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New records of Erythraeidae mites (Acari: Trombidiformes) from Syria with additional morphological data on some species

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To date, only five erythraeid species are known from Syria, namely: *Leptus horiacus* Haitlinger, 1994, *L. tammuzi* Haitlinger, 1994, *Erythraeus* (*Erythraeus*) *phalangoides* (De Geer, 1778), *E.* (*E.*) *adanaensis* Saboori and Çobanoğlu, 2010, and *E.* (*Zaracarus*) *didonae* Haitlinger, 2000 (Haitlinger, 1994; Barbar 2018).

In this paper, we present additional new records of the family Erythraeidae collected from natural vegetation in three localities in Latakia governorate, Syria: Attabiyyat (35° 30' 24" N, 35° 46' 49" E, 45 m a.s.l., 23 April 2019); Slanfeh (35° 60' 70" N, 36° 22' 17" E, 1150 m a.s.l., 20 April 2021); and in Alhafah (35° 60' 21" N, 36° 11' 50" E, 350 m a.s.l., 20 April 2021). Mites were removed from leaves using the "dipping-checking-washing-filtering" method of Boller (1984). They were mounted on slides in Hoyer's medium and were dried in an oven at 40 °C for one week. The specimens were examined using an Olympus® CH20 microscope at 400 and 1000× magnifications and some mite body parts of specimens were photographed using a mobile phone camera (13 megapixels) fixed on the eyepiece lens. Some new records were measured, and measurements were compared with those of original descriptions. Measurements are given in micrometers (µm). The terminology and abbreviations follow those of Welbourn and Young (1987) and Southcott (1988) and their modifications (Haitlinger 1999, 2013), and those proposed by Wohltmann *et al*. (2006) and Saboori *et al*. (2009). The specimens were deposited in the Arthropod Collection of the Department of Plant Protection, Faculty of Agriculture, Al-Baath University, Homs, Syria.

The results of identifications showed the presence of 26 larval and postlarval specimens of Erythraeidae belonging to seven species, all of which are recorded for the first time from Syria and presented thereafter.

Abrolophus artemisiae (Schrank, 1803) (Figs. 1–2)

Specimen collected – Slanfeh: one female on *Cedrus libani* (A. Richard), Pinaceae, 20 April 2021.

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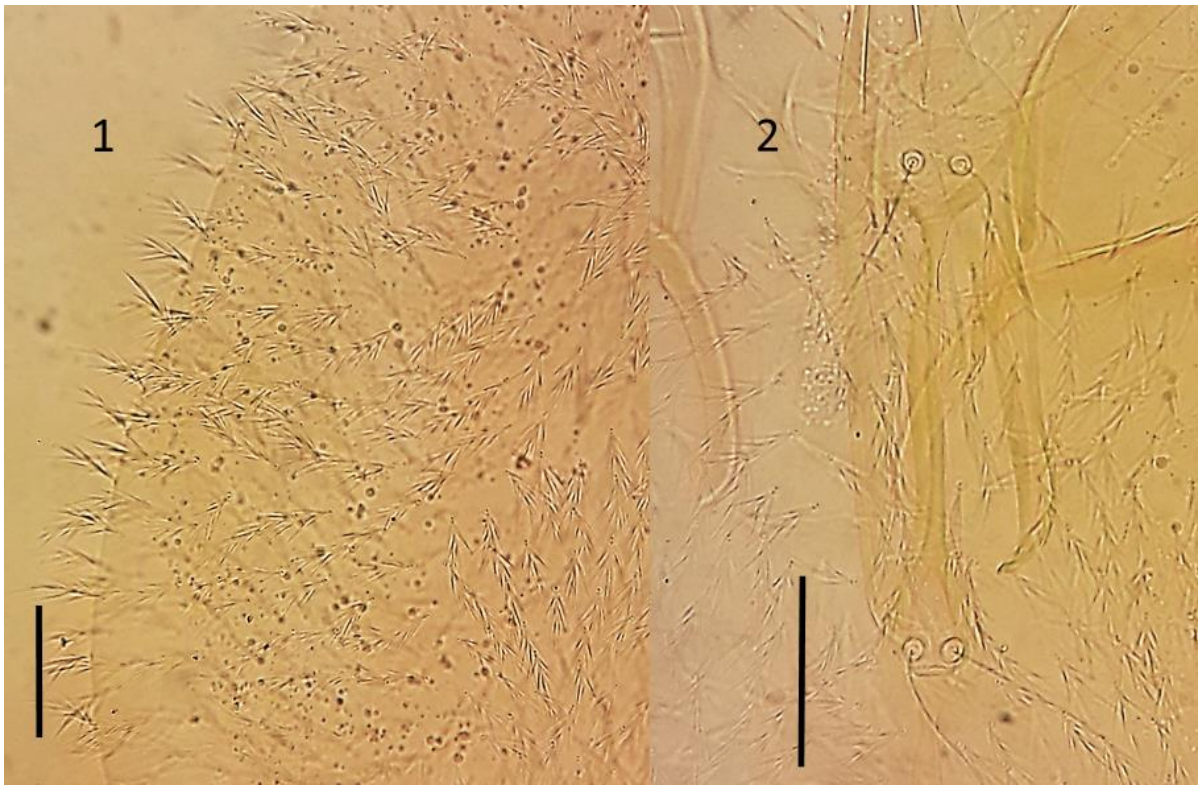
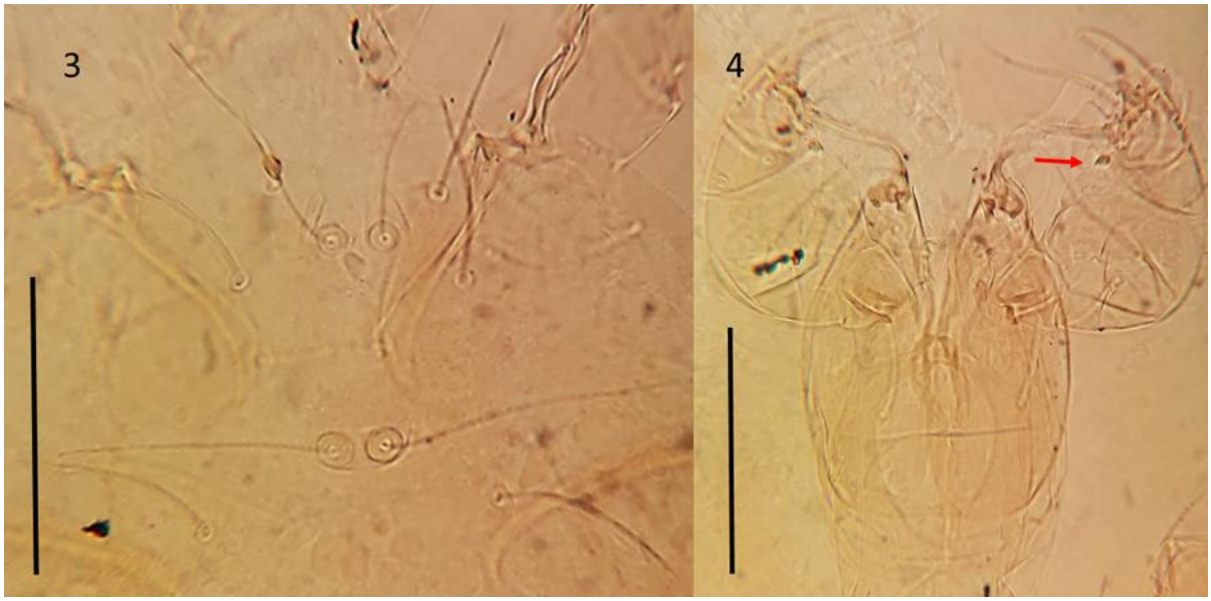
Abrolophus bochkovi Hakimitabar, Saboori & Fadaei, 2020 (Figs. 3–4)

Specimen collected – Attabiyyat: one larva on *Salvia verbenaca* Linnaeus, Lamiaceae, 23 April 2019.

Remarks – The Syrian specimen is very close to those of the original description (Hakimitabar *et al*. 2020) except for having shorter AP = 17 (vs. 20–25), having more number of setae between Cx I–II, excluding sternal setae (*1a*) (6 vs. 4), and having less number of setae between Cx II–III (15 vs. 16) (Table 1).



Figures 1–2. *Abrolophus artemisiae* (adult) – 1. Dorsal idiosomal setae, 2. Sensillary area of crista metopica. Scale bar = 50 μm.



Figures 3–4. *Abrolophus bochkovi* (larva) – 3. Setae in scutal area; 4. Projection palpal femur. Scale bar = 50 μm.

Table 1. Metric data and number of dorsal and ventral setae of Syrian *Abrolophus bochkovi*, *Balaustium nikae*, *B. ryszardi* and *Curteria duzgunesae* larvae.

Character	*A. bochkovi* (n = 1)	*B. nikae* (n = 4)	*B. ryszardi* (n = 4)	*C. duzgunesae* (n = 1)
IL	403	240–373	272–300	295
IW	248	191–276	200–212	219
L	51	-	55–64	94
PSB	-	-	18–16	-
AW	28	25–30	23	78
MW	-	32–41	24–27	-
PW	48	54–60	42–48	80
AL	30	20–21	12–15	52
ML	-	20–22	16–19	-
PL	32	23–28	15–16	37
ASens	25	30–37	21–24	45
PSens	48	49–58	33–44	83
ISD	37	46–48	37–40	58
AP	17	23–32	22–23	46
AA	9	9–12	10	14
SB	7	11–15	10	16
GL	92	73–80	62–73	104
DS Min.	23	18–23	14–17	28
DS Max.	30	25–30	17–18	35
PDS Min.	28	21–27	17–0	30
PDS Max.	35	28–32	22–24	35
PaScTrv	-	22–24	25–29	-
PaScFed	32	31–37	28–29	55
PaScFev	28	-	-	-
PaScGed	-	22–24	19-23	45
PaScGev	-	22–23	18–19	-
1a	30	35	28–31	53
2a	25	25–28	22–23	44
3a	23	18–19	13–16	38
1b	29	20–35	28–32	58
2b	23	27–30	24–28	-
3b	23	27–28	23–27	-
***2b*$_1$**	-	-	-	23
***2b*$_2$**	-	-	-	25
***2b*$_3$**	-	-	-	35
***2b*$_4$**	-	-	-	35
***3b*$_1$**	-	-	-	24
***3b*$_2$**	-	-	-	24
***3b*$_3$**	-	-	-	28
Ta I (L)	46	55–64	42–55	92
Ta I (H)	23	21–23	18–23	30
Ti I	53	64–69	51–55	101
Ge I	48	62–64	49–55	92
Tf I	23	35–39	25–30	55
Bf I	30	32–37	23–30	58
Tr I	26	28–32	23–27	44

Table 1. Continued.

Character	*A. bochkovi* (n = 1)	*B. nikae* (n = 4)	*B. ryszardi* (n = 4)	*C. duzgunesae* (n = 1)
Cx I	46	41–46	36–39	46
Leg I	272	318–356	253–290	488
Ta II (L)	35	46–51	40–48	83
Ta II (H)	21	16–22	13–19	26
Ti II	53	51–58	41–42	93
Ge II	46	48–51	39–41	87
Tf II	23	27–29	20–23	57
Bf II	28	23–28	18–22	53
Tr II	30	23–28	20–21	41
Cx II	53	46–54	38–40	64
Leg II	268	271–288	218–229	478
Ta III (L)	35	46–51	40–44	92
Ta III (H)	23	17–19	12–18	27
Ti III	68	62–69	46–50	127
Ge III	55	54–55	46–48	103
Tf III	28	33–37	28	63
Bf III	28	24–28	19–28	56
Tr III	26	25–28	18–21	46
Cx III	55	46–51	39–48	63
Leg III	285	294–315	243–258	550
IP	825	883–952	727–777	1516
fD	43	60–78	63–68	35
fV	18	34–40	40–52	14
Setae between Cx I-II	6	-	-	-
Setae between Cx II-III	15	16–19	15–21	-

Abrolophus kazimierae (Haitlinger, 1986) (Figs. 5–6)

Specimens collected – Slanfeh: two larvae on *Paeonia corallina* Retzius, Poeoniaceae, 20 April 2021; Alhafah: one larva on *Quercus calliprinos* Webb, Fagaceae, 20 April 2021.

Abrolophus quisquiliarus (Hermann, 1804) (Figs. 7–8)

Specimens collected – Attabiyyat: eight deutonymphs on *S. verbenaca*, 23 April 2019; Alhafah: one deutonymph on *Q. calliprinos*, 20 April 2021.

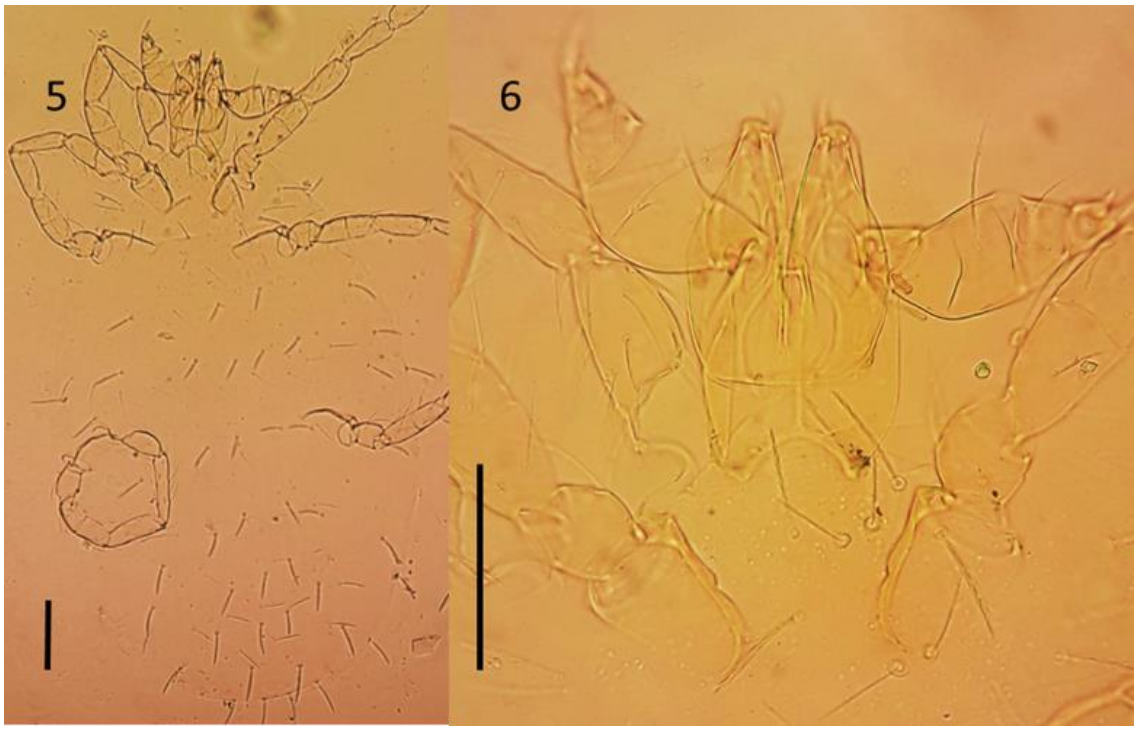
Balaustium nikae Haitlinger, 1996 (Figs. 9–10)

Specimens collected – Alhafah: four larvae on *Sarcopoterium spinosum* (Linnaeus), Rosaceae, and one larva on *Q. calliprinos*, 20 April 2021.

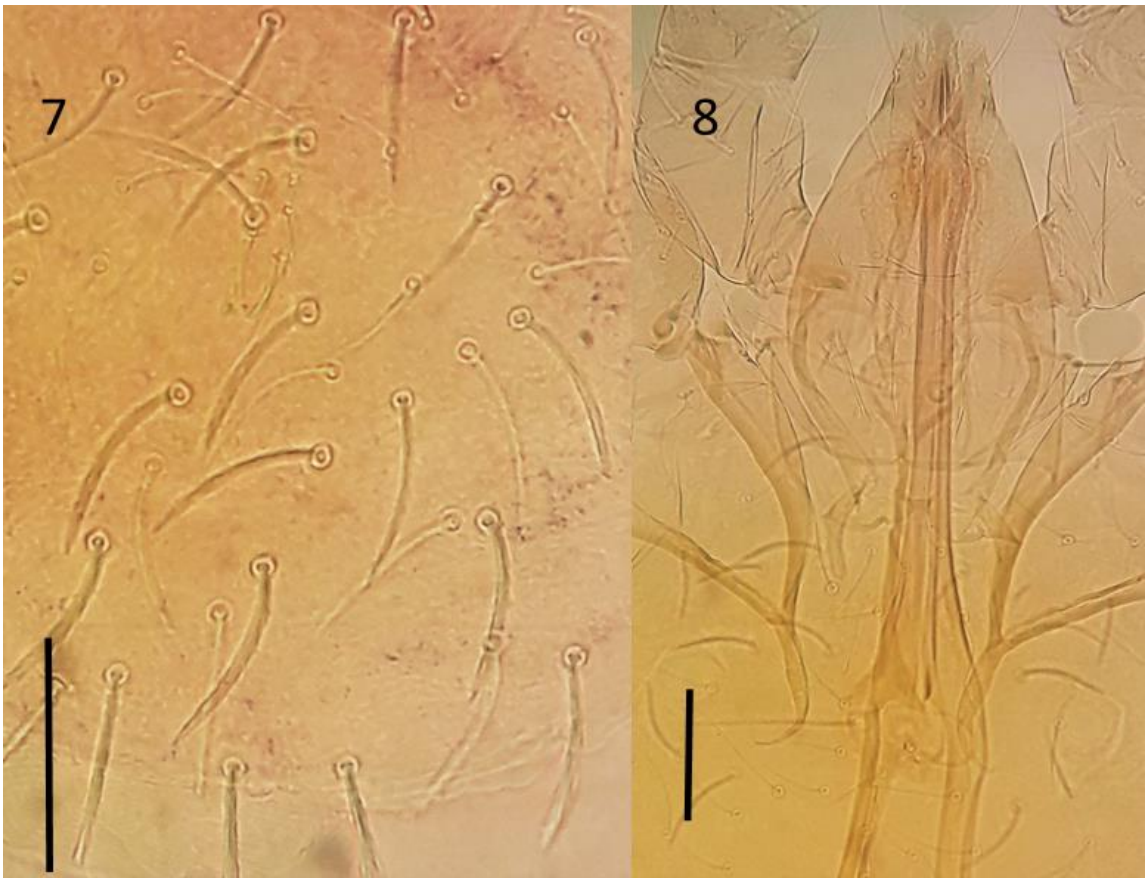
Remarks – Comparing measurements of Syrian specimens with those provided by Haitlinger (2022), the Syrian larvae seem having longer MW (32–41 vs. 21–33) and shorter PL (23–28 vs. 24–50) (Table 1).

Balaustium ryszardi Šundić & Noei, 2021 (Figs. 11–12)

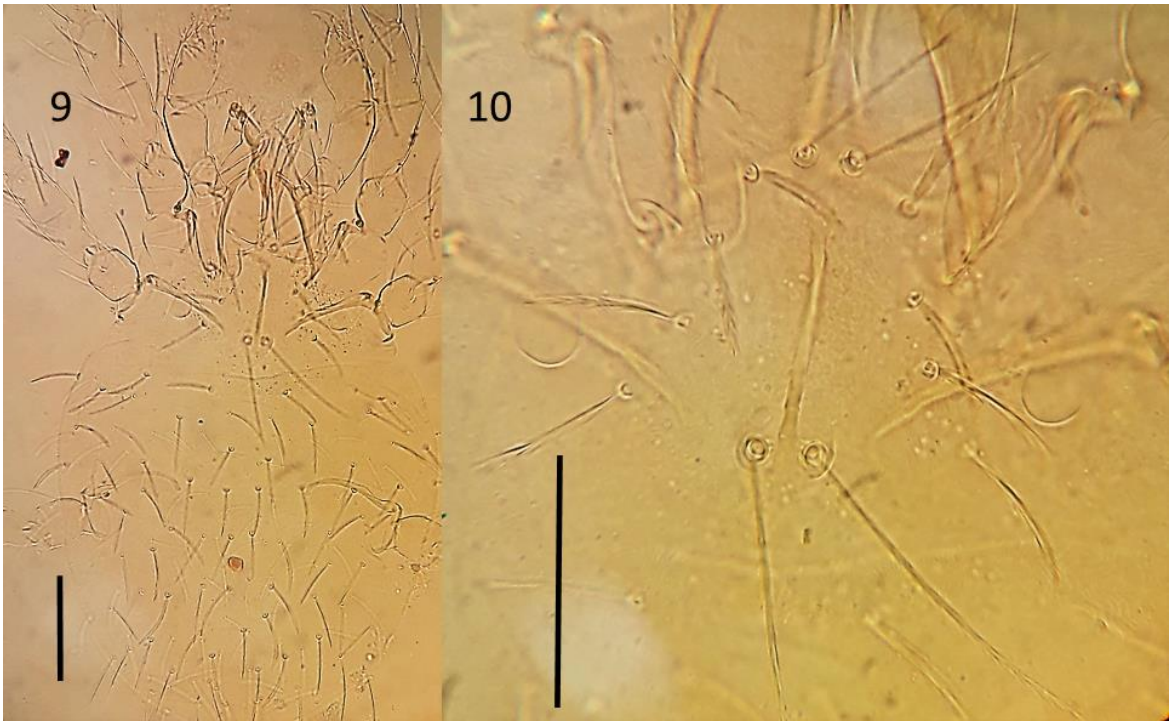
Specimens collected – Slanfeh: six larvae on *P. corallina*, 20 April 2021.



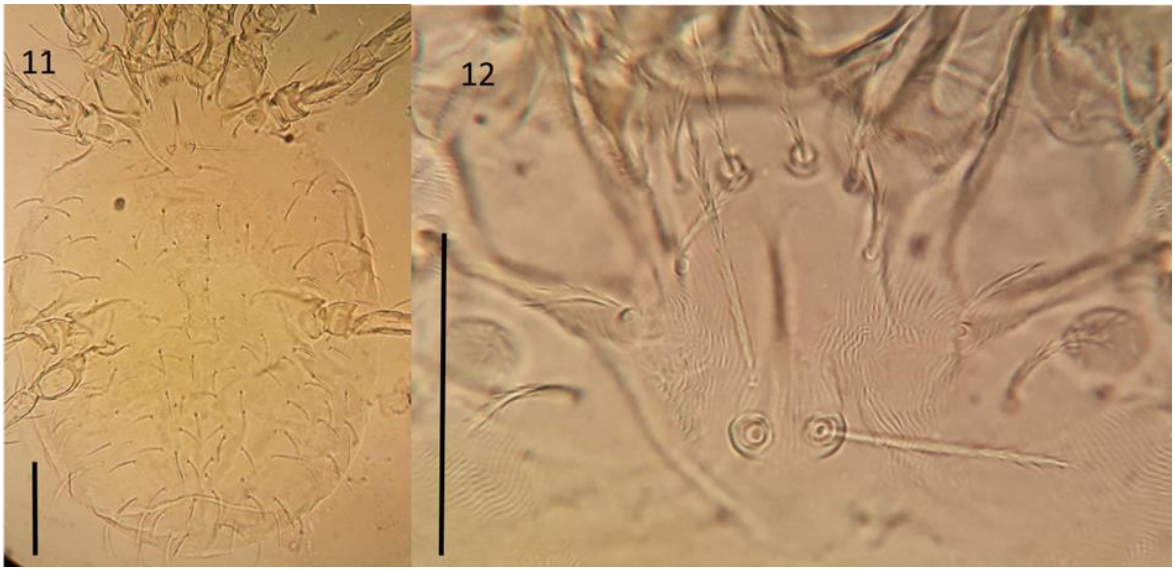
Figures 5–6. *Abrolophus kazimierae* (larva) – 5. Dorsal habitus; 6. Gnathosoma and setae on scutal area. Scale bar = 50 μm.



Figures 7–8. *Abrolophus quisquiliarus* (deutonymph) – 7. Dorsal opisthosomal setae; 8. Sensillary area of crista metopica. Scale bar = 50 μm.



Figures 9–10. *Balaustium nikae* (larva) – 9. Dorsal habitus; 10. Setae in scutal area. Scale bar = 50 µm.



Figures 11–12. *Balaustium ryszardi* (larva) – 11. Dorsal habitus; 12. Setae in scutal area. Scale bar = 50 µm.

Remarks – The Syrian specimens are very close to those of the original description (from Greece) and to those reported from Sicily (Italy) (Šundić and Noei 2021; Haitlinger 2022) except for having shorter MW and PW (MW = 24–27 vs. 48–61 and 33–44, and PW = 42–48 vs. 65–84 and 54–84, for Greece and Italian populations, respectively) (Table 1).

Curteria duzgunesae (Saboori, Çobanoğlu & Bayram, 2007) (Figs. 13–14)

Specimen collected – Slanfeh: one larva on *Ostrya carpinifolia* Scopoli, Betulaceae, 20 April 2021.

Remarks – With exception of the presence of eight normal setae on the left side of TFe I and seven on the right side, other characters of Syrian larva fit well with those of Turkish one in the original description (Table 1) (Saboori *et al*. 2007).

Figures 13–14. *Curteria duzgunesae* (larva) – 13. Dorsal habitus;14. Setae in scutal area. Scale bar = 50 μm.

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