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New Record of Predatory Thrips *Aeolothrips wittmeri* Priesner (Thysanoptera, Aeolothripidae) from Türkiye

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ABSTRACT

Up to the present, 16 species of the genus *Aeolothrips* have been recorded from Türkiye. This study identified a new predatory species, *Aeolothrips wittmeri* Priesner from cucumber fields in Diyarbakır Province, Türkiye. The species is similar to another predatory thrips *Aeolothrips gloriosus* Bagnall in color of last abdominal segments in which abdominal segments VIII–X and sometimes VII are dark brown and other parts of the body are yellow to light brown with pale brown spots. The characters separating these two species are provided in this manuscript with illustrations.

Keywords: cucumber fields, morphological description, checklist, Diyarbakır.

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INTRODUCTION

The family Aeolothripidae is the third largest family in the order Thysanoptera, after Phlaeothripidae and Thripidae with 220 extant species in 23 genera worldwide (Alavi & Minaei, 2018; Mirab-balou, 2019). Members of this family are facultative predators of other small arthropods, and feed on both floral tissues as well as on thrips and mites that live in flowers. However, considerable number of species are obligate predators in warmer parts of the world, (Tyagi et al., 2008). More than 50% of the described aeolothripid species are placed in the genus *Aelothrips* Haliday (ThripsWiki, 2023).

Aeolothrips genus is essentially Holarctic, being distributed in the Palaearctic as well as the Nearctic regions, and regarded as the most species-rich in the family Aeolothripidae with 112 species around the world (ThripsWiki, 2023). So far, 16 species of *Aeolothrips* have been recorded from Türkiye (Tunç & Hastenpflug-Vesmanis, 2016; Uzun Yigit, Demirozer, & Minaei, 2022). This study reports another predatory *Aeolothrips* species, *A. wittmeri* Priesner in Türkiye based on two females collected from cucumber fields in Diyarbakır province. It is compared with related species with illustrations.

MATERIALS AND METHODS

Specimens were collected by beating cucumber [*Cucumis sativus* (Cucurbitaceae)] leaves and flowers onto a plastic tray, from Diyarbakır province, Türkiye. The specimens were removed with a fine brush into a collecting vial containing 70 % ethyl alcohol. They were then mounted onto slides according to the method described by Remani, Thippeswamy, Ramasamy, & Shivalingegowda (2023). Slides were examined using a Nikon Eclipse 80i microscope, and micro pictures were acquired using a Nikon DS-Vi1 camera placed at the top of the microscope. Specimens are deposited in the collection of Department of Plant Protection, College of Agriculture, Ilam University, Iran (ILAMU). The species was identified according to appropriate identification keys (Alavi & Minaei, 2018; Mirab-balou, 2019).

RESULTS

The species discussed below belongs to the genus *Aeolothrips*, family Aeolothripidae and can be recognized by the following characters: bicolored body, antennae 9-segmented, III and IV with linear sensorium; head without long setae behind the compound eyes, pronotum without prominent posteroangular setae and the forewings broad with the apex rounded and usually with two dark transverse bands, posterior margin of forewing is dark except at the base and apex.

Aeolothrips wittmeri Priesner

Aeolothrips wittmeri Priesner, 1935: 315 (Type species, female at Senckenberg Museum, Frankfurt).

Material examined: TÜRKİYE, Diyarbakır, 2♀♀, on flowers of cucumber, *Cucumis sativus* (Cucurbitaceae), 17.7.2022, Leg. A.H. Büyük.

Morphological description: Female macroptera (Fig. 1a); body bicolored, head and thorax yellow with variable brown areas medially, pronotum with a brownish median longitudinal stripe (Fig. 1c), abdominal segments I–IV largely yellow, V–VI mostly brown, VII–X dark brown; antennal segments brown except III yellow at basal third (Fig. 1b); legs yellow, mid and hind tibiae dark brown, mid- and hind femora with brown area apically (Fig. 1a); forewings with two dark transverse bands, ring vein pale around wing apex but weakly shaded between the dark bands, posterior margin of forewing is dark except at the base and apex (Fig. 1d).

Antennae 9-segmented, segment III with linear sensorium about 0.5 of segment length, IV with sensorium broader and longer, curving around segment apex. Head and pronotum with no long setae; mouth cone long, maxillary palps 3-segmented. Abdominal tergite I with weak transverse reticulation; sternite VII with lateral two pairs of marginal setae arising sub-marginally, two pairs of accessory setae arising close to margin, between marginal setae S1 and S2.

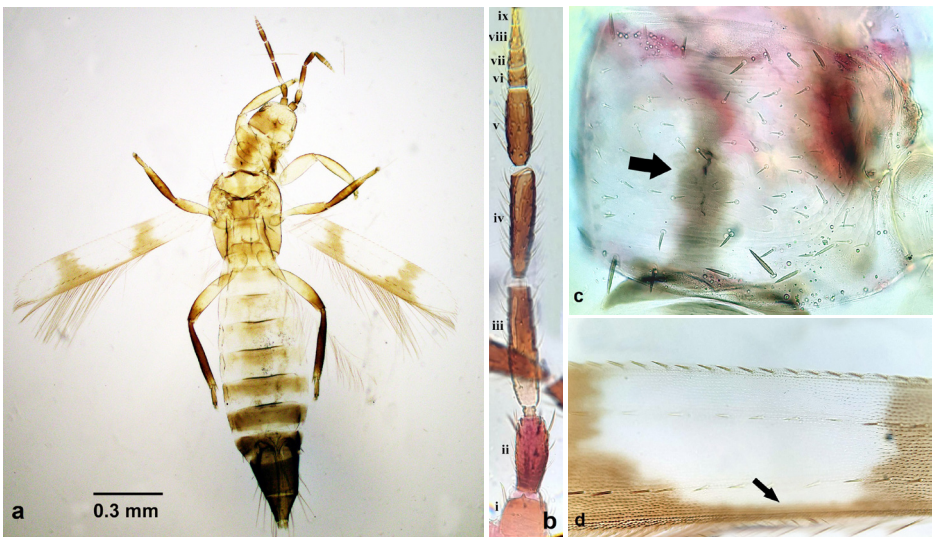

Figure 1. *Aeolothrips wittmeri*, a) female, b) antenna (right), c) head and pronotum, d) fore wing, showing dark posterior margin.

Distribution: Egypt, Iran (Alavi, Mosallaei, & Sajjadi, 2012; Minaei 2013)

Checklist of *Aeolothrips* species previously recorded from Türkiye

Aeolothrips albicinctus Haliday

Aeolothrips astutus Priesner

Aeolothrips balati Pelikan

Aeolothrips collaris Priesner

Aeolothrips cursor Priesner
Aeolothrips ericae Bagnall
Aeolothrips fasciatus (Linnaeus)
Aeolothrips gloriosus Bagnall
Aeolothrips heinzi zur Strassen
Aeolothrips intermedius Bagnall
Aeolothrips linarius Priesner
Aeolothrips melaleucus Haliday
Aeolothrips priesneri Knechtel
Aeolothrips propinquus Bagnall
Aeolothrips tenuicornis Bagnall
Aeolothrips versicolor Uzel

DISCUSSION

Among *Aeolothrips* species from Türkiye, except micropterous *A. cursor* and the micropterous form of *A. albicinctus*, posterior margin of forewing is pale medially between two dark cross bands whereas in four species, *A. gloriosus*, *A. melaleucus* and *A. versicolor* and *A. wittmeri* the posterior margin of forewing is dark except base and apex. However, *A. gloriosus* and *A. wittmeri* are distinguished from *A. melaleucus* and *A. versicolor* by the narrow form of the band along the forewing posterior margin between the two cross bands, in contrast to the other two species that have a wider band (Minaei, 2014; Alavi & Minaei, 2018). The species have been reported from Iran (Mirab-balou, 2018).

The females of *A. wittmeri* are readily differentiated from *A. gloriosus* by the following characters: antennal segments I and II brown (Fig. 1b) (vs. yellow in *gloriosus*); mid and hind tibiae brown (Fig. 1a) (vs. yellow in *gloriosus*); pronotum with a brownish median longitudinal stripe (Fig. 1c) in contrast to *gloriosus* without brownish median longitudinal stripe. In male of *A. wittmeri*, abdominal tergite IX has dark spine-like seta on either side of posterior margin, but *A. gloriosus* with no dark spine-like setae (Alavi & Minaei, 2018). In conclusion, accurately identification of *A. wittmeri* from various geographical locations is of paramount importance for taxonomy, conservation, agriculture, and molecular research. Accurate species identification is crucial to enhance our understanding of its distribution, ecological characteristics, and evolutionary trajectory. The results of the current study will facilitate the development of efficient management strategies against *A. wittmeri*.

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