بيانات إضافية عن الأكاروسات في محافظة حماة (سورية) وتسجيل نوعين جديدين من فصيلتي Erythraeidae و Tetranychidae

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الملخص

أجريت هذه الدراسة استكمالاً للأبحاث السابقة التي أجريت خلال موسمي 2023–2024 بهدف التقصي عن الأكاروسات نباتية التغذية والمفترسة في بساتين الفاكهة والنباتات الطبيعية في منطقة مصياف، محافظة حماة، سورية. سُجّلت ستة أنواع من الأكاروسات المفترسة تعود إلى أربع فصائل، أربعة من هذه الأنواع سبق أن سُجّلت في محافظة حماة وهي: *Allothrombium molliculum* (Koch) من فصيلة Trombidiidae و *Euseius scutalis* (Athias–Henriot) و *Eupalopsellus finitimus* (Ribaga) من فصيلة Phytoseiidae، و *prasadi* Bagheri & Kanjani من فصيلة (Eupalopsellidae). في حين يُعد تسجيل النوع *Erythraeus* (*Erathraeus*) *phalangoides* (De Geer) أول مرة في محافظة حماة، والنوع *Erythraeus* (*Zaracarus*) *coleopterus* (Mortazavi, Hajiqanbar & Saboori) لأول مرة في سورية. فيما يتعلق بالأنواع نباتية التغذية، فقد سُجّل نوعان من فصيلة Tetranychidae وهما: *Bryobia vasiljevi* Reck الذي سجل سابقاً في محافظة حماه و *Bryobia graminum* (Schrank) الذي سُجّل لأول مرة في سورية.

الكلمات المفتاحية: الأكاروسات المفترسة، الأكاروسات نباتية التغذية، *Erythraeus coleopterus* (*Zaracarus*)، *Bryobia graminum*، سورية.

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Additional data on mites from Hama governorate (Syria) with two new record species of Erythraeidae and Tetranychidae families

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Abstract

This study was conducted as a continuation of previous research carried out during the 2023-2024 seasons with the aim of investigating the phytophagous and predatory mites in fruit orchards and natural plants in Hama governorate, Syria. Six species of predatory mites belonging to four families were recorded. Of them, *Allothrombium molliculum* (Koch) (Trombidiidae), *Euseius scutalis* (Athias-Henriot) and *Phytoseius finitimus* (Ribaga) (Phytoseiidae), *Eupalopsellus prasadi* Bagheri & Kanjani (Eupalopsellidae) have been previously recorded in the same governorate. *Erythraeus* (*Erathraeus*) *phalangoides* (De Geer) was recorded for the first time from Hama governorate and *Erythraeus* (*Zaracarus*) *coleopterus* Mortazavi *et al.* was recorded for the first time from Syria. Concerning phytophagous mites, two species of the family Tetranychidae were recorded: *Bryobia vasiljevi* Reck, previously recorded from Hama governorate and *Bryobia graminum* (Schrank), recorded for the first time from Syria.

Keywords: predatory mites; phytophagous mites; *Erythraeus* (*Zaracarus*) *coleopterus*; *Bryobia graminum*; Syria.

Introduction

The number of recorded mite species has significantly increased in Syria during the last decade and reached to about 130 species in 2024. These species were collected from several cultivated plants and wild vegetation in many Syrian governorates (e.g. Barbar, 2013, 2016 , 2018a; Zriki *et al*., 2015; Zeity, 2017; Barbar and Ueckermann, 2017; Barbar and Negm, 2022; Zeity *et al*., 2022; Dayoub *et al*., 2022; Dayoub *et al*., 2024). The results of previous recent studies in Hama governorate showed the presence of more than thirty species of mites from different orders (Mesostigmata, Sarcoptiformes and Trombidiformes) in agrosystems and natural vegetation (Barbar and Negm, 2022; Hamadi and Barbar, 2024 a,b). The present research constitutes a part of surveys of mite fauna carried out during 2023-2024. It aimed to **(1)** identify these arthropods collected from some host plants in Hama governorate during autumn 2023 and 2024 and to **(2)** present, when necessary, the morphological characteristics of new recorded species.

Materials and methods

Mite fauna was collected from leaves of some cultivated plant species and wild vegetation at three localities in Hama province, Syria, in September 2023, and in September and November 2024: Al-Hekr (34°54′27" N/ 36°19'29" E), Ain Halakeem (34°56′20″N 36°19′15″E) and Anboura (35°7′14″N 36°20′30″E). Mites were directly picked off leaves and from

soil surface or were removed using the dipping-checking-washing-filtering method (Boller, 1984). Specimens were mounted on slides in Hoyer's medium and dried in an oven at 40°C for one week. Identification to infra-familial levels was carried out mainly using the work of Chant and McMurtry (2007) for Phytoseiidae; Wohltmann *et al*. (2007) and Xu *et al*. (2019) for Erythraeidae and Trombidiidae; Meyer and Ueckermann (1984) for Eupalopsellidae; and Bolland *et al*. (1998) for Tetranychidae. When necessary, morphological characteristics of the new recorded species were measured, and mite body parts were pictured using a mobile phone camera (13 megapixels) fixed on the eyepiece lens. Measurements are given in micrometers (µm).

Results and Discussion

A total of 91 mite specimens belonging to eight species of five families (one of the order Mesostigmata and four of the order Trombidiformes) were reported in the present study, of them, two species were recorded for the first time from Syria.

Order Mesostigmata

Family Phytoseiidae

Euseius scutalis (Athias-Henriot)

One female of this species was collected on *Rubus ulmifolius* Schottat, Ain Halakeem, November 2024. This species was widely collected from many crops and on wild plants in the coastal region of Syria and Hama governorate

(Barbar, 2013, 2014; Dayoub and Boubou, 2023; Hamadi and Barbar, 2024b).

***Phytoseius finitimus* Ribaga**

Thirteen females of this species were collected on *R. ulmifolius* at Ain Halakeem, November 2024, and one female was collected from *Punica granatum* L. at Anboura, November 2024. It has already been recorded from cultivated and natural vegetation in Syria (Barbar, 2016; Ebraheem *et al*., 2022; Dayoub and Boubou, 2023; Hamadi and Barbar, 2024b).

Order Trombidiformes

Family Erythraeidae

***Erythraeus* (*Erathraeus*) *phalangoides* (De Geer)**

One female and one deutonymph were collected from soil in an apple orchard at Al-Hekr, November 2024. The larvae of this species have already been collected form unidentified species of aphids in Latakia governorates, Syria (Barbar, 2018b), and from *Iridothrips iridis* (Thysanoptera: Thripidae) in Damascus governorate (Qanu *et al*., 2022).

***Erythraeus* (*Zaracarus*) *coleopterus* (Mortazavi, Hajiqanbar & Saboori)**

One larva of this species attached to adult of *Erythraeus* (*Erathraeus*) *phalangoides* was collected from soil in an apple orchard at Al-Hekr, September 2024 (Table 1; Figure 1-2).

*Character	Syrian larva	Mortazavi *et al.* 2012	*Character	Syrian larva	Mortazavi *et al.* 2012
GL	146	138	**Ta I (H)**	20	19
IL	515	408	**Ti I**	248	226
IW	400	303	**Ge I**	181	163
SD	92	93	**Tfe I**	122	121
W	140	147	**Bfe I**	115	111
AW	44	40	**Tr I**	60	68
PW	110	119	**Cx I**	65	76
AA	23	20	**Leg I**	956	949
SB	15	16	**Ta II (L)**	150	163
ISD	66	60	**Ta II (H)**	14	14
AL	83	119	**Ti II**	230	205
PL	67	79	**Ge II**	138	137
ASE	23	25	**Tfe II**	110	105
AP	51	53	**Bfe II**	112	116
MA	10	8	**Tr II**	58	63
PSE	72	79	**Cx II**	76	84
Bs	44	46	**Leg II**	874	873
As	32	37	**Ta III(L)**	186	200
DS	46-60	60-71	**Ta III(H)**	14	15
PDS	50-76	50-62	**Ti III**	350	358
1a	44	50	**Ge III**	175	189
1b	102	108	**Tfe III**	152	137
2b	broken	39	**Bfe III**	140	142
3a	42	42	**Tr III**	62	63
3b	56	61	**Cx III**	78	92
PaScFed	58	64	**Leg III**	1143	1181
PaScGed	69	67	**IP**	2973	3003
TA I (L)	165	184			

Table 1: measurements of *Erythraeus* (*Z.*) *coleopterus* Syrian larva and those of the original description

*** GL**: length of gnathosoma; **IL**: length of idiosoma; **IW**: width of idiosoma; **SD**: length of anterior dorsal scutum; **W**: width of scutum; **AW**: distance between bases of **AL** scutalae; **PW**: distance between bases of **PL** scutalae; **AA**: distance between bases of anterior sensillary setae; **SB**: distance between bases of posterior sensillary setae; **ISD**: intersensillary distance between levels of anterior and posterior sensillary setae of scutum; **AL**: length of anterolateral scutala; **PL**: length of posterolateral scutala; **ASE**: anterior sensillae; **AP**: distance between bases of **AL** and **PL** of the same side; **MA**: distance between the bases of **AM** and **AL** setae; **PSE**: posterior sensillae; **Bs**: hypostomal seta; **As**: galeal seta; **DS**: length of all dorsal idiosomal setae; **PDS**: length of posterior dorsal idiosomal setae; **1a, 2a and 3a**: length of setae between coxae I, II and III respectively; **1b,**

2b and 3b: length of seta on coxae I, II, and III respectively; **PaScFed and PaScGed**: length of seta on dorsal surface of palpfemur and palpgenu respectively**; Ta (L) and Ta (H):** length and height of tarsus respectively; **Ti, Ge, Bf, Tf, Tr, Cx**: length of tibia; genu, basifemur, telofemur; trochanter and coxa; **IP**: index pedibus, the total length of all legs (including coxae) (Hiatinger 1999, 2013; Makol 2007; Wohltman and Gabrys, 2007),

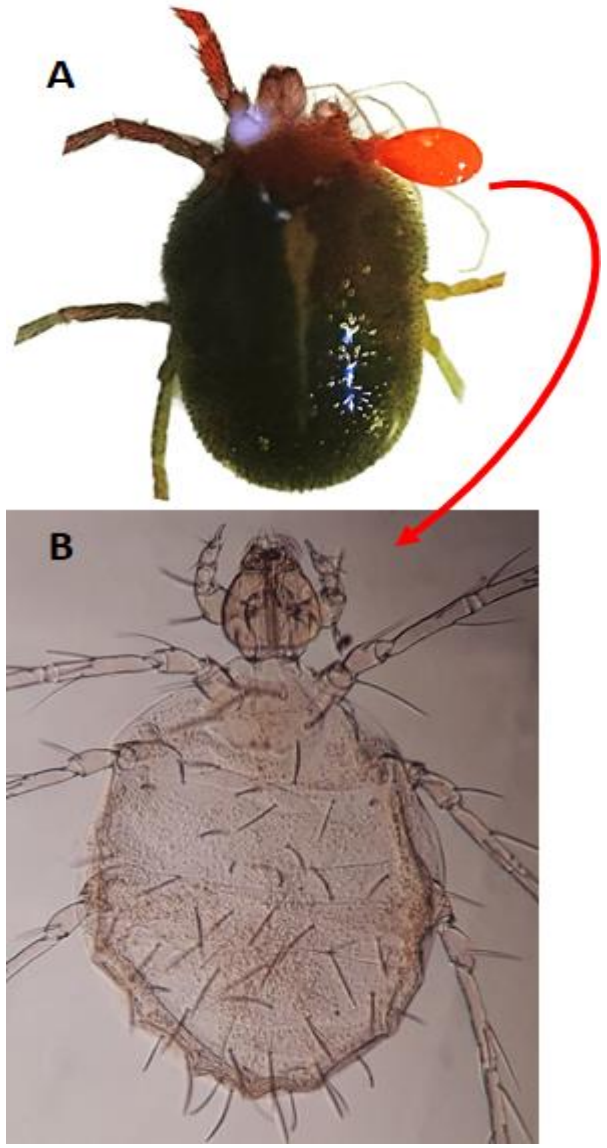

Figure 1: larva of *Erythraeus* (*Zacarus*) *coleopterus* attached to adult of *Erythraeus* (*Erythraeus*) *phalangoides* (A) and its general aspect (B)

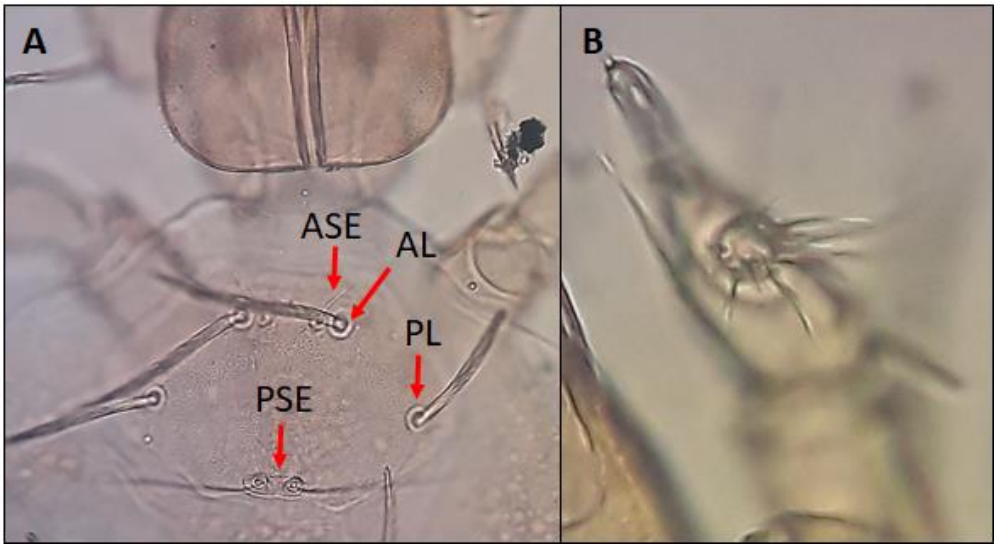

Figure 2: larva of *Erythraeus* (*Zacarus*) *coleopterus*: scutum (A) and palptarsus (B)

This is the first record of this species in Syria. It was originally described from a unique larva in Iran (Mortazavi *et al*., 2012). Morphological characteristics and measurements of Syrian larva fit well with those of the original description.

Family Eupalopsellidae

***Eupalopsellus prasadi* Bagheri and Khanjani**

Fifty-two females of this species were collected from *P. granatum* at Anboura, November 2024. This is the second report of this species from Syria (Hamadi and Barbar, 2024b). It was recorded for the first time in Iran (Bagheri and Khanjani, 2009).

Family Tetranychidae

***Bryobia graminum* (Schrank)**

Six females, one male and two larvae were collected from *Oxalis curniculata* L. at Al-Hekr, September 2023 (Figures 3 and 4).

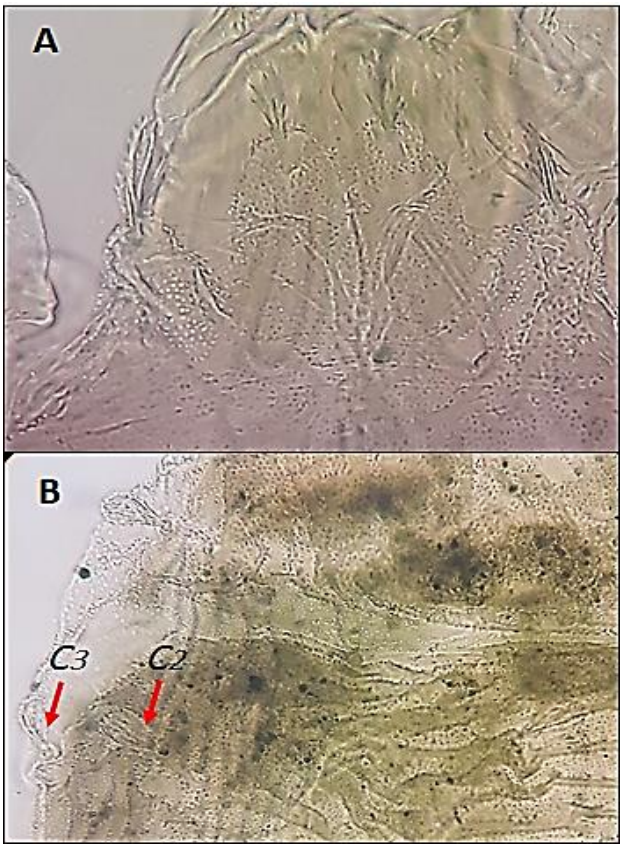

Figure 3: *Bryobia graminum* female: propodosomal lobes (A) and position of dorsal setae C_2 and C_3 (B)

This is the first record of this species from Syria. It waswidely distributed particularly in Europe, and was recorded from more than 60 plant species (Migeon and Dorkeld, 2024).

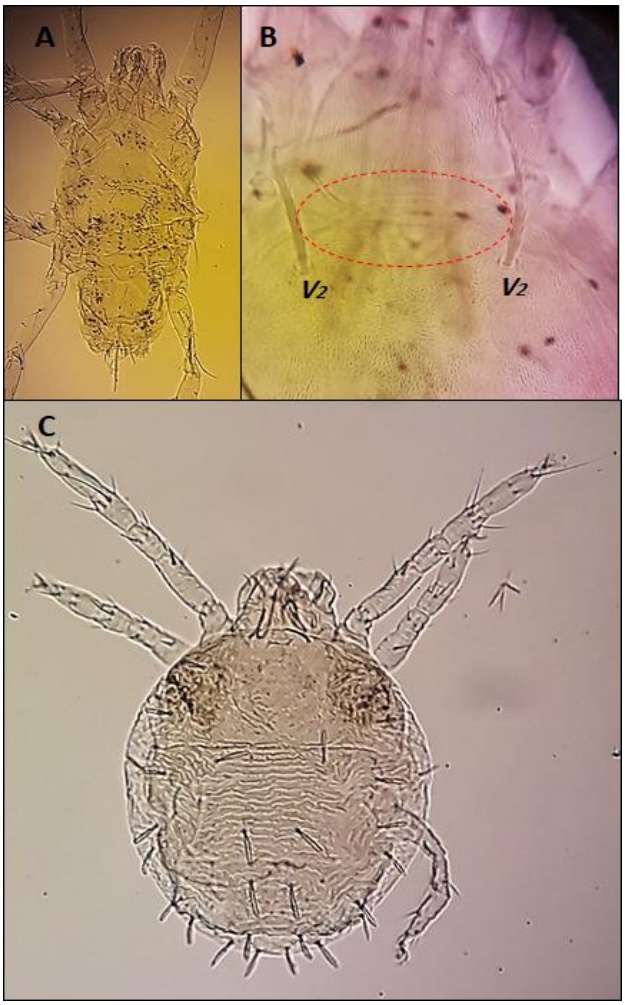

Figure 4: *Bryobia graminum*: general aspect of male (A); absence of lobes and setae V_1 (B); general aspect of larva (C)

The collected male of this species in our study characterized by missing of propodosomal lobes and the first pair of vertical setae (V_1) (Figure 4b).

These aberrations have already been reported in females of several *Bryobia* species (Arabuli and Auger, 2016; Fashing *et al*. 2016; Barbar and Auger, 2020).

***Bryobia vasiljevi* Reck**

Eleven females of this species were collected from *O. curniculata* at Al-Hekr, November 2024. It has already been collected from Hama and Latakia governorates (Zriki *et al*., 2015; Hamadi and Barbar 2024b)

Family Trombidiidae

***Allothrombium molliculum* (Koch)**

Four females were collected from *Symphytum orientale* L. at Ain Halakeem, November 2024. This is the second record of this species from Syria (Hamadi and Barbar, 2024b). It has already been recorded in Czech Republic, Germany, Poland, The Netherlands, Italy and Turkey (Makol and Wohltmann, 2012; Yıldırım and Sevsay, 2019)

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