Turkish Journal of Zoology

Volume 34 | Number 3 Article 2

1-1-2010

A new species of Acherontacarus (Acari, Hydrachnidia) from the Taurus Mountains (southern Turkey):Acherontacarus anatolicus n. sp.

YUNUS ÖMER BOYACI

MUHLİS ÖZKAN

HAKAN DİDİNEN

TÜBİTAK

Research Article

Turk J Zool
34 (2010) 291-295
© TÜBİTAK
doi:10.3906/zoo-0902-15

A new species of *Acherontacarus* (Acari, Hydrachnidia) from the Taurus Mountains (southern Turkey): *Acherontacarus anatolicus* n. sp.

Yunus Ömer BOYACI[1,*], Muhlis ÖZKAN[2], Hakan DİDİNEN[1]

[1]Süleyman Demirel Üniversitesi, Su Ürünleri Fakültesi, Eğirdir, Isparta - TURKEY

[2]Uludağ Üniversitesi, Eğitim Fakültesi, Biyoloji Bölümü, Görükle Kampüsü, Nilüfer, Bursa -TURKEY

Received: 18.02.2009

Abstract: A new species of *Acherontacarus* (Acari, Hydrachnidia), *Acherontacarus anatolicus* n.sp., is described from a small stream in Isparta province (southern Turkey). This is the first record of the genus from Turkey; distributional data of the known species are discussed.

Key words: *Acherontacarus anatolicus* n.sp., Hydrachnidia, Turkey, stream

Toros dağlarından *Acherontacarus* (Acari, Hydrachnidia) cinsinin yeni bir türü: *Acherontacarus anatolicus* n. sp.

Özet: *Acherontacarus* (Acari, Hydrachnidia) cinsinin yeni bir türü Türkiye'nin güneyindeki Isparta ilinde, küçük bir nehirden tanımlanmıştır. Bu cinsin Türkiye'den ilk kaydıdır. Ayrıca cinsin bilinen türlerinin dağılımı tartışılmıştır.

Anahtar sözcükler: *Acherontacarus anatolicus* n.sp., Hydrachnidia, Türkiye, akarsu

Introduction

In a recent revision of the superfamily Hydrovolzioidea, Tuzovsky et al. (2001) raised the subfamily Acherontacarinae Cook, 1967 to family rank. In total, 13 species of the genus *Acherontacarus* Viets, 1932 are known from interstitial and superficial waters of southern Europe, northern Africa, and the Canary Islands: *A. halacaroides* Viets, 1932 and *A. fonticolus* Viets, 1934 (Montenegro, Serbia, Macedonia); *A. rutilans* Angelier, 1951 (Corsica, Sardinia, Spain, Morocco); *A. vietsi* Angelier, 1951 (Corsica); *A. cedro* Lundblad, 1962 (Canary Islands); *A. bicornis* Cook, 1974 (Iberian Peninsula); *A. cicolanii* Bader, 1983 (Sardinia); *A. raphani* Gerecke and Benfatti, 2004 (Greece); *A. cyprioticus* Gerecke and Benfatti, 2004 (Cyprus); *A. ruffoi* Gerecke and Benfatti, 2004 (Spain); *A. tuberculatus* Bader, 1989 (Algeria, Spain); *A. dividuus* (Bader, 1989) (Algeria), and *A. nicoleiana* Valdecasas, 2005 (France).

* E-mail: yboyaci@sdu.edu.tr

The new species described here from a small stream in Isparta province is the first species of *Acherontacarus* from Turkey (Erman et al., 2007).

Material and methods

The new species was collected in a small stream using plankton net and a mud sieve apparatus, an area of southern Turkey characterized by a Mediterranean climate with dry periods. Two male individuals were found. All previous findings of *Acherontacarus* have been in the interstitial environment or surface waters.

We follow Cook's (1974) terminology for the description of the morphology. It is simple and intuitive, and is more accessible to the interested reader who is not a specialist. All measurements are in micrometers.

Results

Genus *Acherontacarus* K. Viets, 1932

Syn: *Acherontacarellus* Lundblad, 1962; *Acherontacaropsis* Cook, 1967; *Neoacherontacarus* Bader, 1989

***Acherontacarus anatolicus* nov. sp.**

(Figures 1–2)

Type specimens

Holotype: Adult male, small brook near the Köprüçay river basin, Turkey, 13 March 2008, leg. Y.Ö.Boyacı. One male, same site and date as paratype. Type materials are deposited in Eğirdir Fisheries Faculty, S.D.University, Isparta, Turkey.

Diagnostic features

Dorsal shields with lateral tubercles at posterior; with straight posterior margin; 4 pairs of setae located on anterior plate and 4 pairs of setae on posterior plate. Gonopore between one pair of genital plates flanked by posterolateral platelets and located posterior to the anteromedial and anterolateral platelets and III-Leg coxal plates. Posterolateral platelets anteriorly concave embracing genital plates, reaching posterior margin of excretory pore plate. P-III with ventral extension enlarged to form groove to base; all palp segments deep concave at lateral margin.

Description

Male

Dorsal shields with lateral tubercles at posterior. Body length 875, width 600. Dorsum with large posterior plate length 670 , width 480 , surrounded by 10 pairs of small platelets, 4 pairs with setae, alternating, beginning with the anterior platelet and a larger anterior plate length 135 , width 420 ; with straight posterior margin; 4 pairs of setae located on anterior plate and 4 pairs of setae on posterior plate.

Venter: Gonopore between one pair of genital plates flanked by posterolateral platelets and located posterior to the anteromedial and anterolateral platelets and III-Leg coxal plates, genital field length 75, width 75; posterior part of excretory pore plate length 280, width 210; posterolateral platelets anteriorly concave embracing genital plates, reaching posterior margin of excretory pore plate.

Palp: P-III with ventral extension enlarged to form groove to base; all palp segments deep concave at lateral margin; capitulum length 225. Palp segments lengths and setation (in parentheses): P-I 13, P-II 78 (5 setae), P-III 90 (2 setae), P-IV 108 (3 normal setae and 2 stout ventral setae), P-V 23.

Leg: Dorsal length and setation (in parentheses) of leg segments: I-Leg-2 210, I-Leg-3 100, I-Leg-4 165, I-Leg-5 150, I-Leg-6 110, II-Leg-1 30, II-Leg-2 218, II-Leg-3 105, II-Leg-4 180, II-Leg-5 163, II-Leg-6 120, III-Leg-2 210, III-Leg-3 90, III-Leg-4 105, III-Leg-5 120, III-Leg-6 145, IV-Leg-1 40, IV-Leg-2 235, IV-Leg-3 50, IV-Leg-4 240 (four small setae in ventral side), IV-Leg-5 180 (ten setae), IV- Leg-6 185 (10 dorsal setae, 10 stout lateral setae, plus distal setae).

Female: unknown.

Etymology

The species is named from Anatolia.

Distribution

Only known from the locus typicus (Taurus Mountains, southern Turkey).

Discussion

Acherontacarus anatolicus n. sp. belongs to a species group, characterized by the presence of stout

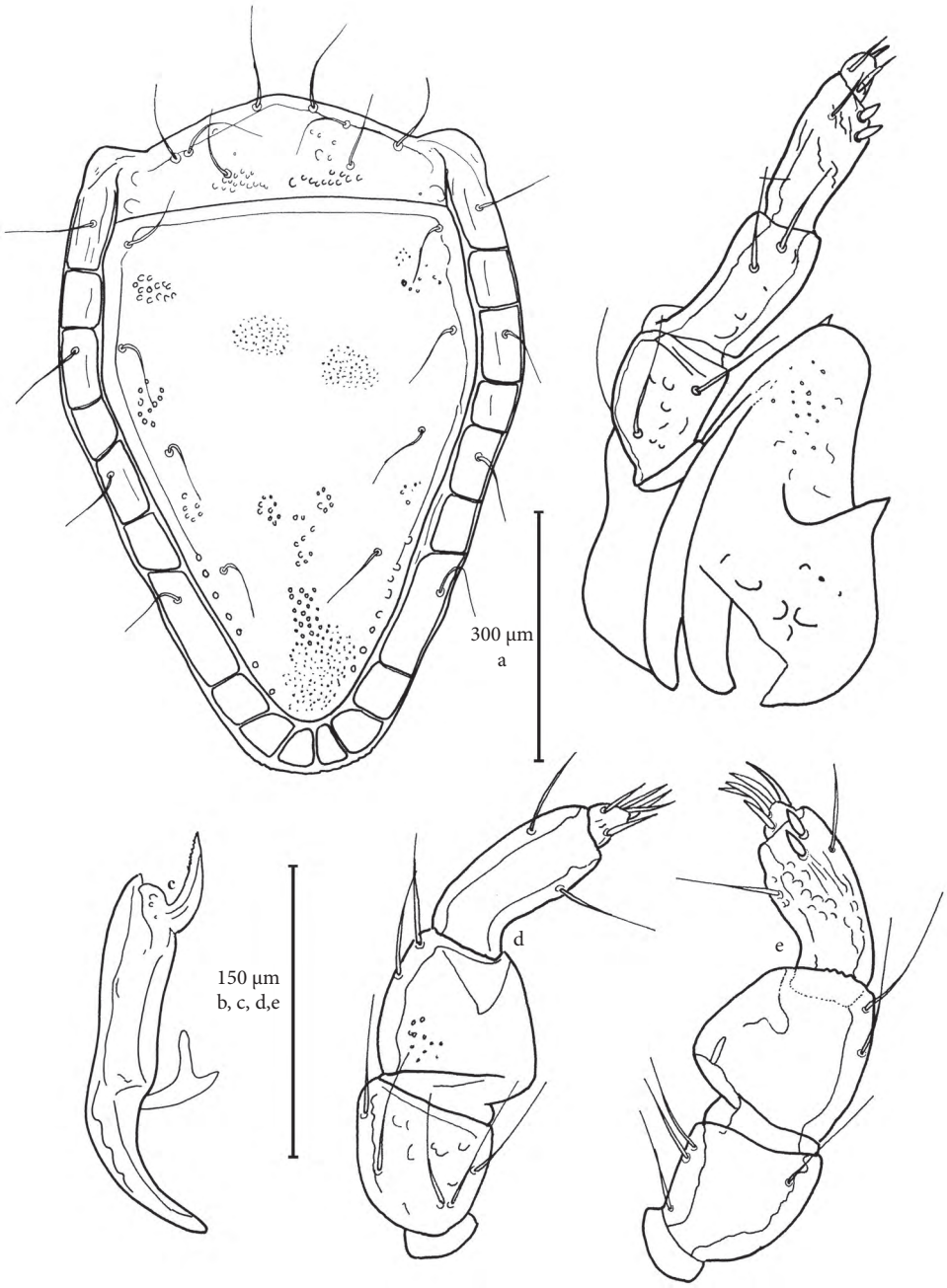

Figure 1. *Acherontacarus anatolicus* n.sp. male, a) idiosoma, dorsal view; b) gnathosoma lateral; c) chelicer; d) palp medially; e) palp laterally.

setae on IV-Leg-6 segment in the male, together with *A. dividuus, A. vietsi, A. bicornis, A. tuberculatus,* and *A. nicoleiana.*

Acherontacarus vietsi can be easily distinguished by the presence of only 2 thick setae on IV-Leg-6 and *A. bicornis* has the thick setae on the expanded distal half of IV-Leg-6. In *A. anatolicus* n. sp. and *A. nicoleiana*, IV-Leg-6 is not expanded; *A. anatolicus* differs from the latter in a higher number of stout setae (7-9 in *A. nicoleiana*).

In *A. dividuus* and *A. anatolicus* n. sp., IV-Leg-5 is approximately equal in size as IV-Leg-6 while it is

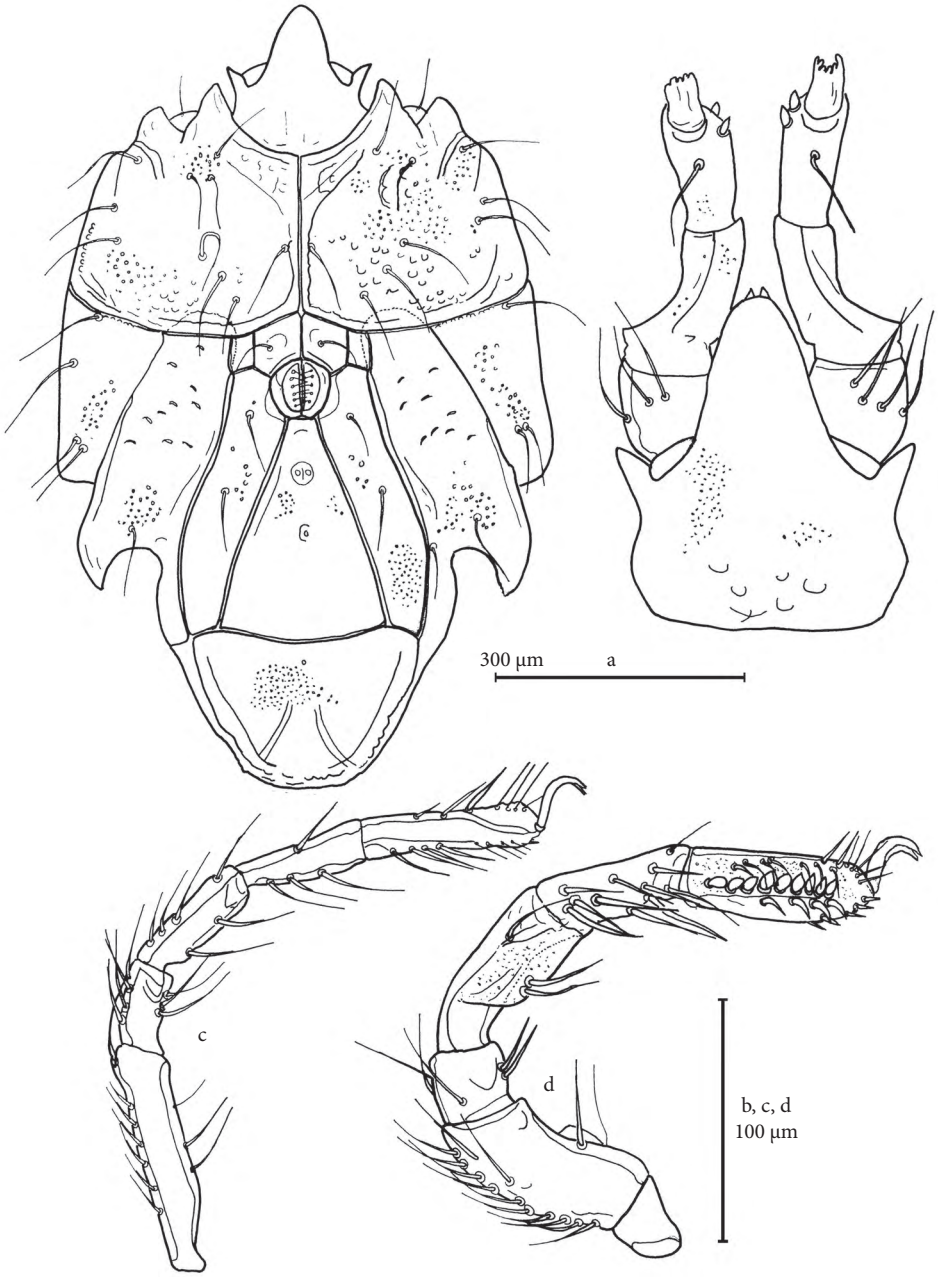

Figure 2. *Acherontacarus anatolicus* n.sp., male, a) idiosoma, ventral view; b) gnathosoma dorsal view; c) III-Leg; d) IV-Leg.

longer in *A. nicoleiana*. The posterolateral platelets reach to the posterior margin of the excretory pore plate in *A. anatolicus* n. sp., but not in *A. nicoleiana.*

Further *A. anatolicus* nov. sp. differs from all known A*cherontacarus* species by P-III bearing the strange ventral extension, enlarged to form groove to base (Gerecke and Benfatti, 2004).

Acknowledgements

This article is a section of the project (107 T 321) supported by TÜBİTAK.

References

Angelier, E. 1954. Contribution l'etude de la faune d'eau douce de Corse. Acariens psammiques (Hydrachnellae et Porohalacaridae). Vie et Milieu, 4: 505–539.

Bader, C. 1983. Zwei neue Wassermilbenarten aus dem Interstitial des Mittelmeergebietes. Rivista di Idrobiologia, 22: 169–177.

Bader, C. 1989. Wassermilben (Acari: Hydrovolziidae et Hydrachnellae) aus Algerien. Bijdragen tot de Dierkunde, 59: 33–42.

Cook, D.R. 1974. Water mites genera and subgenera. Memoirs of the American Entomological Institute, Michigan.

Erman, O., Özkan, M., Ayyıldız, N. and Doğan, S., 2007. Checklist of the mites (Arachnida: Acari) of Turkey. Second supplement. Zootaxa, 1532: 1-21.

Gerecke, R. and Benfatti, D. 2004. The water mites of the genus *Acherontacarus* (Acari, Acherontacaridae): a revision. Studi Trent. Sci. Nat., Acta Biol., 81: 53-77.

Tuzovsky, P., Benfatti, D. and Gerecke, R. 2001. The water mite family Acherontacaridae Cook, (1967) nov. stat. and diagnosis of the superfamily Hydrovolzioidea Thor (1905) (Acariformes, Hydrachnidia). Acarologia, 41: 451–473.

Valdecasas, A.G. 2005. The first record of *Acherontacarus* (Acari, Hydrachnidia) in continental France, with a key to the described species of the genus. Journal of Natural History, 39: 3137–3149.

Viets, K. 1932. Dritte Mitteilung über Wassermilben aus unterirdischen Gewässern. Zoologischer Anzeiger, 100: 292–299.

Viets, K. 1934. Sechste Mitteilung über Wassermilben aus unterirdischen Gewässern. Zoologischer Anzeiger, 105: 273–281.