

**A NEWLY RECORDED RAPHIGNATHOID MITE SPECIES
FROM TURKEY: *BARBUTIA IRANENSIS* BAGHERI ET AL.
(ACARI: RAPHIGNATHOIDEA)**

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ABSTRACT: In this study, the genus *Barbutia* mite specimens in moss and soil samples taken from Reşadiye and Ahmediye, Turkey are examined. During the examination a total of three deutonymph females mite specimens of *Barbutia iranensis* Bagheri, Navaei and Ueckermann have been identified. The description and illustrations of the species are based on the collected specimens, and its distribution in the world is also given. This species is a new record for the Turkish fauna.

KEY WORDS: Acari, Barbutiidae, *Barbutia iranensis*, new record, Turkey

The poorly known family Barbutiidae is one of the most mysterious groups in the Prostigmata. Barbutiidae as one of the 11 families of Raphignathoidea (Fan & Zhang, 2005). Barbutiidae Robaux is containing only one genus *Barbutia* Oudemans and five rare species: *B. anguineus* (Berlese), *B. australia* Fan, Walter & Proctor, *B. longinqua* Fan, Walter & Proctor, *B. perretae* Robaux, and *B. iranensis* Bagheri et al. The systematic position of *Barbutia* has long been unclear. Fan et al. (2003) reviewed and discussed the systematic position of the family Barbutiidae and they hypothesized that it is a lineage that fits between Tetranychoidae and Raphignathoidea, and thought that it may require molecular data and/or a better understanding of ontogenetic characters to resolve this question. This family recorded the first time from Turkey by Doğan & Dönel (2009). *Barbutia iranensis* is the second species for Turkish fauna.

MATERIALS AND METHODS

Mites were extracted from samples of decomposing matter, soil and moss using compound Berlese funnels. After clearing in lactic acid, examples of each species were dissected for detailed examination of some structures and mounted in Hoyer's medium for identification. Drawings and examination were attained with drawing tube Nikon Y-IDT and Nikon E-600 type research microscopes. Measurements were made using a Leica DM 4000 B phasecontrast microscope. Dorsal setal and leg setal designations follow Kethley (1990) and Grandjean (1944), respectively. Setal counts of leg segments are given with solenidia in parenthesis. All measurements are given in micrometers (µm). The range of the dispersion of measurements has been given parenthetically; the average of the values is in front of parenthesis.

RESULTS AND DISCUSSION

Family: Barbutiidae Robaux, 1975
Type genus: *Barbutia* Oudemans, 1927.

***Barbutia iranensis* Bagheri, Navaei & Ueckermann, 2010
Deutonymph Female (n=3) (Figures 1-6)**

Body elongate, 305 (297–320) long, 88 (75–90) wide.

Dorsum – Integument of dorsum faint striated except for punctuated along sejugal furrow. Shields not evident. Eyes and postocular bodies present, eyes 6 (4–8) and postocular bodies 7 (8–10) in diameters. Thirteen pairs of dorsal body setae smooth and slender. Setae *ve* about as long as *sce*, not reaching bases of *c*₁; *sci* about as long as *e*₁ and *f*₁; Dimension of setae as follows: *vi*: 12 (10–13); *ve*: 45 (43–48); *sci*: 8 (5–10); *sce*: 35 (30–43); *c*₁: 12 (10–13); *c*₂: 40 (38–45); *d*₁: 10 (8–13); *d*₂: 15 (13–18); *e*₁: 8 (5–10); *e*₂: 18 (13–23); *f*₁: 8 (5–10); *h*₁: 65 (60–70); *h*₂: 50 (43–63); *vi-vi*: 23 (20–25); *ve-ve*: 28 (25–30); *vi-ve*: 13 (10–15); *sce-sce*: 50 (47–55); *c*_{1-c}₁: 50 (47–55); *c*_{1-c}₂: 32 (30–35); *d*_{2-d}₂: 45 (43–50); *c*_{1-d}₁: 45 (40–53); *c*_{1-d}₂: 110 (108–115); *d*_{1-d}₁: 30 (27–35); *d*_{1-d}₂: 50 (43–53); *e*_{2-e}₂: 43 (40–45); *d*_{2-e}₂: 33 (30–35); *d*_{1-e}₁: 45 (43–48); *d*_{1-e}₂: 65 (63–68); *e*_{1-e}₁: 18 (15–20); *e*_{2-e}₁: 38 (35–43); *f*_{1-f}₁: 18 (15–20); *e*_{1-f}₁: 43 (40–45); *e*_{2-f}₁: 28 (25–30); *h*_{1-h}₁: 33 (30–35); *h*_{2-h}₂: 23 (20–28); *h*_{1-h}₂: 7 (5–8).

Venter – Ventral surface striated. Ventral shield absent. Ventral setae *1a* close to coxae I, *3a* situated in front of coxae III and *4a* situated on membrane between coxae IV. Measurements of the setae: *1a*: 23 (20–25), *3a*: 23 (20–25) and *4a*: 18 (15–20). Genital and anal openings separate, genital shields without setae, aggenital area with three pairs of setae, *ag*₁: 9 (8–10), *ag*₂: 20 (18–23) and *ag*₃: 10 (8–13). Pseudanal opening with three pairs of setae (*ps*₁₋₃).

Legs – Leg I: 90 (83–100); leg II: 57 (50–63); leg III: 55 (47–58); leg IV: 67 (60–73). Chaetotaxy of leg segments as follows (solenidia in parentheses): coxae 2–1–0–0, trochanters 1–1–1–1, femora 4–2–1–1, genua 6(κ)–0–0–0, tibiae 6(φ)–3(φ)–2–2, tarsi 12(2ω)–7(ω)–6(ω)–6(ω).

Gnathosoma – Palp 27 (23–33) long, palptibial claw with a ventral tooth. Chelicera (including moveable digit) 50 (47–58) long, cheliceral fixed digits reduced and movable digits small.

Adult stage. Unknown.

Distribution. Iran (Bagheri, Navaei and Ueckermann, 2010) and Turkey (this paper).

Materials examined. Two deutonymph females from moss, near the brook, 40° 27' 11 N, 37° 16' 39 E, 976 m, Reşadiye, 27. IV. 2011. One deutonymph female from moss and soil, 39° 52' 48N, 39° 20' 25 E, 1980 m, Ahmediye, Erzincan, 03. VI. 2011.

Remarks. *Barbutia iranensis* was originally collected from soil by Reza Navae Bonab and previously was known only in Iran. (Bagheri, Navaei and Ueckermann, 2010). The Turkish specimens are collected from moss, near the brook and soil. The general feature of the Turkish specimen is similar to the type specimen. But the body sizes of Turkish specimens are larger (305/88) than those of the type specimen (290/90); ratio of setae are given Table 1.

Table 1. The ratios of setae of *Barbutia iranensis*.

	Iranian specimens	Turkish specimens
<i>vi:sci</i>	1.0	1.5
<i>ve:sce</i>	1.0	1.2
<i>c</i> ₁ : <i>c</i> ₂	0.5	0.3
<i>c</i> ₁ : <i>d</i> ₁ : <i>e</i> ₁ : <i>f</i> ₁	2.1.2.1:1	1.5:1.2:1:1
<i>vi:vi-vi</i>	0.5	0.5
<i>ve:vi-ve</i>	3.4	3.5
<i>c</i> ₁ : <i>c</i> _{1-c} ₁	0.5	0.3
<i>c</i> _{1-c} ₁ : <i>d</i> _{1-d} ₁ : <i>e</i> _{1-e} ₁ : <i>f</i> _{1-f} ₁	2.6:1.6:1:1	2.7:1.6:1:1

These differences to be minor and therefore consider the Iranian and Turkish specimens conspecific. *Barbutia iranensis* is a newly recorded species for the Turkish fauna.

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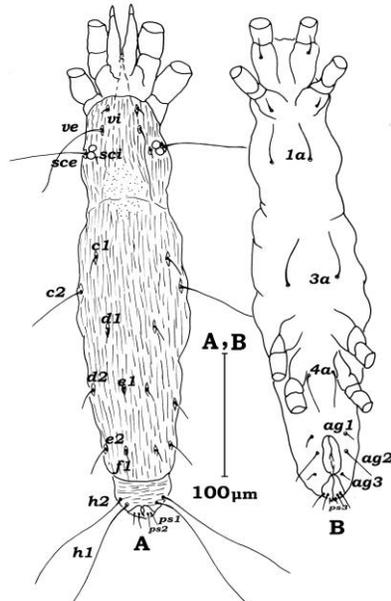
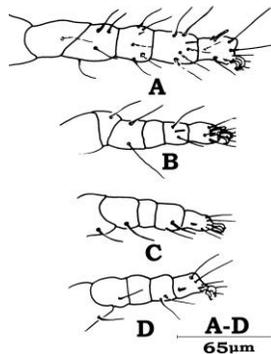


Figure 1. *Barbutia iranensis* (Deutonymph female): (A) Dorsal view, (B) Ventral view.



Figures 2. *Barbutia iranensis* (Deutonymph female): (A) Leg I, (B) leg II, (5C) leg III, (D) leg IV.