

## Checklist of Agromyzidae (Diptera) of Turkey, with a New Record

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The first checklist of Turkish leafminers of the family Agromyzidae (Diptera), comprising 78 species, is presented. *Melanagromyza cunctans* (Meigen, 1830) is recorded as new for the Turkish leafminer fauna.

KEY WORDS: Checklist; Agromyzidae; leafminers; new record; Turkey.

### INTRODUCTION

Agromyzidae (leafmining flies) is one of the largest fly families, with more than 2742 valid species belonging to 27 genera worldwide (15). From this family, about 1165 species have been identified in the Palearctic region (11). Many species were described in the 19th Century but only a few isolated cases of damage by Agromyzidae are recorded during this period. Hering (10) made a special study of all leafmining orders, and produced keys to European leafminers arranged by plant genera. However, in his study, too great an importance was attached to the food plant and trivial differences in leaf mines as diagnostic characters, and many new species that Hering described on these bases have since been reduced to synonyms. An even more significant advance in clarifying the systematics of the family has been made during the past 45 years with the study of male genitalia. Von Tschirnhaus (18-20) and Spencer (13-16) contributed to the Agromyzidae in terms of both number of taxa and systematics, with many studies conducted from 1960 to the present. Adults can be minute, with a wing length of little more than 1 mm. The maximum size known is 6.5 mm, and the majority of species are in the wing length range of 2 to 3 mm. Larvae of all agromyzid species are internal plant feeders with a family-specific morphology. Most species are miners in leaves where they produce a characteristic form of mine, in most of the cases a substantial aid in identifying the agromyzid. Some species are stem-borers or develop in roots, seeds or galls. One genus develops exclusively in the cambium of young and old trees. Most species are monophagous, a considerable number are oligophagous, while very few are truly polyphagous (6). 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. There are some species that tend to high reproduction and can cause significant yield reduction or even plant mortality when outbreaks do occur.

The Agromyzidae are one of the most important fly families in Turkey because of their pest status, especially on vegetable and ornamental plants in the greenhouses. The Turkish

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agromyzid fauna is not well known. One of the reasons is that only few entomologists identified Agromyzidae caught on Turkish territory (e.g. 2-5,7-8). Another important reason is the difficulty in identifying Agromyzidae in general. However, during the past 15 years many studies have been carried out. Over the past 70 years the identification of some 77 agromyzid species has been reported in Turkey in various publications. It is estimated that the actual Agromyzidae fauna of Turkey is in the range of at least 200–300 species.

The goal of this study was to contribute to the knowledge of the leafminer fauna of Turkey, and to clarify which are valid leafminer species in Turkey. In addition, the findings of this study will provide a base for future research work on the fauna of leafminer species. The list presentation herein is a comprehensive list of the Turkish leafminer fauna and is based on a revision of previously published data (1-5,7-10,12-17). Additionally, in this study a newly recorded species was added to the Turkish leafminer fauna. Representative specimens were deposited in the laboratories of the Technical Education Faculty, Mugla, Ege University, Agricultural Faculty, Plant Protection Dept., Izmir, and of Harran University, Agricultural Faculty, Plant Protection Dept., SanliUrfa, Turkey.

#### CHECKLIST

The checklist follows the classification of Von Tschirnhaus (20). The taxa are presented alphabetically; the synonyms of the species that are not in Von Tschirnhaus' list (20) are given and indicated by an equal sign, =.

##### *Subfamily 1.*

##### Agromyzinae

##### **Genus 1. Agromyza** Fallén, 1810

**albipennis** Meigen, 1830

**albitarsis** Meigen, 1830

**apfelbecki** Strobl, 1902

**frontella** (Rondani, 1875)

**hiemalis** Becker, 1908

**intermittens** (Becker, 1907)

**nana** Meigen, 1830

**reptans** Fallén, 1823

**rondensis** Strobl, 1900

**trebinjensis** Strobl, 1898

= **celtidis** Nowakowski, 1960

**Genus 2. Japanagromyza** Sasakawa, 1958

salicifolii (Collin, 1911)

**Genus 3. Melanagromyza** Hendel, 1920

cunctans (Meigen, 1830): New record for the Turkish fauna

vignalis Spencer, 1959

**Genus 4. Ophiomyia** Braschnikov, 1897

cunctata (Hendel, 1920)

curvipalpis (Zetterstedt, 1848)

inaequabilis (Hendel, 1931)

orbiculata (Hendel, 1931)

phaseoli (Tryon, 1897)

pinguis (Fallén, 1820)

pulicaria (Meigen, 1830)

submaura Hering, 1926

*Subfamily 2.*

Phytomyzinae

**Genus 1. Amauromyza** Hendel, 1931

Subgenus Amauromyza Hendel, 1931

morionella (Zetterstedt, 1848)

Subgenus Cephalomyza Hendel, 1931

flavifrons (Meigen, 1830)

luteiceps (Hendel, 1920)

**Genus 2. Aulagromyza** Enderlein, 1936

buhri (de Meijere, 1938)

hamata (Hendel, 1932)

heringii (Hendel, 1920)

orphana (Hendel, 1920)

populi (Kaltenbach, 1864)

**Genus 3. Calycomyza** Hendel, 1931

**humeralis** (von Roser, 1840)

**Genus 4. Cerodontha** Rondani, 1861

Subgenus **Butomomyza** Nowakowski, 1967

**angulata** (Loew, 1869)

Subgenus **Cerodontha** Rondani, 1861

**denticornis** (Panzer, 1806)

**Genus 5. Chromatomyia** Hardy, 1849

**horticola** (Goureau, 1851)

**mili** (Kaltenbach, 1864)

**scolopendri** (Robineau-Desvoidy, 1851)

**Genus 6. Liriomyza** Mik, 1894

**amoena** (Meigen, 1830)

**balcanica** (Strobl, 1898)

**brassicae** (Riley, 1884)

**bryoniae** (Kaltenbach, 1858)

**cannabis** Hendel, 1931

**centaureae** Hering, 1927

**cepae** (Hering, 1927)

**cicerina** (Rondani, 1875)

**congesta** (Becker, 1903)

**flaveola** (Fallén 1823)

**hieracivora** Spencer, 1971

**huidobrensis** (Blanchard, 1926)

**orbona** (Meigen, 1830)

**pusilla** (Meigen, 1830)

**sativae** Blanchard, 1938

= **verbenicola** Hering, 1951

- = pullata Frick, 1952
- = canomarginis Frick, 1952
- = minutiseta Frick, 1952
- = propepusilla Frost, 1954
- = munda Frick, 1957
- = guytona Freeman, 1958
- = lycopersicae (de la Cruz, 1981)

**strigata** (Meigen, 1830)

**trifolii** (Burgess, 1880)

**Genus 7. Napomyza** Westwood, 1840

**clematidis** (Kaltenbach, 1859)

**lateralis** (Fallén, 1823)

**Genus 8. Phytoliriomyza** Hendel, 1931

**arctica** (Lundbeck, 1901)

**Genus 9. Phytomyza** Fallén, 1810

**affinis** Fallén, 1823

**angelicae** Kaltenbach, 1872

**chelonei** Spencer, 1969

**cirsii** Hendel, 1923

**conyzae** Hering, 1920

**ferulae** Hering, 1927

= umbelliferanum, Hering, 1935

= danci, Spencer, 1966

**gymnostoma** (Loew, 1858)

**kaltenbachi** Hendel, 1922

**lappae** Goureau, 1851

**orobanchia** Kaltenbach, 1864

**petoei** Hering, 1924

**plantaginis** Robineau-Desvoidy, 1851

**ranunculi** (Schrank, 1803)

**rufescens** von Roser, 1840

**rufipes** Meigen, 1830

**spoliata** Strobl, 1906

**tenella** Meigen, 1830

**tetrasticha** Hendel, 1927

**thysselinivora** Hering, 1924

**Genus 10. Pseudonapomyza** Hendel, 1920

**atra** (Meigen, 1830)

**hispanica** Spencer, 1973

**spicata** (Malloch, 1914)

**spinosa** Spencer, 1973

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