Acarologia is proudly non-profit, 
with no page charges and free open access

Please help us maintain this system by 
encouraging your institutes to subscribe to the print version of the journal 
and by sending us your high quality research on the Acari.

Subscriptions: Year 2020 (Volume 60): 450 €
http://www1.montpellier.inra.fr/CBGP/acarologia/subscribe.php
Previous volumes (2010-2018): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France
ISSN 0044-586X (print), ISSN 2107-7207 (electronic)

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)

Acarologia is under free license and distributed under the terms of the 
Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and 
reproduction in any medium, provided the original author and source are credited.
STORCHIA YAZDANIANI N. SP., A NEW SPECIES OF THE GENUS STORCHIA OUDEMANS, 1923 (ACARI: PROSTIGMATA: STIGMAEIDAE) FROM NORTHERN IRAN

Mohammad BAGHERI¹, Shiela SHIRINBEIK MOHAJER², Alireza SABOORI³, Gholamali ASADEH² and Edward A. UECKERMANN⁴,⁵

(Received 23 November 2010; accepted 15 January 2011; published online 30 March 2011)

¹ Department of Plant Protection, Faculty of Agriculture, University of Maragheh, Maragheh, Iran. mbagheri20022002@yahoo.com
² Department of Plant Protection, Faculty of Plant Production, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran. sh_shirinbeikmojaher@yahoo.com; g_asadeh@yahoo.com
³ Department of Plant Protection, College of Agriculture, University of Tehran, Karaj, Iran. saboori@ut.ac.ir
⁴ ARC-PPRI, Private Bagx134, Queenswood, Pretoria 0121, South Africa. UeckermannE@arc.agric.za
⁵ School of Environmental Sciences and Development, North-West University, Potchefstroom Campus 2520, South Africa.

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. shanghaisensis (Liang and Hu, 1988); S. annae Fan and Li, 1993; S. cunnenate 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; palptarsus 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 , palp femur with 3 setae and palp trochanter 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, e1, e2 and fl); 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

---

**Figure 2:** *Storchia yazdani* n. sp. (Female) A – Leg I, femur-tarsus. B – Leg II, femur-tarsus. C – Leg III, femur-tarsus. D – Leg IV, femur-tarsus.
2. Tibia I with two solenidia (φ), genu I with 5+(1κ) setae.................................[3]
   — Tibia I with one solenidion (φ), genu I with 4+(1κ) setae .......................... S. annae

3. Genua III–IV each bearing three setae, tarsi 13+(1ω)-8+(1ω)-6+(1ω)-6+(1ω) ............ S. pacifica
   — 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)-4...........................[5]
   — Coxa IV with one seta, number of setae on genua I–II: 3+(1κ)-3 ....................... S. shanghaisensis

5. With 2 – 3 pairs of genital setae ..............................[6]
   — With 4 pairs of genital setae .............. S. ardabiliensis

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

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 ....................... S. yazdani Bagheri n. sp.
   — 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 yazdani 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 ventrolateraly; 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 24 (23 – 25); d2 – d2 65 (64 – 67); e1 – e1 92 (90 – 97); d1 – c2 109 (100 – 108); e1 – c1 80 (80 – 88); vi – f1 62 (55 – 64); f1 – f1 110 (107 – 111); h1 – h1 62 (60 – 65); h1 – h2 70 (65 – 70); h2 – 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: c1 – e1: f1 – f1 = 1.4: 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), 2b 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 (or1 and 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; palpantarsus with 4 simple setae + 1 subterminal spine-like eupathidia + 2 terminal eupathidia; palpantibia with three setae + one seta-like accessory claw + one well-developed claw; palpgenu with 2 setae; palptibia with three setae; palptrochanter without setae.

Legs — (Figures 2A–D): Solenidia ϕ on tibiae I absent; number of setae and solenidia on legs 1 – IV: coxae 2-2-2-2; trochanters 1-1-1-1; femora 4-4-3-2; genua 4-1+2-4-2; tibiae 5+1+ϕp–5+1+ϕp–5+1+ϕp; tarsi 13+1+ϕp+9+1+ϕp–7+1+ϕp–7+1+ϕp: lengths of solenidia: Iω 15 (14 – 16), IIω 11 (10 – 11); IIIω 6 (6 – 7); IVω 5 (5 – 6); ϕp 28 (27 – 29); Iϕp 24 (24 – 25); IIϕp 19 (19 – 20); IVϕp 17 (15 – 17).

Male and immature stages — Unknown.

Remarks — Storchia yazdaniani n. sp. resembles to 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 – 104μm), 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 ag1: ag2: ag3: ag4 = 1: 1.4: 2: 1.1 (vs 1: 1.6: 2.7: 1).

Etymology — This species is named in honour 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 Shiela Shirbelik Mohajer. The holotype and 1 paratype females were deposited in the Arachnida 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).

ACKNOWLEDGEMENTS

This project was supported by the research division of the Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran, which is greatly appreciated.

REFERENCES


COPYRIGHT

Bagheri et al. Acarologia is under free license. This open-access article is distributed under the terms of the Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.