*J. Entomol. Res. Soc., 21(3): 373-378, 2019* *Research Article*
*Print ISSN:1302-0250* *Online ISSN:2651-3579*

# A New Host Record *Utetheisa pulchella* (Linnaeus, 1758) (Lepidoptera: Erebidae) for *Exorista xanthaspis* (Wiedemann, 1830) (Diptera: Tachinidae) from Turkey

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## ABSTRACT

*Exorista xanthaspis* (Wiedemann, 1830) (Diptera: Tachinidae) specimens are reared from the larvae of *Utetheisa pulchella* (Linnaeus, 1758) (Lepidoptera: Erebidae) collected in Batman province. *U. pulchella* is recorded for the first time as host of this parasitoid. Some additional information about the reared species and its host is also provided.

*Key words: Exorista xanthaspis*, new host record, *Utetheisa pulchella*, Turkey.

Bolu, H., Atay, T., Kara, K. & Çelik, H. (2019). A New host record *Utetheisa pulchella* (Linnaeus, 1758) (Lepidoptera: Erebidae) for *Exorista xanthaspis* (Wiedemann, 1830) (Diptera: Tachinidae) from Turkey, *Journal of the Entomological Research Society,* 21(3), 373-378

## INTRODUCTION

Tachinid flies (Diptera: Tachinidae) are important in terms of biological control because their larvae develop as parasitoids in insects and other arthropods. The majority of hosts are caterpillars of Lepidoptera. Other hosts belong to the orders Coleoptera, Hemiptera, Hymenoptera, Orthoptera and Diptera (Grenier, 1988; Stireman, O'Hara, & Wood, 2006; Tschorsnig, 2017). Many hosts are still unknown. Recently, the most comprehensive host-parasitoid catalogues about Turkey and the Palaearctic region were prepared by Kara & Tschorsnig (2003) and Tschorsnig (2017), respectively.

The tachinid species *Exorista xanthaspis* (Wiedemann, 1830) has a broad host range in the Palaearctic region. Lasiocampidae, Lymantriidae and Noctuidae (Lepidoptera) are the usual host families of this tachinid. Other lepidopterous host families in the same region are Arctiidae, Epicopeiidae, Pieridae, Pyralidae, Sphingidae and Thaumetopoeidae (Tschorsnig, 2017). Also, Noctuidae is a common host family in the Afrotropical and Oriental regions. Other host families of this tachinid in the Oriental region are Arctiidae and Hyblaeidae (Lepidoptera) (Crosskey, 1976; 1984).

There are only few records on other tachinid parasitoids of *U. pulchella.* These are *Exorista segregata* (Rondani, 1859) (Kugler, 1980) and *Tachina praeceps* Meigen, 1824 (Herting, 1960). There were no published records of Tachinidae reared from *U. pulchella* in Turkey.

## MATERIAL AND METHODS

Thirty-three larvae of the *Utetheisa pulchella* (Lep.: Erebidae) were collected on *Heliotropium ellipticum* (Boraginaceae) in Batman and Diyarbakır provinces in 2018. They were brought to the laboratory with their food-plants for rearing and transferred to separate cages and checked daily.

Male terminalia of the reared parasitoids were prepared following the method described by O'Hara (2002). The dissected terminalia were examined with a Leica M205 C stereoscopic microscope and are preserved in small plastic vials with glycerol. Images were taken using a Leica MC 170 digital camera mounted on a Leica M205 C stereoscopic microscope, and processed with Helicon Focus Pro software. The keys of Herting (1975) and Tschorsnig & Herting (1994) were used for the identification of the species. The nomenclature of the tachinids follows Herting & Dely-Draskovits (1993). The lepidopterous host was identified by Felipe Gil-T (Granada, Spain). The specimens are deposited at the Plant Protection Museum of the Tokat Gaziosmanpaşa University, Agricultural Faculty, Plant Protection Department, Tokat, Turkey.

## RESULTS

Identity, distribution, and some additional information of tachinid and host are as follows:

***Utetheisa pulchella* (Linnaeus, 1758) (Lepidoptera: Erebidae)**

The Crimson-speckled moth *U. pulchella*, which attacks some cultivated plants, is a polyphagous leaf feeder pest (Mekhlif, 2012).

Distribution: Europe (Olafsson, et al. 2019 ); India (Dubatolov, 2010; Bhatt, 2016; Biswas, Modak, Mazumder, & Mitra, 2016), Libya (El-Maghrabi & Amin, 2007) Iraq (Mekhlif, 2012), Turkey: Çukurova Deltası (Aydın, 2006), Şanlıurfa (Beyarslan, Gözüaçık, & Özgen, 2014), Şanlıurfa (Kemal & Koçak, 2017).

Host plants: *Crotalaria juncea* L. (Beyarslan et al, 2014), *Crotalaria burhia* Buch.-Ham. (Fabaceae) (Pandey, Pande, & Kaul, 1971); *Heliotrobium ramosissimum* (Lehm.) (Boraginaceae), *Launaea cassiniana* (Jaub.& Spach) (Asteraceae), *Gossypium* sp. (Malvaceae), *Ricinus communis* L. (Euphorbaceae), *Lawsonia incamis* (Lythraceae), *Medicago sativa* L. (Fabaceae), *Lycopersicum esculentum* Mill., *Solanum melongena* L., Withania *somnifera* (L.) (Solanaceae) (AL-Ahmadi & Salem, 1995), *Myosotis* sp. (Boraginaceae) (Becker & Scott 2002), *Heliotropium ovalifolium* Forssk. (Boraginaceae) (Bhatt, 2016).

Material examined: Collected in Batman: Hasankeyf, 2.09.2018, N 37°42.43.92', E 41°24.38.14', 516 m, on *Heliotropium ellipticum* Ledeb. (Boraginaceae); in Diyarbakır: Sur, 7.09.2018, N 37°55.32.62', E 40°15.32.62', 613 m, on *H. ellipticum* (Fig. 1).

Fig. 1. Larvae of *Utetheisa pulchella.*

***Exorista xanthaspis* (Wiedemann, 1830) (Tachinidae: Exoristinae)**

Distribution: Caucasus, East Siberia, Mongolia, Soviet Middle Asia, Sudan (Herting & Dely-Draskovits, 1993), Israel, India, Indonesia, Madacasgar, Taiwan, Yemen (O'Hara & Cerretti, 2016), East, South and West Europe (Tschorsnig, et al. 2004), Turkey: Erzurum (Doğanlar, 1975), Diyarbakır (Efil & Kara, 2004), Mardin (Gözüaçık & Mart, 2009), Southeastern Anatolia Region (Gözüaçik, Mart, & Kara, 2009).

Hosts in Turkey: *Aporia crataegi* (Lep.: Pieridae) (Kansu, 1955), *Simyra dentinosa* (Lep.: Noctuidae) (Doğanlar, 1982), *Spodoptera exigua* (Lep.: Noctuidae) (Steiner 1937; Efil & Kara 2004; Gözüaçik et al, 2009; Gözüaçık & Mart 2009). *Utetheisa pulchella* is a new host species for this tachinid in the world.

Reared specimens (date of adult emergence): 1♀ (18.09.2018); 1♂, 1♀ (14.10.2018).

Although the specimens of *E. xanthaspis* were reared from *U. pulchella* collected from Batman (Hasankeyf), they could not be reared from those collected from Diyarbakır (Sur).

Differential diagnosis: *Exorista xanthaspis* shows many external morphological characters similar to *E. civilis* (Rondani, 1859). For the safe distinction of the two species a study of the male terminalia is recommended (Herting, 1975).

- Syncercus with a large basal part and a short, blunt, slightly flattened top. Surstylus almost in line with the syncercus. Aedeagus nearly continuously bent (Fig. 2) ..... .....*E. civilis*

- Syncercus with a smaller basal part and a long, laterally compressed tip. Surstylus semi-erect. Aedeagus dorsally with a hump at about mid-length (Fig. 3) .....*E. xanthaspis*

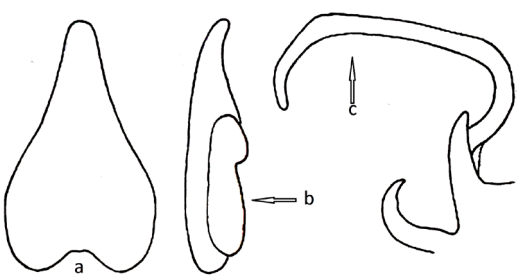


Fig. 2: Male terminalia of *Exorista civilis* a. Syncercus b. Surstyli c. Aedeagus (Herting, 1975).


Fig. 3. Male terminalia of *Exorista xanthaspis* a. Syncercus b. Surstyli c. Aedeagus.

## ACKNOWLEDGEMENTS

We are grateful to Dr. H.-P. Tschorsnig (Staatliches Museum fur Naturkunde,

Stuttgart, Germany) for providing several literature and information on host-parasitoid couple and to Felipe Gil-T (Granada, Spain) for identification of *Utetheisa pulchella*.

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*Received: January 03, 2019* *Accepted: September 16, 2019*