve (400 Mesh). Mites retained on the sieve were washed with 70% ethanol into a Petri dish, then collected individually under a stereomicroscope and mounted on microscope slides in Hoyer's medium. Specimens were examined using an Olympus® BX51 phase-contrast compound microscope. Measurements were taken by means of a Dino-Eye® soft imaging system and are given in micrometers (µm).

The terminology and setal notations used for the description follow that of Lindquist (1985). Depository is cited using the following abbreviations:

SBUK – Collection of the Acarology Laboratory, Shahid Bahonar University of Kerman, Kerman, Iran

Genus *Schizotetranychus* Trägårdh, 1915

Schizotetranychus ugarovi Wainstein, 1960 (Figs. 1–20)

Schizotetranychus ugarovi Wainstein, 1960: 176.
S. ugarovi: Ripka 1998: 429.
S. ugarovi Kontschan & Ripka, 2017: 1215.

Diagnosis

Female – Tibial setal count 10(1)-6-6-6, dorsal idiosomal setae are longer than distances between consecutive setae, tarsi I and II with *p′ζ* smaller than *p″ζ*.

Male – Aedeagus angular, with large tapered posterior projection, anterior projection small, angular knob of aedeagus 3–4 × neck, palp spinneret absent.

Description

Female (Figs. 1–6, 9, 11–14) – Length of body (*v1–h1*) 244–270; width (*c3–c3*) 216–233; leg I 180–209; leg II 150–164; leg III 160–180; leg IV 173–192.

Dorsum (Figs. 2–3) – Dotted line striation, dorsal setae serrate (Fig. 3) and longer than distances between consecutive setae. Dorsocentral hysterosomal setae long enough to reach well past base of next posterior seta on the first posterior row but not reach to the base of posterior seta on the second posterior row. Prodorsum longitudinally striate, opisthosoma transversally striate and laterally with longitudinal striae.

Measurements (n = 3) – Mean length of dorsal setae as follows: *v1* 52–57, *sc1* 88–99, *sc2* 58–66; opisthosomal setae: *c1* 80–90, *c2* 82–91, *c3* 74–80, *d1* 82–85, *d2* 82–89, *e1* 80–90, *e2* 85–92, *f1* 76–88, *f2* 67–71, *h1* 56–63. Distances between dorsal setae: *v1–v1* 60–67, *sc1–sc1* 82–87, *sc2–sc2* 174–182, *c1–c1* 58–63, *c2–c2* 125–129, *c3–c3* 216–233, *d1–d1* 62–74, *d2–d2* 153–161, *e1–e1* 53–63, *e2–e2* 132–141, *f1–f1* 37–42, *f2–f2* 80–85, *h1–h1* 23–24.

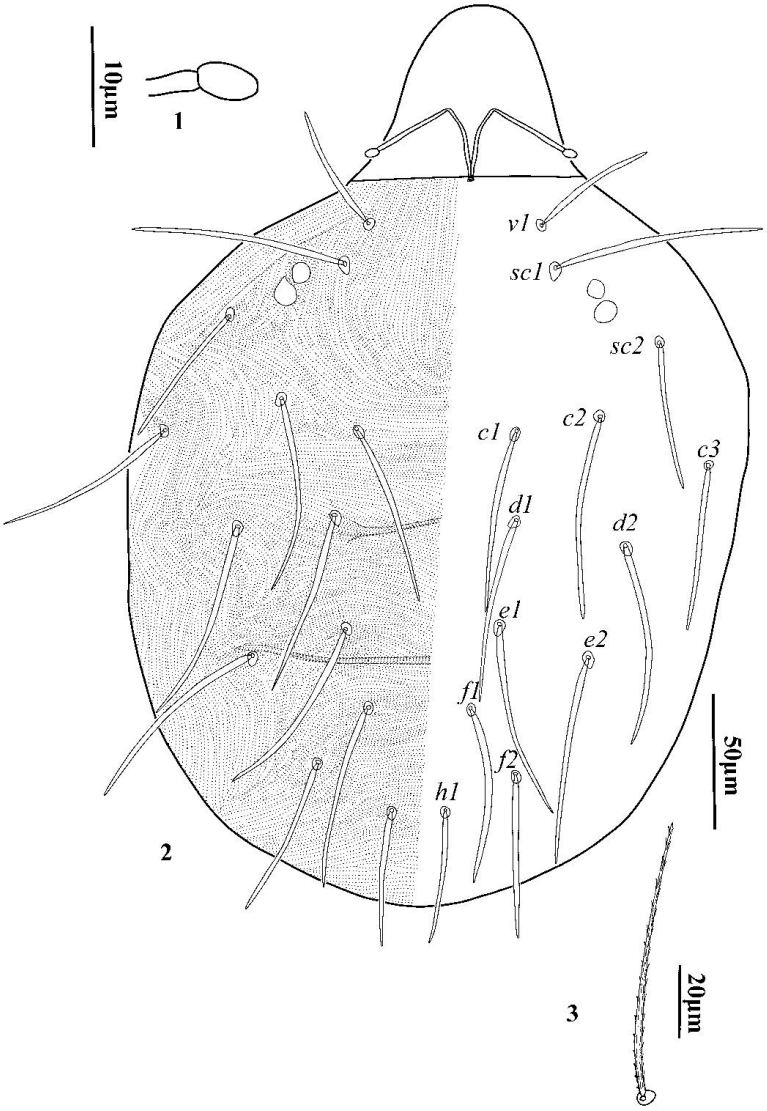
Venter (Fig. 4) – Venter transversally striate between setae *g1* and opisthosoma with transverse to oblique striae laterally. Two pairs of ventrocaudal (*h2-3*) and two pairs of pseudanal setae (*ps1–2*) present. Lengths of intercoxal setae: *1a* 34–40, *3a* 34–37, *4a* 32–36, *g1* 19–22, *g2* 23–24, *ps1* 13–15, *ps2* 14–16, *h2* 21–23, *h3* 24–28, *1a–1a* 24–34, *3a–3a* 56–61, *4a–4a* 46–52.

***Gnathosoma* (Figs. 1, 9) –** Palpal tibia (*dPTi, l′PTi*, *l″PTi*), palpal tarsus (3 tactile setae (*a, b, c*), 3 eupathidial (*ul′ζ*, *suζ*, *ul″ζ*), 1 solenidion (*ω*). Spinneret well developed, more than two times as long as broad: 5 long, 3 wide. Peritremes straight distally ending in a small bulb (Fig. 1).

***Legs* (Figs. 5–6, 11–14) –** Distribution of tactile setae and solenidia (in parentheses): setation of legs I–IV: coxae 2-2-1-1; trochanters 1-1-1-1; femora 10-7-3-2; genua 5-5-4-4; tibiae 10(1)-6-6-6; tarsi 14(1)+2dupl.-13(1)+1dupl.-10(1)-10(1); tarsus I with 4 tactile setae and one sensory seta proximal to the proximal pair of duplex setae, two tactile setae in a transverse line with a proximal pair of duplex setae. Empodia I–IV similar, empodia split into 2 uncinate claws (Figs. 11–14). Length of duplex setae on the leg I: *ω′* 43, *ft′* 11, *ω″* 56, *ft″* 14 and on leg II: *ω″* 30, *ft″* 16, *p″ζ* (I: 13 and II: 14) *p′ζ* (I: 10 and II: 8)

Male (Figs. 7–8, 10, 15–20) – Length of body (*v1–h1*) 180; width (*c3–c3*) 140; leg I 190; leg II 152–170; leg III 157; leg IV 170.

Dorsum – Smooth striation, lengths of setae: prodorsal setae: v_1 46, sc_1 74, sc_2 48; opisthosomal setae: c_1 58, c_2 63, c_3 59, d_1 58, d_2 66, e_1 50, e_2 67, f_1 44, f_2 40, h_1 26. Distances between dorsal setae: v_1–v_1 52, sc_1–sc_1 70, sc_2–sc_2 129, c_1–c_1 57, c_2–c_2 93, c_3–c_3 140, d_1–d_1 52, d_2–d_2 100, e_1–e_1 31, e_2–e_2 69, f_1–f_1 22, f_2–f_2 42, h_1–h_1 16.



Figures 1–3. *Schizotetranychus ugarovi* Wainstein, 1960 (female) – 1. End of peritreme; 2. Dorsum; (3) Dorsal setae d_2.

Venter (Figs. 17–20) – Aedeagus angular, with large tapered posterior projection, anterior projection small, angular knob of aedeagus 3–4 × neck. Lengths of intercoxal setae: *1a* 26, *3a* 27, *4a* 26, g_1 11, g_2 11, ps_1 8, ps_2 8, h_2 15, h_3 15, *1a–1a* 19, *3a–3a* 40, *4a–4a* 30.

Gnathosoma (Fig. 10) – Setation of palp: femur (*dPFe*), genu (*l''PGe*), tibia (*l'PTi*, *dPTi*, *l''PTi*), tarsus (3 tactile setae (*a*, *b*, *c*), 2 eupathidia (*ul'ζ*, *ul''ζ*), 1 solenidion (*ω*): 3 long, 1 wide. Spinneret absent.

Legs (Figs. 7–8) – Distribution of tactile setae and solenidia (in parentheses): setation of legs I–IV: coxae 2-2-1-1; trochanters 1-1-1-1; femora 10-7-3-2; genua 5-5-4-4; tibiae 13(4)-6-6-6; tarsi 16(3)+2dupl.-13(1)+1dupl.-10(1)-10(1); tarsus I with 4 tactile and two sensory setae proximal to proximal pair of duplex setae, two tactile setae and one sensory setae in a transverse line with proximal pair of duplex setae. Empodia I–IV similar, empodia split into 2 uncinate claws hairs.

Length of duplex setae on the leg I: *ω′* 38, *ft′* 11, *ω″* 46, *ft″* 12 and on leg II: *ω″* 27, *ft″* 10. Tarsus I and II with *p′ζ* smaller than *p″ζ*. *p″ζ* (I: 12 and II: 12) *p′ζ* (I: 7 and II: 8)

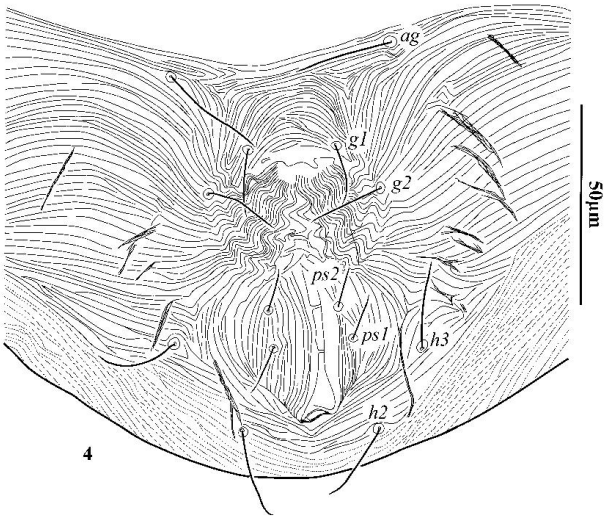
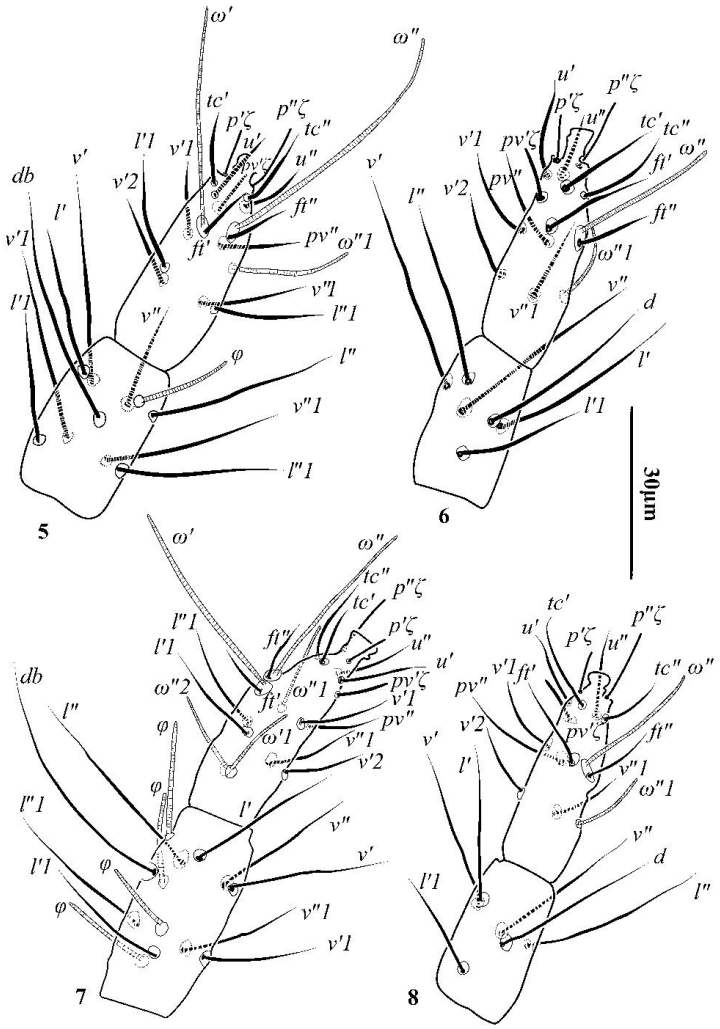
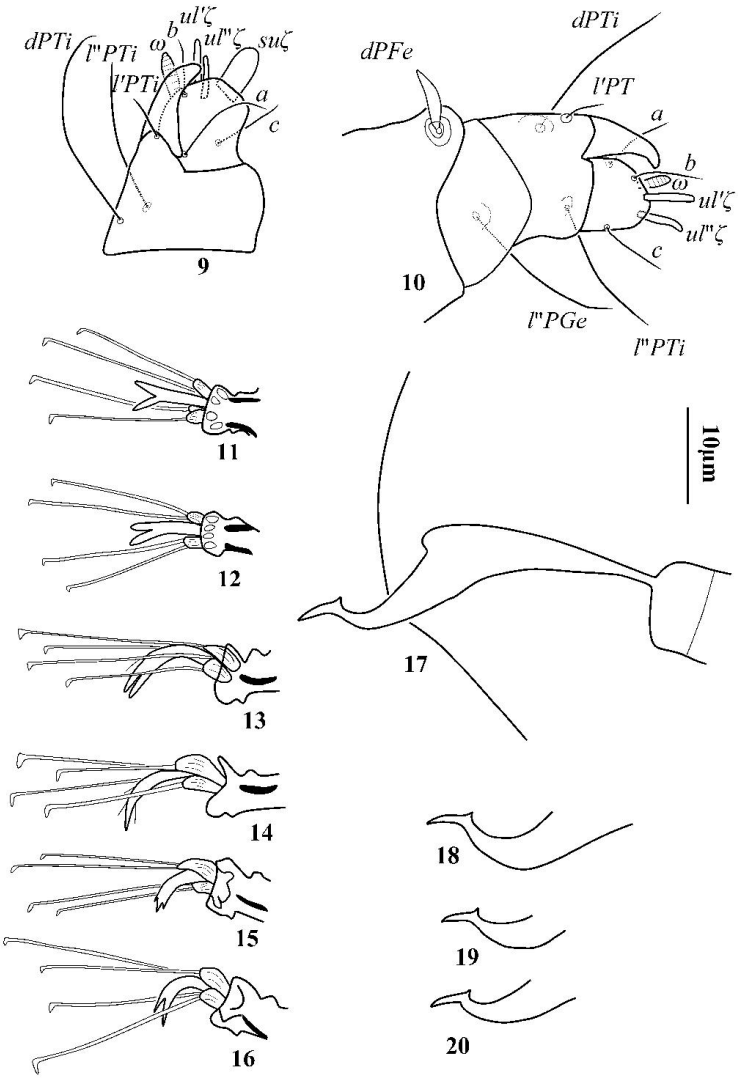


Figure 4. *Schizotetranychus ugarovi* Wainstein, 1960 (female) – Genito-ventral area.



Figures 5–8. *Schizotetranychus ugarovi* Wainstein, 1960 – 5. Tibia and tarsus I (female); 6. Tibia and tarsus II (female); 7. Tibia and tarsus I (male); (8) Tibia and tarsus II (male).



Figures 9–20. *Schizotetranychus ugarovi* Wainstein, 1960 – 9. Palpal tibia and tarsus of female; (10) Palpal femur-tarsus of male; 11–14. Empodium I–IV of female respecttively; 15. Empodium I of male; 16. Empodium IV of male; 17–20. End of the idiosoma, and aedeagus.

Distribution

Tajikistan, Hungary, Iran.

Remarks

Schizotetranychus ugarovi belongs to the group 17th of *Schizotetranychus* grouping defined by Flechtmann (2012). This species is unique in this group and easily separated from other members based on the tibial setal counts 10(1)-6-6-6 in adults. Two host plants were reported for this species: *Alhagi pseudalhagi* (Fabaceae) (Wainstein 1960) and *Prunus spinosa* (Rosaceae) (Ripka 1998).

Wainstein (1960) originally described this species from Tajikistan, on *Alhagi pseudalhagi* (Fabaceae). Ripka (1998) reported and collected this species from Budapest, Hungary. In 2017, Kontschan and Ripka mentioned this species in their checklist of Hungarian spider mites. Although Iranian specimens match the original description, we redescribed this species because the original description lacks details. Our new specimens match the exemplar, except that Wainstein gave the

tarsus setal counts as 18-15-10-10 while we found it to be 16-14-10-10. Probably he counted each set of duplex setae as two setae because his figures have been drawn correctly.

Material examined

Seven females, three males, ex. *Alhagi maurorum* (Fabaceae), Sirjan, Kerman province, Iran, (29° 33' N, 55° 38' E) (AMSL: 1766 m), 14 May 2017, Dariush Bastani, SBUK.

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بازتوصیف *Schizotetranychus ugarovi* Wainstein (Acari: Tetranychidae) بر اساس نمونه‌های جمع‌آوری شده از ایران

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چکیده

گونهٔ *Schizotetranychus ugarovi* Wainstein بر اساس نمونه‌های جمع‌آوری شده از روی *Alhagi maurorum* (Fabaceae) ازایران باز توصیف شده است که نخستین گزارش از کشور محسوب می‌شود.

واژگان کلیدی: *Alhaji*؛ گزارش جدید؛ بازتوصیف؛ سیرجان؛ کنه‌های تارتن.

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