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STORCHIA YAZDANIANI N. SP., A NEW SPECIES OF THE GENUS STORCHIA OUDEMANS, 1923 (ACARI: PROSTIGMATA: STIGMAEIDAE) FROM NORTHERN IRAN

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ABSTRACT — A new species of Storchia Oudemans (Acari: Stigmaeidae) is described and illustrated based on specimens collected from moss and soil in Golestan Province, Iran. A key to all species of Storchia (female) is also provided.

KEYWORDS — Acari; Stigmaeidae; Storchia; new species; key; Iran

INTRODUCTION

Members of the genus Storchia Oudemans live in soil, moss, litter, tree bark and stored products (Doğan and Ayyildiz, 2003). This genus is one of the smallest genera of Stigmaeidae and just has seven known species, namely S. robustus (Berlese, 1885); S. pacifica (Summers, 1964); S. shanghaiensis (Liang and Hu, 1988); S. anae Fan and Li, 1993; S. cunnatea Fan and Yan, 1997; S. hendersonae Fan and Zhang, 2005 and S. ardabiliensis Safasadati, Khanjani, Razmjou and Doğan, 2010. These known species have been reported from China, South Africa, New Zealand, Indonesia and Philippine Island, Turkey and Iran (Summers 1964; Liang and Hu 1988; Fan and Li 1993; Fan and Yan 1997; Fan and Zhang 2005; Safasadati et al. 2010). In this paper, we describe and illustrate the eighth species of this genus, S. yazdaniani n. sp. which is the second species of Storchia from Iran. An updated key to the species of this genus is given.

MATERIAL AND METHODS

Mites were extracted from the soil using a Berlese funnel; specimens were cleared in Nesbitt’s fluid and mounted in Hoyer’s medium. The length of idiosoma was measured from the base of chelicerae to the posterior margin of suranal shield, the width of idiosoma at the broadest part of the idiosoma and setae were measured from their insertion to their tip; distances between setae were measured
Figure 1: Storchia yazdani n. sp. (Female) A – Dorsal view of body. B – Ventral view of body. C – Subcapitulum. D – Palp.
between their insertion. The terminology and abbreviations are based on Kethley (1990). All measurements are given in micrometers (µm).

**STIGMAEIDAE**

*Storchia Oudemans, 1923*

Type species: *Caligonella robustus* Berlese, 1885

Diagnosis — Idiosoma elongate to broadly oval; chelicera separated; palpqrtarsus with 4 simple setae + 1ω + 2 subterminal spine-like eupathidia + 2 terminal eupathidia, palptibia with 2 simple setae + 1 claw + 1 accessory claw, palpgenu with 2 setae, palpfemur with 3 setae and palpctrochanter without setae; prodorsum with an elongate shield, smooth or reticulated, bearing 2 pairs of setae (vi and ve); sci and sce on platelets; eyes and postocular bodies (pob) absent; dorsal hysterosomal area C – F mainly striated, without prominent shield, bearing 6 pairs of setae (c1, d1, d2, c1, c2 and f1); with or without intercalary shields; suranal shield divided, with 2 or 3 pairs of setae (h1, h2 and h3); setae h3 in ventrolateral position; humeral shield small or vestigial, dorsolateral, with setae c2; endopodal shields absent; aggenital area with 4 pairs of aggenital setae; genital and anal valves separated, with 2 – 4 pairs of genital setae and 3 pairs of pseudanal setae (Fan and Zhang 2005; Safasadati et al. 2010).

**Key to species of Storchia of the world (female)**
*based on Safasadati et al. 2010*

1. Trochanter III with two setae………………….2
   — Trochanter III with one seta………………….4
2. Tibia I with two solenidia (ϕ), genu I with 5+(1κ) setae — Tibia I with one solenidion (ϕ), genu I with 4+(1κ) setae. ...

3. Genua III–IV each bearing three setae, tarsi 13+(1ω)-8+(1ω)-6+(1ω)-6+(1ω) — Genua III–IV each bearing two setae, tarsi 14+(1ω)-10+(1ω)-8+(1ω)-8+(1ω) — S. cuneata

4. Coxa IV with two setae, number of setae on genua I–II: 4+(1κ) — Coxa IV with one seta, number of setae on genua I–II: 3+(1κ)-3. ...

5. With 2–3 pairs of genital setae — With 4 pairs of genital setae. ...

6. Genital valves with two pairs of setae, tarsus IV with 7+(1ω) setae — Genital valves with three pairs of setae, tarsus IV with 8+(1ω) setae. ...

7. Dorsal hysterosomal setae c1 nearly 1/4 distance of c1 – c1, setae ve very long and reaching posterior end of prodorsal shield, setae c2 more than 3 times length of c1. — Dorsal hysterosomal setae c1 nearly 1/3 distance of c1 – c1, setae ve normal and do not reach to posterior end of prodorsal shield, setae c2 about 1.6 times length of ϕp. — S. robustus

Storchia yazdaniani Bagheri n. sp.
(Figures 1-2)

Diagnosis

Prodorsal shield reticulated posteriorly; setae ve very long and reaching posterior end of prodorsal shield; dorsum with 14 pairs of setae; trochanter III with one seta; femur IV with two setae; dorsal hysterosomal setae c1 nearly 1/4 distance of c1 – c1; vi/(vi – vi) 0.75; c1/(c1 – c1) 0.25; c1 – c1: d1 – d1: e1 – e1: f1 – f1 = 1.4: 1: 1: 1.4.

Description

Female (n=5) — Holotype (measurements of paratype in parentheses): Idiosoma oval, length of body (excluding gnathosoma) 538 (520 – 540); length of gnathosoma 110 (105 – 114); width of body 325 (320 – 340); length of leg I 238 (230 – 250); leg II 200 (200 – 215); leg III 200 (188 – 205); leg IV 225 (220 – 238).

Dorsum — (Figure 1A): Prodorsum with a long prodorsal shield, reticulated posteriorly and smooth anteriorly, bearing two pairs of setae (vi and ve); ve very long, 4 times longer than vi and reaching posterior end of prodorsal shield; eyes absent; setae sci and sce on integument; opisthosoma with 6 pairs of setae (c1, d1, d2, e1, e2 and f1); suranal shield divided and with two pairs of setae (h1 and h2); setae c2 and h3 situated ventrolaterally; setae c2 at least 2 times longer than other dorsal setae excluding ve; length of dorsal setae vi 32 (30-35); ve 120 (115 – 122); sci 42 (40 – 45); sce 35 (35 – 39); c1 28 (27 – 29); c2 105 (95 – 104); d1 25 (24 – 25); d2 32 (30 – 33); e1 24 (23 – 27); e2 32 (30 – 32); f1 27 (26 – 30); h1 27 (23 – 33); h2 37 (36 – 40); h3 30 (27 – 30); distances between dorsal setae: vi – vi 40 (40 – 45); ve – ve 55 (54 – 58); vi – ve 27 (27 – 30); sci – sci 116 (115 – 120); sce – sce 195 (184 – 194); ve – sce 52 (49 – 53); sci – c1 92 (92 – 95); sce – c2 55 (55 – 62); c1 – c1 110 (109 – 114); c1 – c2 65 (67 – 70); c2 – c2 285 (280 – 290); c1 – d1 65 (64 – 67); d1 – d1 80 (77 – 81); d1 – d2 90 (94 – 100); d1 – e1 92 (90 – 97); d1 – c2 109 (100 – 108); e1 – e1 80 (80 – 88); e1 – f1 62 (55 – 64); f1 – f1 110 (107 – 111); f1 – h1 62 (60 – 65); f1 – h2 70 (65 – 70); h1 – h1 59 (55 – 61); h2 – h2 112 (110 – 117); ratios: vi/(vi – vi) 0.8; c1/(c1 – c1) 0.25; d1/(d1 – d1) 0.31; e1/(e1 – e1) 0.30; f1/(f1 – f1) 0.25; h1/(h1 – h1) 0.45; h2/(h2 – h2) 0.33; c1 – c1: d1 – d1: e1 – e1: f1 – f1 = 1.4: 1: 1: 1.4.

Venter — (Figure 1B): Venter with transverse striate between coxisternal II – III, length of setae 1a 52 (50 – 55), 1b 35 (34 – 37), 1c 55 (50 – 57), 2a 95 (90 – 95), 2c 55 (45 – 50), 3a 90 (90 – 96), 3b 35 (35 – 37), 3c 30 (30 – 32), 4a 50 (45 – 50), 4b 30 (30 – 32), 4c 25 (25 – 27); aggenital area with four pairs of setae (ag1 – ag4), ag1 45 (44 – 45), ag2 62 (60 – 64), ag3 90 (88 – 92) and ag4 50 (44 – 50); genital valves with three pairs of genital setae (g1 – g3), g1 25 (25 – 27), g2 22 (22 – 23), g3 22 (22 – 23); pseudanal valves with three
pairs of pseudanal setae (ps1 – ps3), ps1 22 (22 – 24); ps2 22 (22 – 24); ps3 22 (23 – 24).

Gnathosoma — Subcapitulum (Figure 1C) with two pairs of subcapitular setae (m and n), m 40 (38 – 41), n 80 (78 – 82) and two pairs of adoral setae (or1and or2), or1 25 (23 – 25), or2 22 (21 – 22); distances m – m 38 (37 – 39), n – n 40 (39 – 40), m – n 17 (17 – 18); palpi (Figure 1D) five segmented; palpattus with 4 simple setae + 1 subterminal spine-like eupathidia + 2 terminal eupathidia; palpattibia with three setae + one seta-like accessory claw + one well-developed claw; palpgenu with two pairs of subcapitular setae and 2 palptarsus with 4 simple setae + 1 n = 17 (17 – 18); palpi (Figure 1D) five segmented; legs — (Figures 2A–D): Solenidia ϕ on tibiae I ω nearly 1/4 distance in S. robustus but can be separated by: (1) – ve is very long, (115 – 122μm), and which can reach the posterior end of prodorsal shield (vs 55 – 62 μm in S. robustus); (2) – Humeral setae c2 long, (95 – 104 μm), and more than 3 times the length of c1 (vs 32 – 37 μm and 1.4 times length of c1 in S. robustus); (3) – dorsal hysterosomal setae c1 nearly 1/4 distance of c1 – c1 (vs 1/3 distance c1 – c1 in S. robustus); (4) ratio 1a: 3a: 4a = 1: 1.8: 1 (vs 1: 3.2: 1); (5) – ratio aq1: ag2: ag3: ag4 = 1: 1.4: 2: 1.1 (vs 1.5: 1.6: 2.7: 1).

Etymology — This species is named in honour of the friend of Dr. Mohsen Yazdani, Gorgan University of Agricultural Sciences and Natural Resources and the friend of the first author

Type material — Holotype and 4 paratype females of S. yazdaniani n. sp. were collected from soil and moss, 9 May 2010, in Gorgan (Golestan Province, Iran) by Shiena Shirmbeik Mohajer. The holotype and 1 paratype females were deposited in the Arachnidia Collection of Plant Protection Research Institute ( Pretoria, South Africa); 2 paratype females were deposited in the Acarological Collection of the Department of Plant Protection, Faculty of Agriculture, University of Maragheh (Iran) and 1 paratype female was deposited in Jalal Afshar museum (Karaj, Iran).

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REFERENCES


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