



First record of *Curteria episcopalis* (C. L. Koch, 1837) (Acari: Erythraeidae) from Türkiye

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Abstract

Curteria episcopalis (C. L. Koch, 1837) is recorded for the first time from Türkiye, based on six free-living adults from Erzincan (north-eastern) and Muğla (south-western) provinces. Diagnoses and morphometric data for adults are given. The record raises the number of *Curteria* species known from Türkiye to three.

Keywords: Erythraeinae, fauna, new record, Parasitengona, Türkiye.

1. Introduction

The family Erythraeidae Robineau-Desvoidy, 1828 (Acari: Prostigmata: Parasitengona) is one of the most species-rich families of terrestrial Parasitengona, with a heteromorphic life cycle: the deutonymph and adult are free-living predators, the larva an ectoparasite of arthropods (Wohltmann et al., 2007; Mağol and Wohltmann, 2012).

Within the subfamily Erythraeinae Robineau-Desvoidy, 1828, the genus *Curteria* Southcott, 1961 is characterized by the absence of palpal conalae. It was erected by Southcott (1961) with *Morieria curticristata* Willmann, 1951 as the type species, and redefined by Gabryś (1992), who described *C. southcotti* from Poland and transferred *C. episcopalis* (C. L. Koch, 1837) to *Curteria*. The larvae of *C. episcopalis* and *C. southcotti* were described by Wohltmann et al. (2007), and Saboori et al. (2009) synonymized *Zhangiella* Saboori, Çobanoğlu & Bayram, 2007 with *Curteria*. The genus now comprises six species: *C. curticristata* (Willmann, 1951), *C. duzgunesae* (Saboori, Çobanoğlu & Bayram, 2007), *C. episcopalis* (C. L. Koch, 1837), *C. fageli* (Cooreman, 1956), *C. graeca* (Beron, 1988) and *C. southcotti* Gabryś, 1992 (Gabryś, 1992; Mağol and Wohltmann, 2012).

In Türkiye, the genus was previously represented by two species: *C. curticristata* (Willmann, 1951), recorded by Karakurt (2021) from a single deutonymph, and *C. duzgunesae* (Saboori, Çobanoğlu & Bayram, 2007), described from

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a larva from Ankara (as *Zhangielliella duzgunesae*). The genus has also been recorded from neighbouring Iran, where *C. episcopalis* was reported from a larva (Keshavarz Jamshidian et al., 2014).

During faunistic surveys in Türkiye, six free-living adults of *Curteria episcopalis* were collected: four in Erzincan province and two in Muğla province. The species is reported here for the first time from Türkiye, the third *Curteria* species in the country; an adult diagnosis, morphometric data, illustrations and a comparison with congeners are provided

2. Materials and methods

The Erzincan material was collected in 2024-2025 in the Çayırılı district (north-eastern Türkiye), from grassy soil and shrub litter at three subalpine localities (Çataksu, Kavaklık and Turnaçayı), and extracted with Berlese funnels; one specimen came from a Malaise trap at Çataksu. Two further postlarva were collected by pitfall trapping in a maquis-olive grove at Kırıkişlacık (Milas, Muğla Province, south-western Türkiye; 37°16'27.9"N, 27°33'12.6"E), 28 June-26 July 2010. Adults were sorted under a stereomicroscope and preserved in 96% ethanol.

Specimens were prepared following Krantz and Walter (2009): cleared in 9% KOH, bleached in 50% lactic acid, mounted in Hoyer's medium, then dried and ringed. Measurements (in µm; minimum-maximum for more than one specimen) and photomicrographs were taken under Olympus BX63 (differential interference contrast; Cellsens Dimension) and Leica DM3000/DM4000 (LAS) microscopes. Terminology and abbreviations follow Southcott (1961), Gabryś (1992), Wohltmann et al. (2007) and Mağol (2010). Specimens are deposited in the Acarology Museum, Erzincan Binali Yıldırım University, Türkiye.

Abbreviations: AL - nonsensillary setae of the anterior sensillary area; ASens, PSens - anterior and posterior sensillary setae; SBa, SBp - distance between the bases of the anterior and of the posterior sensillary setae; ISD - distance between the anterior and posterior sensillary areas; MDS, PDS - mid-dorsal and posterodorsal idiosomal setae; MVS, PVS - midventral and postventral idiosomal setae; PaTr, PaFe, PaGe, PaTi, PaTa - palp trochanter, femur, genu, tibia and tarsus; Ti, Ta - tibia and tarsus; L - length; W - width; H - height.

3. Results and Discussion

Family Erythraeidae Robineau-Desvoidy, 1828

Subfamily Erythraeinae Robineau-Desvoidy, 1828

Genus *Curteria* Southcott, 1961

Curteria Southcott, 1961: 555. Type species (by original designation): *Morieria curticristata* Willmann, 1951.

Diagnosis (adult and deutonymph). Two eyes on each side, at the posterior half of the crista metopica. Crista metopica present, the anterior sensillary area reduced, its border with the scutum indistinct. Dorsal idiosomal and leg setae simple, spiniform. Legs without serratae; palps without conalae (Southcott, 1961; Gabryś, 1992).

Curteria episcopalis (C. L. Koch, 1837)

Rhyncholophus episcopalis C. L. Koch, 1837.

Erythraeus flavus Oudemans, 1903 (nymph); synonymized by Gabryś, 1992.

Curteria episcopalis (C. L. Koch, 1837): Gabryś, 1992: 252 (comb. nov.).

Material examined: **Erzincan**, Çayırılı, Çataksu, 40°00'59"N, 40°15'13"E, 2105 m, 10.08-20.09.2024, 1 adult (Malaise trap; coll. Ç. Balcı; BLC-16-M-1); **Erzincan**, Çayırılı, Çataksu, 40°00'59.6"N, 40°15'12.1"E, 2108 m, 15.09.2025, 1 adult (coll. Ç. Balcı; BLC-318); **Erzincan**, Çayırılı, Kavaklık, 39°45'26.1"N, 39°59'45.7"E, 1980 m, 19.05.2025, 1 adult (coll. Ç. Balcı; BLC-232); **Erzincan**, Çayırılı, Turnaçayırı, 39°51'40.8"N, 39°43'57.9"E, 2324 m, 18.05.2025, 1 adult (coll. Ç. Balcı; BLC-221); **Muğla**, Milas, Kıyıkışlacık, 37°16'27.9"N, 27°33'12.6"E, 28.06-26.07.2010, 2 adults (pitfall trap; coll. M. Elverici). Sex not determined. All specimens deposited in the Acarology Museum, Erzincan Binali Yıldırım University.

Diagnosis (adult). Based on the four Erzincan specimens; the two Muğla specimens agree in all diagnostic characters and are listed separately in Table 3.1. Idiosoma 1200-1277 long, 875-950 wide, oval; metallic green in life. Two double, almost sessile eyes at the posterior part of the crista metopica; anterior sensillary area weakly sclerotized, with six nonsensillary AL setae (85-90); ASens (105-120) slightly shorter than PSens (110-124) (Fig. 3.1). Palp tibia elongate, with a clawed apex and basal denticle; palp tarsus elongate, clavate; palps without conalae (Fig. 3.2). Dorsal opisthosomal setae uniform, rigid, spiniform, almost smooth proximally, more densely setulose distally (MDS 39-45/62-67, PDS 45-48/60-70); ventral setae similar but more slender (MVS 35-40/52-55, PVS 50-53/68-72) (Fig. 3.3). Coxae I-II and III-IV fused. Legs relatively short; tarsus I slender, elongate (180-194 × 67-71; L/W 2.6-2.7), as high as tibia I is wide; tibia I 280-305 long. Tarsus I with a conical famulus; vestigialae slightly expanded, placed individually in the dorsodistal parts of tibia I and genua I and II (Fig. 3.4).

Table 3.1. Morphometric data (µm) of the adults of *Curteria episcopalis* from Erzincan and Muğla provinces, Türkiye.

Character	Erzincan, Çayırılı (n = 4)	Muğla, Milas (n = 2)
IL (idiosoma length)	1200-1277	1143-1480
IW (idiosoma width)	875-950	837-983
L	333-335	359-454
W	57-60	53-56
ASens	105-120	108
PSens	110-124	126
SBa	12-13	17-23
SBp	20-21	17-20
ISD	235-257	278-350
AL (number)	6	6-7
AL (length)	85-90	100-106
MDS	39-45 / 62-67	34-71
PDS	45-48 / 60-70	38-73
MVS	35-40 / 52-55	41-92
PVS	50-53 / 68-72	30-86
Ta I (L)	180-194	264-300
Ta I (W)	67-71	107-125
Ta I (L/W)	2.6-2.7	2.4-2.46
Ti I (L)	280-305	475-534
PaTr (L)	57-61	55-56
PaFe (L)	160-178	209-255
PaFe (W)	89-91	118-145
PaGe (L)	99-101	122-146
PaGe (W)	50-52	70-81
PaTi (L)	80-85	91-118
PaTi (W)	35-38	33-52
PaTa (L)	68-69	77-87
PaTa (W)	20-24	34-38



Figure 3.1. *Curteria episcopalis*, adult, crista metopica and scutum with eye.

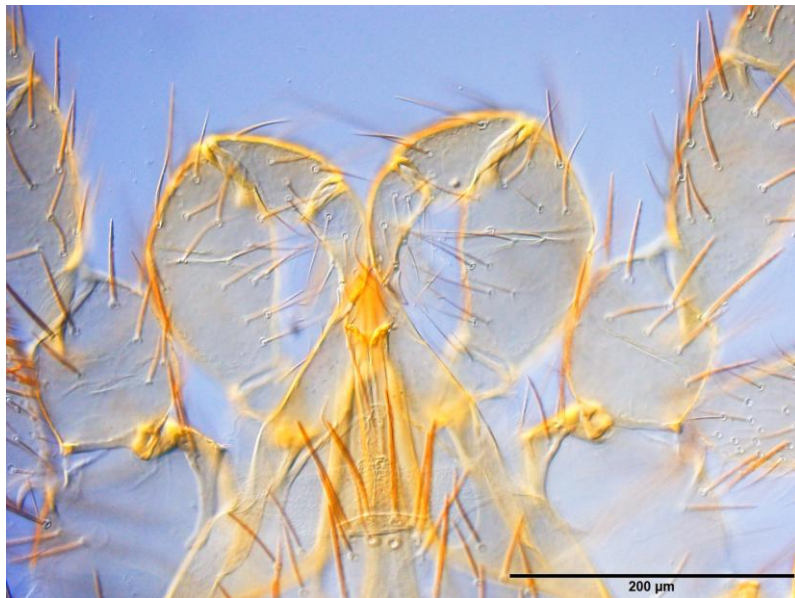


Figure 3.2. *Curteria episcopalis*, adult, gnathosoma.

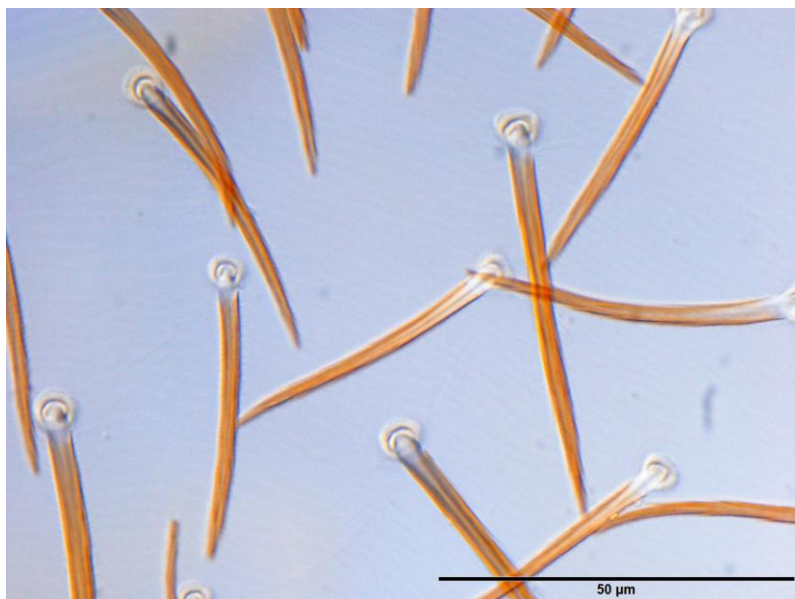


Figure 3.3. *Curteria episcopalis*, adult, dorsal idiosomal setae.



Figure 3.4. *Curteria episcopalis*, adult, vestigialae of tibia I.

Distribution: Finland, Germany, Poland and the Netherlands (Wohltmann et al., 2007; Mağol and Wohltmann, 2012); Iran (as larva; Keshavarz Jamshidian et al., 2014). New to the Türkiye fauna (Erzincan and Muğla provinces; present study).

Remarks. The Turkish specimens agree with the redescription based on Polish specimens (Gabryś, 1992) in having the double eyes in the posterior part of the crista metopica, lacking conalae and serratae, possessing rigid spiniform dorsal setae, and showing slightly expanded vestigialae of tibia I and genua I-II. They are on the whole smaller than the Polish females (idiosoma 1140-2200 long, 770-1463 wide; ASens 128-152, PSens 150-170 vs. 105-120 and 110-126 here); such variation is normal in erythraeids (Wohltmann and Mağol, 2012). The AL setae (six or seven) are at the lower end of the range for the species (six to nine; Gabryś, 1992).

Some differences in body size and leg length were observed between our specimens collected from the two different localities. The Muğla specimens are larger (idiosoma up to 1480 vs. 1277), with a longer and stouter leg I (tarsus I 264-300 × 107-125 vs. 180-194 × 67-71; tibia I 475-534 vs. 280-305) and longer palps (palp femur 209-255 vs. 160-178); tarsus I is proportionally stouter (L/W 2.4-2.46 vs. 2.6-2.7), and the AL setae are slightly more numerous and longer (six to seven, 100-106 vs. six, 85-90 (Wohltmann and Mağol, 2012)). Since all other characters agree, these differences are interpreted as intraspecific geographic variation.

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