

Article

Redescription of *Aegyptobia pavlovskii* (Reck, 1951) (Acari: Trombidiformes: Tenuipalpidae) with new host records from Iran

Sadegh Farzan^{1*}, Mahdieh Asadi¹ & Edward A. Ueckermann^{2&3}

1 Department of Plant Protection, College of Agriculture, Shahid Bahonar University of Kerman, Kerman, Iran; Emails: farzan.sadegh@gmail.com, asadi.mahd@yahoo.com

2 ARC-Plant Protection Research Institute, Private Bag X134, Queenswood, Pretoria, 0121 South Africa; Email: UeckermannE@arc.agric.za

3 School of Environmental Sciences and Development, North-West University, Potchefstroom Campus 2520, South Africa

* Corresponding author

Abstract

Aegyptobia pavlovskii is redescribed from new materials collected in Iran. This species is a new record for the false spider mite fauna of Iran. Additionally two new host records from the family Rosaceae are reported for this species.

Key words: *Aegyptobia*, redescription, new record, host record, Kerman

Introduction

Aegyptobia Sayed is the third largest genus of the Tenuipalpidae. Mesa *et al.* (2003) reported 93 species, which became 94 after Seeman & Beard (2011). Recently, Khanjani *et al.* (2012) described two new species and synonymized three others, bringing the total back to 93. They synonymized: *A. daneshvari* Parsi & Khosrowshahi with *Phytoptipalpus salicicola* (Al-Gboory, 1987); *A. kharazii* Mesa & Moraes, 2009 (which was originally *A. meyeræ* Khosrowshahi & Arbabi, 1997) with *A. beglarovi* Livschitz & Mitrofanov, 1967; and *A. ueckermanni* Khosrowshahi & Arbabi, 1997 with *A. tragardhi* Sayed, 1950. In addition to these four species of Iranian *Aegyptobia*, the species *A. glyptus* Pritchard & Baker, 1958, *A. iranensis* Khanjani, Gotoh & Barimani-Varandi, 2008 and *A. persicae* Khosrowshahi & Arbabi, 1997 had been reported (Khanjani *et al.*, 2008; Kamali *et al.*, 2001). We add *Aegyptobia pavlovskii* as a new record to the Iranian mite fauna and therefore increase the number of Iranian species of this genus to seven.

Aegyptobia pavlovskii was originally described from *Ephedra procera* (Ephedraceae) as *Brevipalpoides pavlovskii* from Georgia by Reck, 1951. Six years later, Pritchard & Baker (1958) transferred this species to the genus *Aegyptobia*. Bagdasarian (1962) mentioned this species as *Pentamerismus pavlovskii* in his publication. Meyer (1979), Mitrofanov & Strankova (1979), Pritchard & Baker (1985) just included *A. pavlovskii* in their keys to the species of *Aegyptobia* without any descriptions. However, Livschitz & Mitrofanov (1967) provided a brief

description. Here, we redescribe this species because their original descriptions lack many details. All of the known type samples collected from the family Ephedraceae. We redescribe this species and report new host records for it from new materials collected in Iran.

Material and Methods

Leaves were collected from host plants, taken to the laboratory, and false spider mites removed from the leaves under a stereomicroscope and preserved in 70% ethanol. They were cleared in lactic acid, mounted in Hoyer's medium and dried at 45°C in an oven.

Notations of the dorsal setae and the determination of the genera follow Mesa *et al.* (2009) and all measurements are given in micrometers (μm). The range of measurements of specimens is given in the text. Two female specimens are deposited in the Collection of the Acarology Laboratory, Shahid Bahonar University of Kerman, Kerman, Iran. One more sample is deposited in the Arachnida Collection of ARC-Plant Protection Research Institute, Pretoria, South Africa. Measurements were done by means of a DINO-EYE® soft imaging system and drawings with a drawing tube attached to an Olympus® Research Microscope. Microsoft office PowerPoint 2003 was used for figure cleaning.

Genus *Aegyptobia* Sayed, 1950

Diagnosis of all stages

Palps five segmented; rostral shield absent; hysterosoma with 12–13 pairs of dorsal setae; c_2 , d_2 , and f_2 present; setae h_2 similar to other dorsal setae in size and form; ventral plate weakly developed or absent; three pairs of anal setae on well-developed anal plates.

Adult female: Anterior margin of propodosoma smooth or with medial lobe (this lobe can be incised); genital plate weakly developed.

Aegyptobia pavlovskii (Reck, 1951)

Brevipalpoides pavlovskii Reck, 1951: 292.

Aegyptobia pavlovskii Pritchard & Baker, 1958 (key), *Aegyptobia (Aegyptobia) pavlovskii* Mitrofanov & Strunkova, 1979, Bagdasarian, 1962 (key), Livschitz & Mitrofanov, 1967 (redescription), Meyer, 1979 (key), Mitrofanov & Strunkova, 1979 (key), Strunkova, 1978 (key).

Diagnosis

Opisthosoma with 13 pairs of dorsal setae (f_2 present). Dorsal shields completely covered with simple longitudinal striations medially on propodosoma and hysterosoma, but diagonal posterior to sc_2 and laterally on hysterosoma. Propodosoma with a small indentation medially. Dorsal setae setiform and serrate; tarsal claw uncinuate. Palp from tarsus to trochanter: 3($1s+2e$)-2-0-1-0. Three pairs of pores present between d_2 and d_3 (mediolateral to d_3) and posterior to c_3 and anterior to e_3 . Metapodal plates absent.

Female (n = 3; Figs. 1–7)

Length of body (v_2-h_1) 195–201 μm , width (sc_2-sc_2) 98–100.

Dorsum (Fig. 1)

Body oval and striated, with simple longitudinal striations medially on propodosoma and hysterosoma; anterior margin of prodorsum with a small notch. Hysterosoma striated, with three pairs of pores as follows: one posterior to c_3 , one between d_2 and d_3 (mediolateral to d_3) and the last one is anterior to e_3 which is less obvious to see; 13 pairs of hysterosomal setae as follows: three pairs of dorsocentral, four pairs of dorsosublateral and six pairs of dorsolateral. All dorsal setae setiform and serrate and their lengths are as follows: v_2 16 (13–21), sc_1 17 (14–22), sc_2 17 (15–21), c_1 18 (17–19), c_2 16 (14–18), c_3 16 (15–18), d_1 10 (9–12), d_2 12 (9–14), d_3 16 (14–18), e_1 10 (8–12), e_2 13 (10–15), e_3 18 (17–20), f_2 13 (10–15), f_3 17 (15–20), h_1 16 (13–17), h_2 17 (15–18).

Distances between dorsal setae : v_2-v_2 37 (35–40), sc_1-sc_1 83 (79–87), sc_2-sc_2 101 (98–105), c_1-c_1 43 (42–44), c_2-c_2 88 (86–91), c_3-c_3 113 (110–119), d_1-d_1 29 (24–30), d_2-d_2 80 (79–82), d_3-d_3 111 (110–112), e_1-e_1 22 (21–24), e_2-e_2 73 (69–76), e_3-e_3 107 (106–109), f_2-f_2 65 (63–67), f_3-f_3 95 (93–98), h_1-h_1 29 (28–31), h_2-h_2 68 (62–74).

1

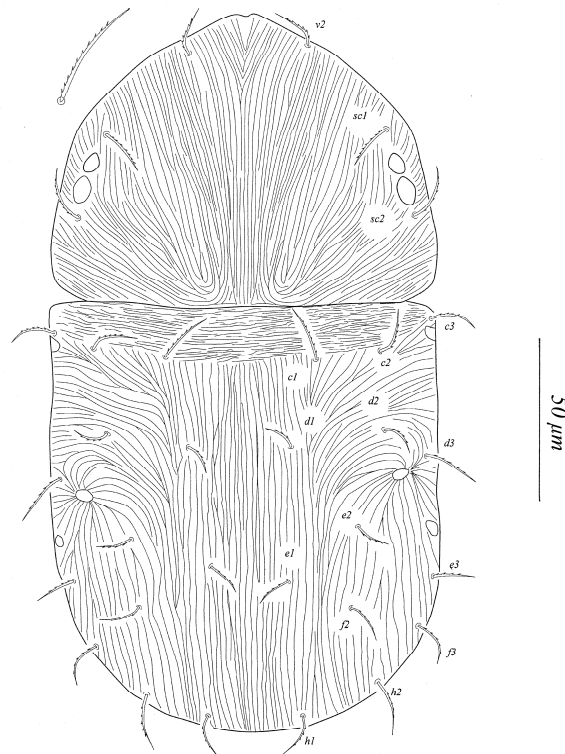
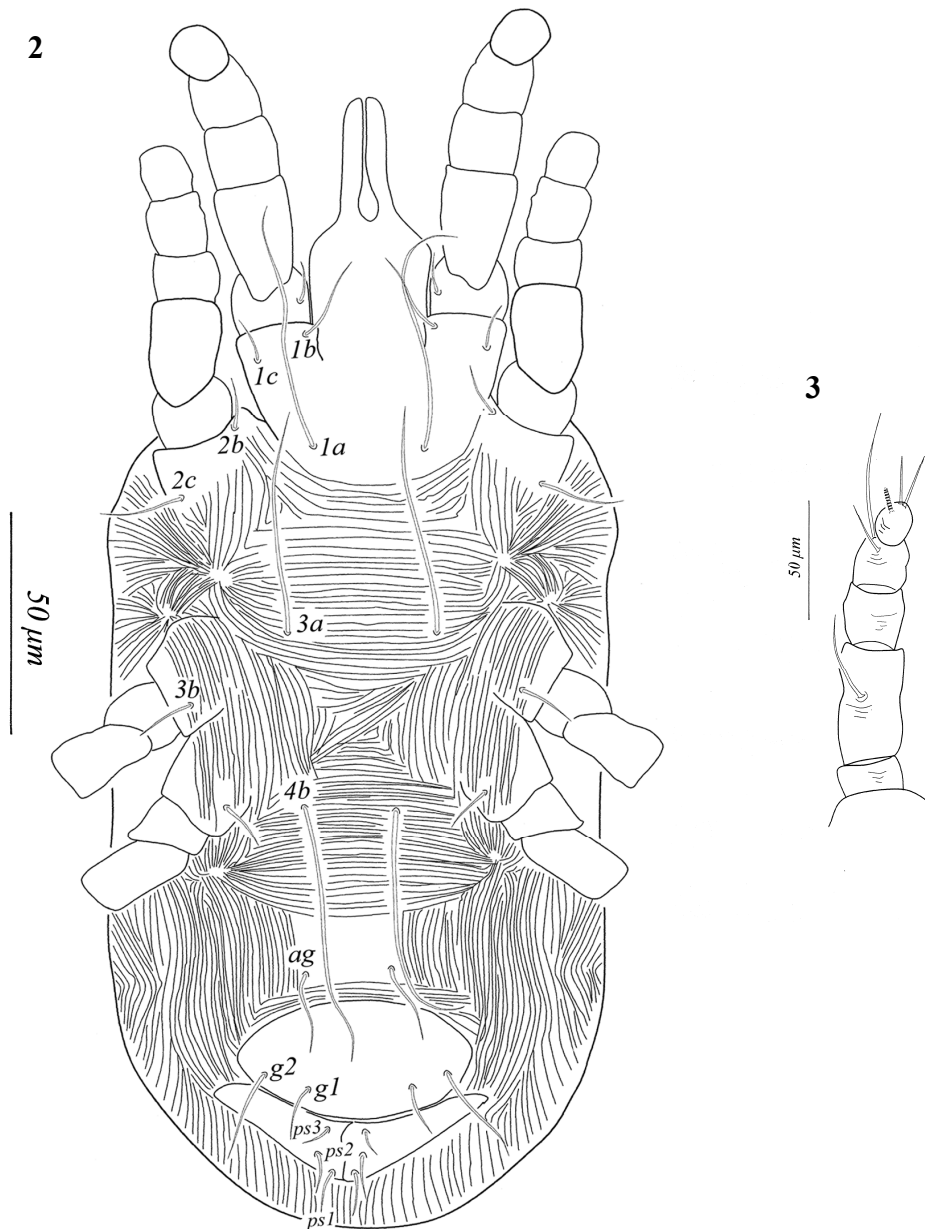


Figure 1. *Aegyptobia pavlovskii* (female). Adult female dorsum.

Venter (Fig. 2)

Cuticle with broad band of transverse striae between setae *1a* to *3a* and also behind *4a*; intercoxal area between coxae III-IV irregularly striate; pregenital area with smooth ventral plate; longitudinal striae lateral to pregenital and genital areas; no oval scalloped area lateral to pregenital area; genital setae inserted in more or less transverse row along posterior margin of a smooth and oval genital plate; anal setae (*ps*₁₋₃) smooth, inserted longitudinally along medial margin of well defined anal plates. Setae *ag* and *g*₁₋₂ subequal in length and *ps*₁₋₃ are shorter than *ag* and *ps*₁₋₃. Ventral setae (*1a-4a*) very long and smooth.

Length of ventral setae: *1a* 56 (51–63), *1b* 12 (11–14), *1c* 20 (19–22), *2b* 18 (17–21), *2c* 13 (10–17), *3a* 56 (53–58), *3b* 12 (8–15), *4a* 58 (57–59), *4b* 13 (9–16), *ag* 12(8–15), *g*₁ 13 (10–15), *g*₂ 18 (16–20), *ps*₁ 11 (9–14), *ps*₂ 10 (8–11), *ps*₃ 7 (7–8).



Figures 2- 3. *Aegyptobia pavlovskii* (female). 2. Adult female body venter; 3. Palp.

Gnathosoma (Fig. 2)

Rostrum extending to the anterior margin of genu I to the middle of tibia I, palp 5-segmented (Fig. 3), chaetotaxy from tarsus to trochanter: 3 (*Is+2e*)-2-0-1-0.

Legs (Figs. 4–7)

Claws uncinuate; setal formula as follows (solenidia included in count): coxae 2-2-1-1; trochanters 1-1-2-1; femora 4-4-2-1; genua 2-2-1-0; tibiae 4-4-3-3; tarsi 9(ω)-9(ω)-5-5. Leg chaetotaxy as follows: trochanters I, II, IV *v'*; tr III *l'*, *v'*; femora I-II *d*, *v'*, *v''*, *l'*; fe III *d*, *v'*; fe IV *v'*; genua I-II *l'*, *d*, *v'*; ge III *d*; ge IV nude; tibiae I-II *d*, *l'*, *v'-v''*; ti III-IV *d*, *v'-v''*; ta I-II *u'-u''*, *p'-p''*, *tc'-tc''*, *ft'-ft''*, ω'' ; ta III-IV *u'-u''*, *tc'-tc''*, *ft'*. Coxal setae smooth and relatively long.

Remarks

This species is related to *A. aplopappi* Baker & Tuttle, 1964 in having similar length of rostrum, slightly notched anterior margin of propodosoma, body covered with longitudinal striae, and fine serrate setae. However, *A. aplopappi* has a small reticulated area just behind the first pair of propodosomal setae, no hysterosomal pores, stronger serrated dorsal setae and the presence of two scalloped area lateral to the anogenital area. There are also some similarities between *A. pavlovskii* (Reck, 1951) and *A. lacida* Baker & Tuttle, 1972 in having longitudinal striations mediodorsally and slightly notched anterior margin of propodosoma, but the nude dorsal setae and the lack of hysterosomal pores in *A. lacida* separate these two species (Baker & Tuttle 1972).

Material examined

Two females, Khabr (28°48'N 56°20'E) (Baft- Kerman province), 13.08.2010, S. Farzan, ex leaves *Ephedra procera* (Ephedraceae). New host records collected from: Khabr (28°48'N 56°20'E) (Baft- Kerman province), 22.07.2010, S. Farzan, ex leaves *Crataegus azarolus* (Rosaceae); Roodfargh (28°32'N 58°11'E) (Jiroft- Kerman province), 27.03.2011, S. Farzan, ex leaves *Prunus amygdali* (Rosaceae).

Acknowledgements

The first author wishes to thank Mr. Saljughy for his assistance in collecting the samples.

References


- Bagdasarian, A.T. (1962) Contribution to the fauna false spider mites from Armenia. *Izvestiia Akademii Nauk SSR, Moscow*, 15: 49–58.
- Baker, E.W. & Tuttle, D.M. (1964) The false spider mites of Arizona (Acarina: Tenuipalpidae). *Agricultural Experiment Station, University of Arizona, Technical Bulletin*, No. 163, 57pp.
- Baker, E.W. & Tuttle, D.M. (1972) New species and further notes on the

- Tetranychoida mostly from southwestern United States (Acarina: Tetranychidae and Tenuipalpidae). *Smithsonian Contributions to Zoology*, 116: 18–25.
- Kamali, K., Ostovan, H. & Atamehr, A. (2001) A catalog of mites & ticks (Acari) of Iran. *Islamic Azad University Scientific Publication Center, Tehran*, 127 pp.
- Khanjani, M., Gotoh, T. & Barimani Varandi, H. (2008) A new species of the genus *Aegyptobia* Sayed (Acari: Prostigmata, Tenuipalpidae) from Iran. *Systematic & Applied Acarology*, 13: 65–69.
- Khanjani, M., Khanjani, M. & Seeman, O. (2012) The false spider mites of the genera *Aegyptobia* Sayed and *Phytoptipalpus* Tragardh (Acari: Tenuipalpidae) from Iran. *Zootaxa*, 3295: 30–58.
- Khosrowshahi, M. & Arbabi, M. (1997) The Tenuipalpidae (Acari) of Iran with introduction of new species for the world fauna & Iran. *Ministry of Agriculture, Agriculture Research, Education and Extension Organization Plant Pests and Diseases Research institute, Tehran*, 56 pp.
- Livschitz, I.Z. & Mitrofanov, V.I. (1967). Materials to the knowledge of the fauna of false spider mites (Acariformes: Tenuipalpidae). *Proceedings of the Nikitsky Botanical Garden*, 39: 1–72.
- Mesa, N., Ochoa, R., Welbourn, W.C., Evans, G.A. & De Moraes, G. (2009) A catalog of the Tenuipalpidae (Acari) of the world with a key to the genera. *Zootaxa*, 2098: 185 pp.
- Meyer, M.K.P. (1979) The Tenuipalpidae (Acari) of Africa with keys to the world fauna. *Entomology Memoir, Department of Agriculture Republic South Africa, Pretoria*, 50: 1–133.
- Mitrofanov, V.I. & Strunkova, Z.I. (1979) A key to false spider mites. *Operdelitl' Kleshchei-ploskotelok, USSR*, 148: 1–148.
- Pritchard, A.E. & Baker, E.W. (1958) The false spider mites (Acarina: Tenuipalpidae). *University of California Publications in Entomology*, 14 (3): 175–274.
- Reck, G. (1951) *Kleshchirodov Tenuipalpus, Brevipalpus e Brevipalpoides* (Trichadenidae, Acarina) po materalam iz grunzii. *Trudy Instituta Zoologii Akademiiya Nauk Gruz SSR*, 10: 289–297.
- Strunkova, Z.I. (1978) Fauna mites of families Bryobiidae, Tetranychidae, Tenuipalpidae from Tadzhikistan and adjacent areas of the central Asia. *Izvestiia Akademii nauk Tadzhikskoi SSR, Stalinabad*, 3: 27–30.

Received: 5 December 2011

Accepted: 5 February 2012

COPYRIGHT

 Farzan *et al.* Persian Journal of Acarology 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.

چکیده

گونه *Aegyptobia pavlovskii* از نمونه‌های جمع‌آوری شده از ایران بازتوصیف می‌شود. این گونه برای فون کته‌های ایران جدید است. افزون بر این، دو میزبان جدید از خانواده Rosaceae برای این گونه گزارش می‌شود.