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Two new records for the Turkish Agromyzidae (Diptera) fauna*

Emine ÇIKMAN** Mitsuhiro SASAKAWA***

Summary

Leafminers were collected in fields of cultivated and wild plants once a week in Adıyaman, southeastern Turkey in 2004-2005. ***Melanagromyza aeneoventris*** (Fallén, 1823) and ***M. pubescens*** Hendel, 1923, were added newly to the Turkish fauna. Their morphological descriptions, host plants and general distribution were given.

Key words: ***Melanagromyza aeneoventris***, ***M. pubescens***, leafminers, new record, Turkey
Anahtar sözcükler: ***Melanagromyza aeneoventris***, ***M. pubescens***, galerisinekleri, yeni kayıt, Türkiye

Introduction

Agromyzidae (leafmining flies) is one of the largest dipterous families with more than 2742 valid species belonging to 27 genera worldwide (Spencer, 1989), and 1165 species have been recorded from the Palaearctic region (Schiers et al., 1999). Adults are minute, with wing length of 2 to 3 mm generally. There is a high degree of host specificity (Spencer, 1989). Although the larvae of all species are exclusively internal feeders of living plants, they are not confined to leaves and petioles as the common name may suggest. Numerous species live in different parts of the plant, including the cambium of trees, flower-heads, seeds, stems and roots, and a few species induce galls. Overall, about 150 species are known to feed regularly on cultivated plants; of these, many species normally do not reach high population levels but occasional outbreaks can occur.

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** Plant Protection Department, Faculty of Agriculture, Harran University, 63040 Şanlıurfa, Turkey. e-mail:cemine@harran.edu.tr

*** 7-6-7 Korigaoka, Hirakata City, Osaka Pref. 573-0084 Japan, e-mail: sasakawa@star.odn.ne.jp

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However, there are some serious pests that tend to have high reproduction rates and cause significant yield reduction or even plant mortality. Also the adults can transmit some diseases from infected plants to healthy ones (Civelek & Önder, 1997).

Until now, 91 species have been recorded in Turkey (Giray, 1980; Spencer, 1990; Uygun et al., 1995; Yabaş et al., 1995; Deeming & Civelek, 1997; Campobasso et al., 1999; Civelek et al., 2000; Civelek, 2002; 2003; Çıkman & Uygun, 2003; Civelek, 2004; Çıkman & Civelek, 2005; Mart et al., 2005; Çıkman & Sasakawa, 2005). The goal of this study was to contribute to the knowledge of leafminer fauna from Adıyaman province, southeastern of Turkey.

Materials and Methods

This study was carried out during 2004 and 2005 in Adıyaman province, which was divided into four subareas for the convenience of the collection of specimens. The fly specimens were collected by sweeping net from the fields of cultivated and wild plants once a week. The male genitalia are one of the important characters for identification of leafminers. Male genitalia were removed from the flies, chemically treated, and the slide preparations were made for a distinction between the related species. Male abdomens were boiled in 10 % KOH, then moved into glacial acetic acid for 5 minutes; and then into 96 % alcohol for another 5 minutes; and then dissected under a stereoscopic microscope. Representative specimens are deposited in the laboratories, Faculty of Agriculture, Plant Protection Department, Şanlıurfa, Turkey, and Osaka Museum of Natural History, Nagai Park, Osaka, Japan.

Results

Two species of the subfamily Agromyzinae: ***Melanagromyza aeneoventris*** (Fallén, 1823) and ***Melanagromyza pubescens*** Hendel, 1923, are recorded for the first time from Turkey.

Melanagromyza aeneoventris (Fallén, 1823)

Synonyms:

Agromyza aeneo-ventris Fallén, 1823, Agromyzides Sueciae: 4.

Agromyza cirsii Rondani, 1875, Bull. Soc. ent. ital. 7:180.

Agromyza leucoptera Czerny, in Czerny & Strobl, 1910, Verh. zool.-bot. Ges.Wier,

Melanagromyza aeneiventris (Fallén), Hendel, 1920, Arch. f. Naturgesch. 84 (A):126.

Description: This blackish-green species has two dense rows of orbital setulae which are both reclinate and proclinate; head including antenna black; parafrontalia distinctly projecting above eye in profile, bearing 2 closely adjoining ors and 2 widely spaced ori, the two ors and the upper ori are equidistant, while the distance between these bristles is less than half that between the ori; mesonotum black shining greenish, abdomen more so; acr in 10 rows; costa extending to M_1; last section of CuA_1 about ⅔ length of penultimate; sequama pale, with margin yellowish brown and fringe silvery white; legs black. Epandrium broadened ventrally, with a tooth at postero-ventral corner; cecus with about 7 stout setae on antero-ventral part; surstylus about ½ as wide as ventral width of epandrium, with 35-45 spines in 3-4 irregular rows; hypandrium with basal apodeme 1/3 length of its whole length; basiphallus almost ring-like; distiphallus well-developed, densely spinulose on dorsal lobe externally and internally, and with distally prolonged and slightly downwardly turned membranous process at ventral end ejaculatory apodeme 175-225 μm long, 100-120 μm broad (see Spencer's figures 21 & 22, 1976).

Distribution: Europe, Japan (Spencer, 1976).

Hosts: ***Cirsium*** spp., more rarely ***Cardus*** spp., and ***Inula*** spp., (Spencer, 1976); ***Capsicum*** sp., ***Cucumis*** sp. and ***Lycopersicon*** sp. (Henrikas et al., 2005). The larva is a stem-borer.

Material examined: (3♀♀, 3♂♂) Kahta (Narince), Adıyaman 09.05.2005 by sweeping, on ***Triticum aestivum*** L.

Figure 1. ***Melanagromyza aeneoventris*** (Fallén) aedeagus, side view (Spencer, 1976).

Melanagromyza pubescens Hendel, 1923

Synonyms:

Melanagromyza pubescens Hendel, 1923, Konowia 2:144.

Melanagromyza luthudii Spencer, 1964, Dt. Ent. Z., N.F. 11:26.

Description: Head including antenna black**,** frons 1.5-2 times width of eye; parafrontolia linearly or not projecting above eye in profile, with 2 ors and 2 ori; orbital setulae in single row, reclinate; gena, deepest at rear, ¼ height of eye; third antennal segment finely pubescent; mesonotum entirely black, slightly mat viewed from front but strongly shining from rear. Abdomen shining black; wing length 2.7-3.1 mm; costa extending to M_1, and last section of CuA_1 length of 2/3 penultimate; squama grey, with margin and fringe black; legs black. Male genitalia are distinctive in following points: surstylus not projected, with 42-45 spines antero-ventrally; hypandrium with basal apodeme long and flattened vertically; phallus with membranous part expanded ventrally, basiphallus with short distal arms, distiphallus with distal tubule elongated (see Sasakawa, 1996, figures 2A, B); ejaculatory apodeme 300 μm long and broad, respectively.

Distribution: Europe, Mongolia, Nepal, Japan, South Africa (Sasakawa, 1997).

Hosts: ***Capsicum*** sp., ***Cucumis*** sp., ***Lilium*** sp. and ***Lycopersicon*** sp. (Henrikas et al., 2005).

Material examined: (2♀♀, 2♂♂) Besni (Ören), Adıyaman, 20.04.2004 by sweeping, on ***Cardaria draba*** L. and ***Lilium*** sp.

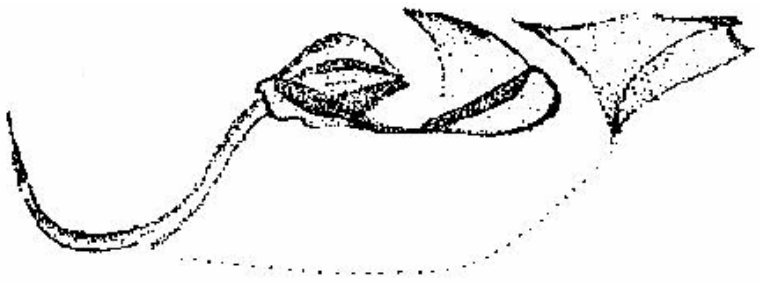

Figure 2. ***Melanagromyza pubescens*** Hendel aedeagus, side view (Spencer, 1976).

Conclusion

In this paper two known Palaearctic species of ***Melanagromyza*** are added as new to the fauna, making total now known in Turkey 93. It can certainly be expected that more species still await identification. ***Melanagromyza*** is the second largest genus of the family Agromyzidae, and some species of the genus are economically important on the cultivated plants. Although ***M. aeneoventris*** and ***M. pubescens*** are not pests in Adıyaman province, the occurrence of these species is interested in terms of showing the biodiversity of Turkey.

Özet

Türkiye Agromyzidae (Diptera) faunası için iki yeni kayıt

Galerisinekleri Adıyaman ilinde 2004-2005 yıllarında kültür ve kültür dışı bitkilerden haftada bir toplanmıştır. Çalışma süresince ***Melanagromyza aeneoventris*** (Fallén, 1823) ***Melanagromyza pubescens*** Hendel, 1923 türleri Türkiye galerisinekleri faunası için yeni kayıtlar olarak saptanmıştır. Türlerin morfolojik özellikleri, konukçuları ve genel dağılışları verilmiştir.

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