

Contributions to the Agromyzidae (Diptera) Fauna of Turkey

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Abstract: This study was carried out in 2003 and 2004 in Kahramanmaraş province. Specimens were collected once a week from Kahramanmaraş province, southern Turkey, from both cultured and non-cultured plants. Before this study, 80 leafminer species had been identified in Turkey. In this study *Phytoliriomyza perpusilla* (Meigen, 1830), *Phytomyza fallaciosa* Brischke, 1881 and *Phytomyza fuscula* Zetterstedt, 1838 are recorded as new for the Turkish leafminer fauna. Morphological descriptions, hosts and their general distributions are given.

Key Words: *Phytoliriomyza perpusilla*, *Phytomyza fallaciosa*, *P. fuscula*, leafminers, Agromyzidae, Diptera, new record, Turkey

Türkiye Agromyzidae (Diptera) Faunasına Katkılar

Özet: Bu çalışma 2003-2004 yıllarında Kahramanmaraş ilinde gerçekleştirilmiştir. Örnekler Kahramanmaraş ilinden kültürü yapılan ve yapılmayan bitkilerden haftada bir toplanmıştır. Bu çalışmaya kadar Türkiye'de 80 galerisineği türü saptanmıştır. Çalışma süresince *Phytoliriomyza perpusilla* (Meigen, 1830), *Phytomyza fallaciosa* Brischke, 1881 and *Phytomyza fuscula* Zetterstedt, 1838 türleri Türkiye galerisinekleri faunası için yeni kayıtlar olarak saptanmıştır. Türlerin morfolojik özellikleri, konukçuları ve genel dağılımları verilmiştir.

Anahtar Sözcükler: *Phytoliriomyza perpusilla*, *Phytomyza fallaciosa*, *P. fuscula*, galerisinekleri, Agromyzidae, Diptera, yeni kayıt, Türkiye

Introduction

With more than 2500 described species belonging to 27 genera in the world, Agromyzidae (leafmining flies) is one of the largest fly families. From this family, 776 species were identified in Europe. To date, 80 species have been identified in Turkey (Spencer, 1972, 1976, 1990; Giray, 1980; Uygun et al., 1995; Deeming and Civelek, 1997; Campobasso et al., 1999; Civelek et al., 2000; Civelek, 2002, 2003; Çıkman and Uygun, 2003; Civelek, 2004).

Adults can be minute, with wing length of little more than 1 mm. The maximum size known is 6.5 mm. The majority of species are in the range of 2 to 3 mm. 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, others feed in seeds and flowers, and few species induce galls. Altogether 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. However, there are species that tend to reproduce in large numbers can cause significant yield reduction or even plant mortality.

The goal of this study is to contribute to the knowledge of the leafminer fauna from Kahramanmaraş province, southern Turkey.

Materials and Methods

This study was carried out in 2003 and 2004 in Kahramanmaraş province and leafminer specimens were the primary material examined. The specimens were collected from both cultured and non-cultured plants once

a week. The adult leafminers were obtained by sweeping or by rearing specimens from infested leaves in the laboratory. Since the male genitalia are important characters for the identification of leafminers, slide preparations were made. The following general procedures were applied: the abdomen of each male was boiled in 10% KOH, transferred into glacial acetic acid for 5 min. and subsequently stored in 96% alcohol for 5 min. Then the abdomen was further dissected under a stereoscopic microscope. The male genitalia were transferred into euparal on a coverslip in order to preserve the material for a long time. The species were identified by using Spencer (1966, 1972, 1973, 1976, 1990). Representative specimens were deposited at the Entomology Laboratory in the Sütcü Imam University, Agricultural Faculty, Plant Protection Department, Kahramanmaraş, Turkey.

Results

In this study *Phytoliriomyza perpusilla* (Meigen, 1830), *Phytomyza fallaciosa* Brischke, 1881 and *Phytomyza fuscula* Zetterstedt, 1838 are reported for the first time from Turkey.

Phytoliriomyza Hendel, 1931: Fliegen pal. Reg., 6 (2): 203.

Type species: *Agromyza perpusilla* Meigen, 1830: Syst. Besch., 6: 181.

Phytoliriomyza perpusilla (Meigen, 1830): Syst. Besch., 6: 181.

Description: Wing length 1.5-1.75 mm; frons orange-brown and broad, almost twice width of eye; orbital setulae reclinate; first and second antennal segments yellow, third antennal segment dark, large, ovoid, arista long; mesonotum matt grey, with 3-1 dorsocentral bristles and acrostichal bristles in 2 rows or lacking, scutellum either similar or faintly yellowish centrally; pleura largely yellow; costa extending to vein M_{1+2} ; second cross vein characteristically slanting; last section of M_{3+4} twice penultimate.

Material Examined: Kahramanmaraş -Centre on *Triticum* sp. on 05.04.2004 (2♂♂, 1♀) and on 15.04.2004 (4♀♀); Pazarcık on *Triticum* sp. on 15.04.2004 (1♂) by sweeping net.

Hosts: Several genera of Compositae. *Aster tripolium* (Spencer, 1976).

General Distribution: Widespread in Europe. Finland, Sweden (Spencer, 1976).

Phytomyza Fallén, 1810: Specim. Entom.novam Dipt.: 10, 21.

Type species: *Phytomyza flaveola* Fallén, 1810: l.c.: 26.

Phytomyza fallaciosa Brischke, 1881: Schr. Naturf. Ges. Danzing (N.F.), 5 (1-2): 238.

Description: Wing length from 2.1 to 2.5 mm; frons orange yellow with 2 equal ors, 1 strong ori; hind margin of eyes black; all antennal segments black, third antennal segment relatively large; mesonotum matt greyish with 3+1 strong dorsocentral and 2-4 rows acrostichal bristles; scutellum yellow centrally; mesopleura yellow, humerus, notopleura and lower pleura entirely black; squamae and fringe whitish; legs black but all knees yellowish.

Material Examined: Kahramanmaraş on *Ranunculus* sp., on 14.05.2003, (5♂♂, 12♀♀) by rearing from infested leaves.

Hosts: *Ranunculus* species, particularly *R. repens*, *R. lingua* (Spencer, 1976; Spencer, 1990).

General Distribution: Widespread and common in Europe. Denmark, Finland, Iceland, Norway, Sweden (Spencer, 1976); Poland, Russia, (Soos and Papp, 1984); Germany (Von Tschirnhaus, 1999).

Phytomyza fuscula Zetterstedt, 1838: Insecta Lapp.: 794.

Description: Wing length from 2.3 to 2.6 mm; frons orange yellow with 2 equal ors and 1 ori; face greyish yellow; hind margin of eyes black; all antennal segments black, third antennal segment round; mesonotum greyish black with 3+1 strong dorsocentral bristles, acrostichal bristles sparse irregularly in 2 rows; pleura almost entirely black, mesopleura with only very narrow yellowish upper margin; squamae yellowish-grey, margin and fringe black; legs black but all knees yellowish.

Material Examined: Kahramanmaraş on *Ranunculus* sp. on 21.05.2003 (1♂, 1♀) and on 05.06.2003 (4♂♂, 8♀♀); on *Sonchus asper* on 05.06.2003 (1♀) by rearing from infested leaves.

Hosts: *Ranunculus* species, particularly *R. repens*, *R. lingua* (Spencer, 1976; Spencer, 1990).

General Distribution: Widespread in Central Europe. Denmark, Finland, Iceland, Norway, also in Canada (Spencer, 1976); Germany (Von Tschirnhaus, 1999); Netherlands, (Soos and Papp, 1984).

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