**Rafalskia azizsancari** sp. n., a new harvestman (Opiliones: Phalangiidae) from Turkey

Kemal Kurt*, Ersen Aydın Yağmur & Erman Tezcan

Kurt, K., Yağmur, E. A. & Tezcan, E. 2019: *Rafalskia azizsancari* sp. n., a new harvestman (Opiliones: Phalangiidae) from Turkey. — Entomol. Fennica 30: 28–32. https://doi.org/10.33338/ef.79903

A new harvestman species, *Rafalskia azizsancari* sp. n., is described and illustrated based on male specimens collected from Bozdağlar Mountains, İzmir Province, Turkey. Most important differences between the new species and the three other species of the genus are included.

K. Kurt, Şiran Vocational High School, Gümüşhane University, Gümüşhane, Turkey. * Corresponding author’s e-mail: kemalkurtmyo@gmail.com
E. A. Yağmur, Alaşehir Vocational School, Celal Bayar University, Alaşehir, Manisa, Turkey; E-mail: ersen.yagmur@gmail.com
E. Tezcan, Department of Biology, Kilis 7 Aralık University, Kilis, Turkey; E-mail: tezcanereman@gmail.com

Received 11 January 2018, accepted 12 September 2018

1. Introduction

*Rafalskia* Starega, 1963 is a genus of the harvestman family Phalangiidae, established as a subgenus of the genus *Paropilio* by Starega (1963). Subsequently, Silhavi (1965) raised it from subgenus to the rank of genus. The genus *Rafalskia* currently includes four valid taxa, distributed in Bulgaria, Serbia, Greece and Turkey: *R. olympica olympica* (Kulczyński, 1903), *R. olympica bulgarica* Starega, 1963, *R. cretica* (Roewer, 1923) and *R. petrophila* (Martens, 1965).

*Rafalskia cretica* was described by Roewer (1923) from Crete (Greece) as *Metaplatybus creticus* Roewer 1923. Later it was found in Bulgaria (Mitov 2004) and Turkey (Kahramanmaraş, Osmaniye and Gaziantep provinces) (Kurt et al. 2011). *Rafalskia petrophila* was described by Martens (1965) from Karpathos (Greece) in the genus *Metaplatybus* Roewer, 1911. The species was transferred to the genus *Rafalskia* by Starega (1981). *Rafalskia petrophila* is found in Greece and Turkey (Nevşehir and Van provinces) (Martens 1965, Kurt 2014). *Platybus strigosus olympicus* was described by Kulczyński (1903) from Asia Minor (Ulad; Olympus Bithynicus), Roewer (1923) transferred *Platybus strigosus olympicus* to the genus *Metaplatybus*. Later, Starega (1981) transferred *Metaplatybus olympicus* into the genus *Rafalskia*. The species *Rafalskia olympica* were divided into two subspecies as *R. olympica olympica* and *R. olympica bulgarica* by Karaman (2002). *Rafalskia olympica olympica* is an endemic subspecies in Turkey (Bursa and Trabzon province). *Rafalskia olympica bulgarica* is known from Bulgaria, Serbia, and Turkey (Kirkarlı and İstanbul provinces) (Mitov 2012).

The genus is recognized by the following morphological characters: cheliceral second article is sometimes with distinct humps frontally and palpal femur has a basal conical apophysis (Starega 1963, 1976, Silhavi 1965, Karaman 2002).

Here, we describe a new species of the genus
Fig. 1. Rafalskia azizsancari sp. n. (male, paratype). – a. Dorsal view. – b. Ventral view. – c– d. Pedipalp, mesal and lateral views.
**Rafalskia** from the Aegean region of Turkey and compare it to the other species of the genus.

2. **Materials and methods**

The samples were collected in the İzmir Province, Turkey by pitfall traps with car coolant as a fixative. The collection locality is a red pine forest including a thick layer of leaf litter and located close to the Gölcük lake, and thus the habitat was very humid. The specimens examined were preserved in 70% ethanol. All the measurements are in millimetres. The specimens are deposited in the collections of Arachnological Laboratory of Şiran Vocational School, Gümüşhane University (GUSAL), Gümüşhane, Turkey and Alaşehir Zoological Museum, Manisa (AZMM).

3. **Description of Rafalskia azisancari sp. n. Figs 1–2**

**Material.** Holotype: ♂, Turkey, İzmir Province, Bozdağ Mountains (38º18′11.0″ N, 28º02′06.7″ E), 1,211 m a.s.l., 28.VI.2012, E. A. Yağmur leg. (GUSAL). Paratypes: 3♂ 3♀, same data as holotype (2♂ 3♀ in GUSAL, 1♂ in AZMM).

**Diagnosis.** Characterized mainly by morphology of penis (a specific shape of truncus, glans penis dorsally almost flat; ventrally slightly widened), abdomen dorsally without distinct mark, no saddle; cheliceral basal segment covered with dorsal denticles, distal segment apically covered with three or four denticles plus a distinct apophysis (hump), and palpal femur basally with conical apophysis.

**Description.** Male. Body: Almost oval-shaped (Fig. 1a, b), length (first for holotype, range with all type material) 3.20 (2.95–3.20, n = 4), width 1.72 (1.64–1.72, n = 4). Anterolateral angles of prosoma and opening of odoriferous gland with several black denticles. A group of 5–6 black denticles in front of eye mound on each side. Abdominal tergites not distinctly saddle marked, with irregularly spaced microdenticles. Genital operculum, leg coxae and opisthosoma ornamented with ventral setae. Body colour light brown to dark brown.

Eye mound: Trapezoid in shape, large and with 5 or 6 denticles to both sides from median line.

Supracoxal lamellae: Smooth, bearing one spine each.

Chelicerae (Fig. 2a, b): Length of first article 0.56, second article 1.08. Dorsal side of distal part of first article spinulated. Second article frontally covered with setae, with a distinct apophysis. Dorsal side of proximal part of second article spinulated, with 3 or 4 small spines. Chelal fingers elongated, characteristically decussated. Chelicerae light brown.

Pedipalps (Fig. 1c, d): Femur basally with conical apophysis covered with setae. Femur with small distomesal apophysis covered with setae, ventrally with setae and denticles, dorsally and laterally with denticles and sparse setae. Patella covered with setae. Tibia covered with setae, distoventrally with several denticles, ventrobasally slightly enlarged. Tarsus covered with setae and a long row of ventral microdenticles; tarsal claw smooth. Length of palpal segments: femur 1.16, patella 0.56, tibia 0.59, tarsus 0.95; total length: 3.26 (2.98–3.26, n = 4). Palpal tibia yellowish, other parts light brown.

Legs: Strong, round in cross-section. The first pair of legs slightly thicker. Femur covered with microdenticles and setae; patella with dorsal microdenticles; tibia with dorsal and ventral microdenticles and setae; metatarsi with ventral microdenticles and setae; tarsus only with setae. Length of legs: I: 1.69 (Fe) + 0.62 (Pa) + 1.49 (Ti) + 2.06 (Mta) + 3.20 (Ta) = 9.06 (8.8–9.06, n = 4), II: 3.04 + 0.83 + 2.59 + 3.90 + 6.80 = 17.16 (16.5–17.16, n = 4); III: 1.89 + 0.65 + 1.53 + 2.52 + 3.67 = 10.26 (10–10.26, n = 4), IV: 2.74 + 0.76 + 2.01 + 3.71 + 5.03 = 14.25 (13.9–14.25, n = 4). Legs light brown.

Male genitalia (Fig. 2c–f): Truncus penis thin and long, basally wide, narrowed towards subapex; glans dorsally almost flat, ventrally slightly widened, apically with a pair of setae; stylus long. Length of truncus penis: 2.76 (2.51–2.76, n = 4), glans: 0.50. Penis light to dark brown.

Female. Unknown.

**Etymology.** The specific epithet is in honor of Prof. Dr. Aziz Sancar (University of North Carolina, Chapel Hill, NC, USA), who was awarded the Nobel Prize in Chemistry in 2015.
Remarks. *Rafalskia azizsancari* sp. n. can be distinguished from *R. cretica* and *R. petrophila* by the following characters: abdomen has indistinct dorsal mark and no saddle (in *R. cretica* dorsal saddle is distinct, in *R. petrophila* it is slightly distinct); eye mound is covered with 5 or 6 denticles on each side (in *R. cretica* eye mound with 8–10 denticles, in *R. petrophila* with 10 or 11 denticles); cheliceral basal segment has 5 or 6 dorsal denticles (in *R. cretica* with 10 denticles), distal segment has distinct frontal humps, apically covered with 3 or 4 denticles (in *R. cretica* and *R. petrophila* without distinct humps), glans penis is almost rectangular in shape (triangular in *R. cretica* and *R. petrophila*). The comparison of the subspecies *Rafalskia olympica olympica* and *R. olympica bulgarica* with *Rafalskia azizsancari* sp. n. is given in Table 1.
Table 1. Main diagnostic characters of the most closely related taxa of Rafalskia.

| Characters                  | R. azizsancari sp. n.                          | R. olympica bulgarica                                      | R. olympica olympica                                    |
|-----------------------------|------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| Body                        | Dorsal saddle mark not distinct; dark brown; length 2.95–3.20 mm | Dorsal saddle distinct (dorsal saddle indistinct in some specimens) (Karaman 2002: 64, fig. 1a, b; Mitov 2012: 76, fig. 2e); light yellowish to light brown (Karaman 2002); length 4.9–6.3 mm | Dorsal saddle mark unnoticeable (Roewer 1923: 852, fig. 1022; Karaman 2002: 64, fig. 1c); pale yellowish, marbled yellowish brown (Karaman 2002); length 3.8–5.3 mm |
| Colour of chelicerae         | Light brown                                     | Yellowish marbled with brown to dark brown (Karaman 2002) | Yellowish (Karaman 2002)                                |
| Cheliceral second article    | With distinct frontal apophysis (hump), with 3–4 small proximal spines | With distinct frontal hump, only apical setae (Karaman 2002: 65, fig. 2c, d) | With small frontal hump, only apical setae (Karaman 2002: 65, fig. 2h) |
| Penis                       | Glans rectangular, with dorsal and ventral margins almost straight and parallel; truncus 2.51–2.76 mm long; penis light to dark brown | Glans triangular, dorsally curved inward, ventrally bulged, curved outward; truncus 4.5–5.6 mm long (Karaman 2002: 65, fig. 2a, b; Staręga 1963: 291, fig. 4–5); truncus light to dark brown, glans yellow (Karaman 2002) | Glans triangular, dorsally curved inward, ventrally narrowed; truncus 3.8–4.1 mm long (Karaman 2002: 65, fig. 2g); penis yellowish (Karaman 2002) |

Acknowledgements. We are very grateful to Dr. J. C. Cockendolpher (Lubbock, TX, USA) and Dr. Ivo M. Karaman (University of Novi Sad, Serbia) for their advice and valuable comments.

References

Karaman, I. M. 2002: A contribution to the knowledge of the species Rafalskia olympica (Kulczyński, 1903) (Opiliones, Phalangiidae, Phalangiinae). — Arachnologische Mitteilungen, Basel, 24: 62–71. 1617–1631. doi: https://doi.org/10.2298/ABS1404617K
Kulczyński, W. 1903: Arachnoidea in Asia Minore et ad Constantinopolim a Dre. F. Werner collecta. — Sitzungsberichte der K. Akademie der Wissenschaften, Mathematisch-naturwissenschaftliche Klasse Vienna, 112 part I(7): 627–680.
Kurt, K., Snegovaya, N., Demir, H. & Seyyar, O. 2011: New data on the Harvestmen (Arachnida, Opiliones) of Turkey. — Acta Zoologica Bulgarica 63(2): 145–149.
Kurt, K. 2014: Updated checklist of harvestmen (Arachnida: Opiliones) in Turkey. — Archives of Biological Sciences, Belgrade, 66: 1617–1631.
Martens, J. 1965: Über südgäische Weberknechte der Inseln Karpathos, Rhodos und Kos (Arachnoidae, Opiliones). — Senckenbergiana Biologica 46(1): 61–79.
Mitov, P. G. 2004: Harvestmen (Opiliones, Arachnida) of Eastern Rhodopes Mts. (S Bulgaria): 167–179. — In: Beron, P. & Popov, A. (eds), Biodiversity of Bulgaria, 2. Biodiversity of Eastern Rhodopes (Bulgaria and Greece). Pensoft & Nat. Mus. Natur. Hist., Sofia, pp. 167–179.
Mitov, P. G. 2012: Four new harvestmen records from Turkey (Arachnida: Opiliones). — Serket 13: 73–82.
Roewer, C. F. 1923: Die Weberknechte der Erde. Systematische Bearbeitung der bisher bekannten Opilionen. — Gustav Fischer, Jena, 1,116 pp.
Šilhavi, V. 1965: Die Weberknechte der Unterordnung Eupnoi aus Bulgarien; zugleich eine Revision Europäischer Gattungen der Unterfamilien Oligolophinae und Phalangiinae (Arachnoidae, Opiliones). Ergebnisse der zoologischen Expedition des Tschechoslowakischen Akademie der Wissenschaften nach Bulgarien im Jahre 1957 (Teil V). — Acta Entomologica Bohemoslovaca, Praha, 62(5): 369–406.
Staręga, W. 1963: Ein neuer Weberknecht, Paropilus (Rafalskia) bulgaricus subgen. n., sp.n. (Opiliones). — Bulletin de l’Académie Polonaise des Sciences, Varsovie, (Cl. II, Série des Sciences Biologiques) 11(6): 289–292, 2 unnumbered plates.
Staręga, W. 1976: Die Weberknechte (Opiliones, ex Siro- nidae) Bulgariens. — Annales Zoologici, Warszawa 33(18): 287–433.
Staręga, W. 1981: Über Platybunus strigosus (L. Koch, 1867), nebst Bemerkungen über andere Arten der Platybuninae (Opiliones: Phalangiidae). — Bulletin de l’Académie Polonaise des Sciences, Varsovie, Cl. II, Série des Sciences Biologiques 28(8–9): 521–525.