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A STUDY OF THE FAUNA OF LEAF-MINER FLIES OF THE SUBFAMILY AGROMYZINAE (DIPTERA: AGROMYZIDAE) OF UKRAINE. REPORT 4. THIRTEEN NEW SPECIES FOR THE FAUNA OF UKRAINE

Гугля, Ю. А. Вивчення фауни мінуючих мушок підродини Agromyzinae (Diptera: Agromyzidae) України. Повідомлення 4. Тринадцять нових видів для фауни України. *Вісник Харк. ентомол. т-ва*. 2016. Т. XXIV, вип. 2. С. 17–24.

За результатами досліджень 2009–2015 років на території Східної та Північно-Східної України всього знайдено 90 видів мінуючих мушок з підродини Agromyzinae. Тринадцять видів, а саме *Melanagromyza verbasci* Spencer, 1957, *Ophiomyia galii* Hering, 1937, *O. hieracii* Spencer, 1964, *O. pannonica* Černý, 2015, *O. rostrata* (Hendel, 1920), *O. ungarensis* Černý, 2015, *Agromyza abdita* L. Papp, 2015, *A. flavipennis* Hendel, 1920, *A. lucida* Hendel, 1920, *A. marionae* Griffiths, 1963, *A. megalopsis* Hering, 1933, *A. seticercus* L. Papp, 2015 та *A. viciae* Kaltenbach, 1974, наведено вперше для цієї території. Стаття містить описи та зображення геніталій самок *M. provecta*, *M. pubesens*, *A. flavipennis* та *A. seticercus*. 5 рис., 9 назв.

Ключові слова: мінуючі мушки, Diptera, Agromyzidae, Agromyzinae, Україна, фауна, біологія, поширення.

Гугля, Ю. А. Изучение фауны минирующих мушек подсемейства Agromyzinae (Diptera: Agromyzidae) Украины. Сообщение 4. Тринадцать новых видов для фауны Украины. *Изв. Харьк. энтомол. о-ва*. 2016. Т. XXIV, вып. 2. С. 17–24.

По результатам исследований 2009–2015 годов на территории Восточной и Северо-Восточной Украины всего обнаружено 90 видов минирующих мушек из подсемейства Agromyzinae. Тринадцать видов, такие как *Melanagromyza verbasci* Spencer, 1957, *Ophiomyia galii* Hering, 1937, *O. hieracii* Spencer, 1964, *O. pannonica* Černý, 2015, *O. rostrata* (Hendel, 1920), *O. ungarensis* Černý, 2015, *Agromyza abdita* L. Papp, 2015, *A. flavipennis* Hendel, 1920, *A. lucida* Hendel, 1920, *A. marionae* Griffiths, 1963, *A. megalopsis* Hering, 1933, *A. seticercus* L. Papp, 2015 и *A. viciae* Kaltenbach, 1974, приведены впервые для данной территории. Статья содержит описания и изображения гениталий самок *M. provecta*, *M. pubesens*, *Agromyza flavipennis* и *A. seticercus*. 5 рис., 9 назв.

Ключевые слова: минирующие мушки, Diptera, Agromyzidae, Agromyzinae, Украина, фауна, биология, распространение.

Guglya, Yu. A. A study of the fauna of leaf-miner flies of the subfamily Agromyzinae (Diptera: Agromyzidae) of Ukraine. Report 4. Thirteen new species for the fauna of Ukraine. *The Kharkov Entomol. Soc. Gaz.* 2016. Vol. XXIV, iss. 2. P. 17–24.

During 2009–2015, 90 species of mining flies of the subfamily Agromyzinae were recorded from Eastern and North-Eastern Ukraine. Thirteen species, such as *Melanagromyza verbasci* Spencer, 1957, *Ophiomyia galii* Hering, 1937, *O. hieracii* Spencer, 1964, *O. pannonica* Černý, 2015, *O. rostrata* (Hendel, 1920), *O. ungarensis* Černý, 2015, *Agromyza abdita* L. Papp, 2015, *A. flavipennis* Hendel, 1920, *A. lucida* Hendel, 1920, *A. marionae* Griffiths, 1963, *A. megalopsis* Hering, 1933, *A. seticercus* L. Papp, 2015, and *A. viciae* Kaltenbach, 1974, are recorded for Ukraine for the first time. The article includes description and images of female terminalia of *M. provecta*, *M. pubesens*, *Agromyza flavipennis*, and *A. seticercus*. 5 figs., 9 refs.

Keywords: leaf-miner flies, Diptera, Agromyzidae, Agromyzinae, Ukraine, fauna, bionomics, distribution.

Introduction. During previous investigation of mining flies fauna, 77 species were found in Ukraine (Guglya, 2015). This paper contains additional data on Agromyzinae fauna collected since 2009.

Material and methods. Material was collected by the author in 45 localities mainly in the Eastern and Northeastern Ukraine during 2009–2015. Adults were collected mostly by sweeping net. Dissected genitalia were macerated in potassium hydroxide solution, washed, examined in glycerol, and stored in a microvial pinned together with the fly specimen. Some adults are reared from larva using the methods described by Yu. Guglya (2010). Plants are identified using 'A key to higher plants of Ukraine' (Prokudin, 1987). All drawings are made by the author. The keys by Černý (1994), Papp and Černý (2015), and Spencer (1964, 1966, 1976) were used for species identification. All the material is deposited in the collection of the Museum of Nature of the Vasyl Karazin Kharkiv National University.

Results and discussions. In this paper, 46 species of three genera are discussed: genus *Melanagromyza* — 7 species, *Ophiomyia* — 21 species, and *Agromyza* — 17 species. A total of 506 specimens (225 ♂♂ and 281 ♀♀) were collected and identified by the author.

List of locations of collected material. **Bairak** — Kharkiv Region (49° 25' N, 36° 50' E); **Balakleya** — Kharkiv Region (49° 25' N, 36° 50' E); **Bila Tserkva** — Kyiv Region (49° 48' N, 30° 04' E); **Bohuslavka** — Kharkiv Region (49° 26' N, 37° 38' E); **Deimanivka** — Poltava Region (50° 12' N,

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32° 38' E); **Dvorichna** — Kharkiv Region (49° 51' N, 37° 40' E); **Haidary** — Kharkiv Region, The National Nature Park 'Homilshanski Lisyy' (49° 37' N, 36° 19' E); **Hatyshche** — Kharkiv Region (50° 18' N, 36° 51' E); **Ilienko** — Luhansk Region, (48° 38' N, 36° 41' E); **Ichnya** — Chernihiv Region (50° 49' N, 32° 22' E); **Irpin** — Kyiv Region (50° 30' N, 30° 15' E); **Kamianka** — Kharkiv Region, The National Nature Park 'Dvorichanskiy' (49° 59' N, 37° 53' E); **Karavan** — Kharkiv Region (50° 03' N, 36° 07' E); **Kharkiv: Botanical Garden** — 50° 01' N, 36° 14' E, **Piatykhatky** — 50° 05' N, 36° 14' E, **Sokolnyky** — 49° 25' N, 36° 15' E, **Velyka Danylivka** — 50° 01' N, 36° 18' E; **Kochetok** — Kharkiv Region (49° 51' N, 36° 43' E); **Kovpakivka** — Kharkiv Region (49° 09' N, 35° 01' E); **Krasne Pershe** — Kharkiv Region (49° 56' N, 37° 47' E); **Kuripchyne** — Mykolaiv Region, The National Nature Park 'Buzkyi Gard' (49° 59' N, 31° 00' E); **Kuzemyn** — Sumy Region, The National Nature Park 'Hetmanskyi' (50° 08' N, 34° 40' E); **Kyiv: Botanical Garden** — M. M. Grishko National Botanical Garden of the NAS of Ukraine (50° 24' N, 30° 33' E), **Syretskyi Park** — (50° 28' N, 30° 26' E); **Kytsivka** — Kharkiv Region (49° 51' N, 36° 49' E); **Lelyaky** — Poltava Region (50° 19' N, 32° 29' E); **Lyman** — Kharkiv Region (49° 35' N, 36° 28' E); **Masalskyi Isl.** — Poltava region (50° 14' N, 32° 31' E); **Mokhnach** — Kharkiv Region (49° 44' N, 36° 32' E); **Omelchenky** — Kharkiv Region (49° 38' N, 36° 24' E); **Orchyk** — Kharkiv Region (49° 09' N, 35° 01' E); **Petrivske** — Kharkiv Region (49° 10' N, 36° 58' E); **Pyryatyn** — Poltava Region (50° 14' N, 32° 30' E); **Rubizhne** — Kharkiv Region (50° 10' N, 36° 47' E); **Sasynivka** — Poltava Region (50° 18' N, 32° 25' E); **Stara Pokrovka** — Kharkiv Region (49° 48' N, 36° 32' E); **Trostianets** — Sumy Region (50° 28' N, 34° 55' E); **Tymchenky** — Kharkiv Region (49° 44' N, 36° 08' E); **Vakalivshchyna** — Sumy Region (51° 02' N, 34° 55' E); **Velyka Pysarivka** — Sumy Region, The National Nature Park 'Getmanskiy' (50° 26' N, 35° 28' E); **Vilkhuvatka** — Kharkiv Region (50° 11' N, 37° 31' E); **Volokhiv Yar** — Kharkiv Region (49° 36' N, 36° 57' E); **Vusivka** — Poltava Region (50° 19' N, 32° 32' E); **Zarichchya** — Poltava Region (50° 14' N, 32° 33' E); **Zmiiv** — Kharkiv Region, (49° 40' N, 36° 21' E).

Genus *Melanagromyza* Hendel, 1920

Melanagromyza aenea (Meigen, 1830)

Material. Near Mokhnach, flood-land, 29.04.2012 — 1 ♂, near Mokhnach, Malaise trap, 29.04.2012 — 1 ♂; Syretskyi Park, sweeping on the thicket of *Urtica dioica* L., 19.05.2015 — 9 ♀♀; Irpin, flood-lands of the River Irpin, thicket of *Urtica dioica*, 20.05.2015 — 9 ♀♀.

Melanagromyza albocilia Hendel, 1931

Material. Piatykhatky, high grass in a gully, 10.06.2010 — 2 ♀♀; near Lelyaky, sweeping on the thicket of *Medicago sativa* L., 08.08.2015 — 2 ♂♂.

Melanagromyza astragali Spencer, 1976

Material. Irpin, opening near deciduous forest, 20.05.2015 — 5 ♂♂, 6 ♀♀, edge of deciduous forest, 20.05.2015 — 4 ♂♂, 3 ♀♀; Kyiv, Botanical Garden, high grass meadow, 21.05.2015 — 2 ♀♀; Irpin, edge of deciduous forest, 22.05.2015 — 3 ♂♂; Kyiv, Botanical Garden, thicket of *Astragalus cicer* L., 21.06.2015 — 3 ♂♂, 6 ♀♀.

Melanagromyza cunctans (Meigen, 1830)

Material. Near Rubizhne, high grass slope, 31.05.2015 — 2 ♂♂; near Zarichchya, flood-land, 07.08.2015 — 1 ♂, 2 ♀♀; Piatykhatky, high grass in the gully, 28.08.2015 — 1 ♂; near Tymchenky, low grass meadow, 13.09.2015 — 3 ♂♂, 5 ♀♀.

Melanagromyza provecta (de Meijere, 1910)

Description of female terminalia (Fig. 1, a–c). Both spermathecae are identical, highly elongated, weakly sclerotized, look like hyaline. All surface is sparsely covered with minute denticles. Ventral seminal receptacle s-shaped, with strong narrowing located slightly proximally. Egg-guide with numerous brown large scales located on medial membrane. Proximal margin of egg-guide narrowly stretched out.

Material. Near Petrivske, opening between coniferous and deciduous forests, 23.07.2015 — 1 ♂, 2 ♀♀.

Melanagromyza pubescens Hendel, 1923

Description of female terminalia (Fig. 1, d–f). Spermathecae are identical for *M. provecta*, but, minute denticles are more numerous. Ventral seminal receptacle s-shaped, with centrally located strong narrowing. Egg-guide without any scales on medial membrane. Proximal margin of egg-guide acute, but not stretched out.

Material. Kyiv, Syretskyi Park, motley grass on sand, 18.06.2015 — 1 ♂, 2 ♀♀; Irpin, small shadowy gully near deciduous forest, 19.06.2015 — 1 ♀; Kyiv, Botanical Garden, shadowy grass thicket, 21.06.2015 — 1 ♀.

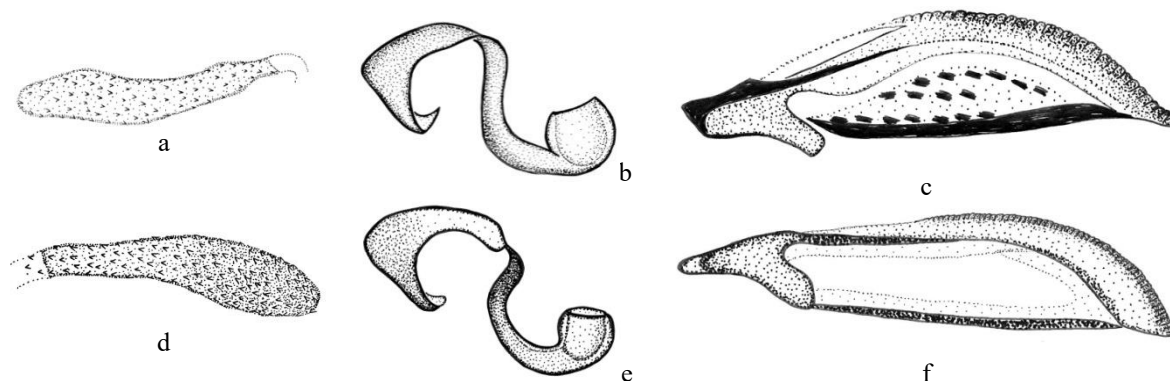


Fig. 1. Female terminalia of *Melanagromyza provecta* (a–c) and *Melanagromyza pubescens* (d–f): a, d — spermatheca; b, e — ventral seminal receptacle; c, f — egg guide, left blade.

***Melanagromyza verbasci* Spencer, 1957**

Material. Near Petrivske, flood-land, 11.05.2014 — 1 ♂.

Distribution. Occurs in Spain, Germany, Czech Republic and Lithuania (Papp and Černý, 2015). First record for Ukraine.

Genus *Ophiomyia* Braschnikov, 1897

***Ophiomyia cornifera* Hendel, 1920**

Material. Near Ichnya, sweeping on high motley grass, 25.06.2015 — 1 ♂.

***Ophiomyia cunctata* (Hendel, 1920)**

Material. Kharkiv, Velyka Danylivka, ex *Taraxacum officinale* Webb ex Wigg., linear mine along the midrib with larva — 21.04.2015, 22.04.2015 — pupa, 08.05.2015 — ex pupa — 1 ♀; near Vusivka, coniferous forest, 08.08.2015 — 1 ♀; Kharkiv, Velyka Danylivka, ex *Sonchus asper* (L.) Hill., linear mine along the midrib with larva — 25.07.2015, 11.08.2015 — ex pupa — 1 ♂; Bila Tserkva, 'Olexandriya' Park, low motley grass, 27.08.2011 — 1 ♀.

***Ophiomyia curvipalpis* (Zetterstedt, 1848)**

Material. Kyiv, Botanical Garden, shadowy motley grass, 21.06.2015 — 1 ♂; near Lelyaky, wet meadow, 08.08.2015 — 1 ♀; Piatykhvatky, high grass in a gully, 28.08.2015 — 4 ♀♀; near Tymchenky, low grass flood-land, 13.09.2015 — 1 ♂.

***Ophiomyia galii* Hering, 1937**

Material. Near Petrivske, clearing between coniferous and deciduous forests (a lot of *Galium* sp.), 08.06.2014 — 1 ♂; Irpin, edge of deciduous forest (a lot of *Galium* sp.), 19.06.2015 — 1 ♂; near Petrivske, clearing between coniferous forest and thicket of black torn, 23.07.2015 — 1 ♂.

Bionomics. Two generations were recorded in Ukraine.

Distribution. Palaearctic species (Papp and Černý, 2015). First record for Ukraine.

***Ophiomyia hieracii* Spencer, 1964**

Material. Near Rubizhne, high and thick grass in the forest stand of *Robinia pseudoscacia* L. and *Pinus* sp., 17.08.2014 — 1 ♂.

Distribution. Recorded from Norway, Sweden, Germany, Hungary, Poland, Latvia, Lithuania, Belarus and European part of Russia (Papp and Černý, 2015). First record for Ukraine.

***Ophiomyia inaequalis* (Hendel, 1931)**

Material. Kyiv, Botanical Garden, thicket of *Asparagus cicer*, 21.06.2015 — 1 ♀.

***Ophiomyia labiatarum* Hering, 1937**

Material. Karavan, 28.04.2014 — 1 ♀; near Kamianka, chalk hill, 16.05.2010 — 1 ♀; Irpin, light highland oak grove, 20.05.2015 — 1 ♂; near Vakalivshchina, high grass in a gully, 15.06.2010 — 1 ♂; Kyiv, Syretskyi Park, 18.06.2015 — 1 ♂; Irpin, shadowy gully near the edge of deciduous forest, 19.06.2015 — 1 ♀; Velyka Pysarivka, grass on the bank, 23.06.2012 — 2 ♂♂; near Ichnya, 24.06.2015 — 1 ♀; Kuripchyne, edge of deciduous forest, 27.06.2010 — 8 ♂♂, 10 ♀♀; near Petrivske, opening in deciduous forest, 04.07.2010 — 3 ♂♂, 1 ♀; near Kochetok, wet grass thicket on the bank, 16.07.2010 — 1 ♂; near Illienko, flood-land, bank of the Derkul River, 23.07.2010 — 1 ♂; near Kytsivka, shadowy clearing in a small deciduous forest, 26.07.2014 — 1 ♂, dry grass on a slope, 26.07.2014 — 1 ♂, thicket of *Carex* sp. and *Erigeron canadensis* L. in apple orchard near the bog, 26.07.2014 — 1 ♂; near Vilkhuvatka, dry meadow, 06.08.2011 — 1 ♂; near Lelyaky, sweeping on thicket of *Medicago sativa*, 08.08.2015 — 1 ♂; near Petrivske, opening between coniferous forest and black torn, 10.08.2013 — 1 ♂; near Kuzemyn, flood-land near aspen wood, 13.08.2011 — 3 ♂♂; near Rubizhne, slope with thicket of *Trifolium* sp., 17.08.2014 — 1 ♀.

Bionomics. Three or four generations develop from April to August.

***Ophiomyia longilingua* (Hendel, 1920)**

Material. Irpin, meadow near deciduous forest, 19.06.2015 — 1 ♂, edge of deciduous forest, 19.06.2015 — 1 ♀, dry meadow, 19.06.2015 — 1 ♀.

***Ophiomyia melandryi* de Meijere, 1924**

Material. Irpin, light highland oak grove, 20.05.2015 — 1 ♂, 2 ♀♀, shadowy grass thicket, 22.05.2015 — 1 ♂.

***Ophiomyia moravica* Černý, 1994**

Material. Kyiv, Botanical Garden, meadow, 21.05.2015 — 1 ♂.

***Ophiomyia nasuta* (Melander, 1830)**

Material. Near Zarichchya, flood-land, 07.08.2015 — 2 ♂♂; near Sasynivka, meadow, 08.08.2015 — 1 ♂; near Lelyaky, sweeping on thicket of *Medicago sativa*, *Trifolium* sp. and *Taraxacum officinale*, 08.08.2015 — 1 ♂, near Lelyaky, wet meadow, 08.08.2015 — 2 ♀♀; near Deimanivka, 09.08.2015 — 1 ♂.

***Ophiomyia orbiculata* (Hendel, 1913)**

Material. Irpin, meadow, 20.05.2015 — 3 ♀♀, edge of deciduous forest, 22.05.2015 — 1 ♂, 2 ♀♀; near Kovpakivka, flood-land, 23.05.2009 — 1 ♀; Bila Tserkva, 'Olexandriya' Park, edge of deciduous forest, 20.06.2015 — 1 ♂, 1 ♀; near Ichnya, flood-land, 25.06.2015 — 1 ♂, 4 ♀♀; near Zarichchya, flood-land, 07.08.2015 — 1 ♀, near Vusivka, birch wood, 08.08.2015 — 1 ♀; near Lelyaky, wet meadow, 08.08.2015 — 1 ♂, 3 ♀♀, sweeping on a thicket of *Medicago sativa*, 08.08.2015 — 1 ♀; Piatykhatky, high grass in a gully, 28.08.2015 — 1 ♀.

***Ophiomyia pannonica* Černý, 2015**

Material. Near Petrivske, clearing, 11.08.2013 — 1 ♂.

Bionomics. One generation was recorded in Ukraine.

Distribution. Hungary (Papp and Černý, 2015). First record for Ukraine.

***Ophiomyia pinguis* (Fallén, 1820)**

Material. Near Deimanivka, meadow, 09.08.2015 — 2 ♂♂; near Tymchenky, low grass flood-land, 13.09.2015 — 2 ♂♂, 1 ♀.

***Ophiomyia punctata* Guglya, 2013**

Material. Near Sasynivka, meadow, 08.08.2015 — 1 ♂.

Bionomics. At least three generations develop from April to August.

***Ophiomyia ranunculicaulis* Hering, 1949**

Material. Irpin, edge of deciduous forest, 22.05.2015 — 1 ♂.

***Ophiomyia rostrata* (Hendel, 1920)**

Material. Near Ichnya, flood-land, 25.06.2015 — 1 ♂.

Distribution. Palaearctic species known from many European countries and Uzbekistan (Papp and Černý, 2015). First record for Ukraine.

***Ophiomyia slovaca* Černý, 1994**

Material. Irpin, low grass meadow, 20.05.2015 — 3 ♂♂.

***Ophiomyia spenceri* Černý, 1985**

Material. Irpin, light highland oak grove, 20.05.2015 — 1 ♂.

***Ophiomyia submaura* Hering, 1926**

Material. Piatykhatky, low grass in a gully, 28.08.2015 — 1 ♂.

***Ophiomyia ungarensis* Černý, 2015**

Material. Near Kamianka, slope of chalk hill, 01.06.2013 — 1 ♂.

Bionomics. One generation was recorded in Ukraine, but probably develop at least two generations from May to July.

Distribution. Hungary (Papp and Černý, 2015). First record for Ukraine.

Genus *Agromyza* Fallén, 1810

***Agromyza abdita* L. Papp, 2015 (Fig. 4, a, d, f)**

Material. Near Petrivske, sweeping on grasses, 10.05.2012 — 1 ♂, 1 ♀; near Orchyk, grass on a country road, 15.05.2011 — 1 ♂; Dvorichna, chalk gully, 16.05.2014 — 1 ♂, 5 ♀♀; near Lyman, location Sukhoi Lyman, wet meadow, 18.05.2013 — 1 ♂, 2 ♀♀; near

Krasne Pershe, grass on a country road, 23.05.2012 — 1 ♂; Dvorichna, country road on a flood-land, 24.07.2014 — 1 ♂; near Lelyaky, wet meadow, 08.08.2015 — 1 ♂; near Kuzemyn, flood-land, 14.08.2011 — 1 ♂.

Bionomics. At least two generations develop from May to August.

Distribution. Described from Hungary (Papp and Černý, 2015). First record for Ukraine.

Agromyza anthracina Meigen, 1830

Material. Kyiv, Syretskyi Park, sweeping on a thicket of *Urtica dioica*, *Lappula* sp. and *Chelidonium majus* L., 19.05.2015 — 1 ♀.

Agromyza bicaudata (Hendel, 1920)

Material. Near Petrivske, opening between coniferous and deciduous forests, 03.05.2015 — 2 ♂♂, 2 ♀♀.

Agromyza bromi Spencer, 1966

Material. Irpin, meadow, near deciduous forest, 20.05.2015 — 1 ♂, 1 ♀, flood-land of the Irpin River, thicket of *Urtica dioica*, 20.05.2015 — 1 ♀; Kyiv, Botanical Garden, thicket of *Urtica dioica*, *Aegopodium podagraria* L., *Geranium* sp., 21.05.2015 — 1 ♀; Irpin, shadowy grass thicket under oaks, 22.05.2015 — 1 ♀, edge of oak forest, 22.05.2015 — 1 ♂; near Petrivske, grass on a shadowy path in deciduous forest, 23.07.2015 — 1 ♀; near Sasynivka, meadow, 08.08.2015 — 1 ♂, 1 ♀; Bila Tserkva, 'Olexandriya' Park, meadow, 27.08.2011 — 1 ♀.

Agromyza cinerascens Maquart, 1835

Material. Near Petrivske, thicket of grasses and *Urtica dioica* under willows, 03.05.2015 — 1 ♀, edge of deciduous forest, 03.05.2015 — 1 ♀.

Agromyza flavipennis Hendel, 1920 (Fig. 2, a–c).

Description of female terminalia. Both spermathecae are identical, distinctly large, dark-brown, egg-shaped, slightly narrowed basally. Basal collar is absent.

Material. Near Petrivske, thicket of grasses and *Urtica dioica* under willows, 03.05.2015 — 2 ♂♂, 1 ♀, edge of deciduous forest, 03.05.2015 — 3 ♂♂, 1 ♀.

Bionomics. One generation was recorded in May.

Distribution. Widespread but not common in Europe (Papp and Černý, 2015). First record for Ukraine.

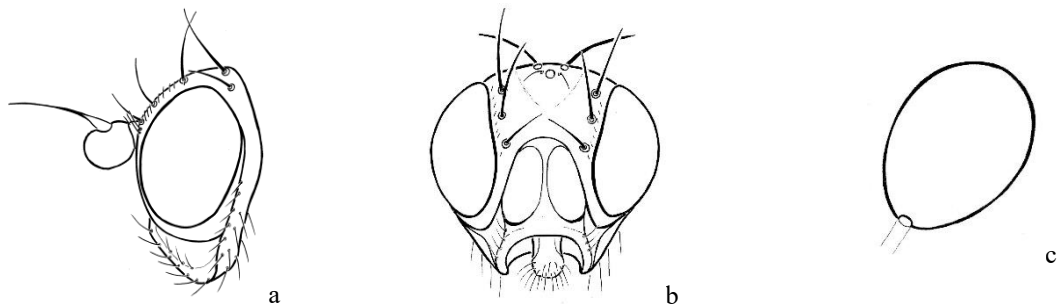


Fig. 2. *Agromyza flavipennis*: a — male head (lateral view); b — male head (frontal view); c — spermatheca.

Agromyza frontella (Rondani, 1878)

Material. Irpin, meadow near deciduous forest, 20.05.2015 — 3 ♂♂, 6 ♀♀, edge of deciduous forest, 19.06.2015 — 1 ♂, 1 ♀; near Lelyaky, sweeping on a thicket of *Medicago sativa*, 08.08.2015 — 1 ♂, 4 ♀♀.

Agromyza idaeiana Hardy, 1853

Material. Near Rubizhne, slope with a *Trifolium* sp. thicket, 17.08.2014 — 1 ♂.

Agromyza lucida Hendel, 1920

Material. Near Bohuslavka, edge and underbrush in alder thickets, 22.06.2013 — 1 ♂; near Petrivske, high grass flood-land, 03.07.2010 — 2 ♂♂.

Bionomics. One generation was recorded in May.

Distribution. Widely distributed species in Europe, also known from Nearctic and Oriental Regions (Papp and Černý, 2015). First record for Ukraine.

Agromyza marionae Griffiths, 1963 (Fig. 3 (a-c)).

Material. Irpin, light highland oak grove, 20.05.2015 — 1 ♂.

Bionomics. One generation was recorded in May.

Distribution. Widespread in the northern and central belt of Europe (Papp and Černý, 2015), Turkey (Civelek, Çikman and Dursun, 2009). The first record for Ukraine.

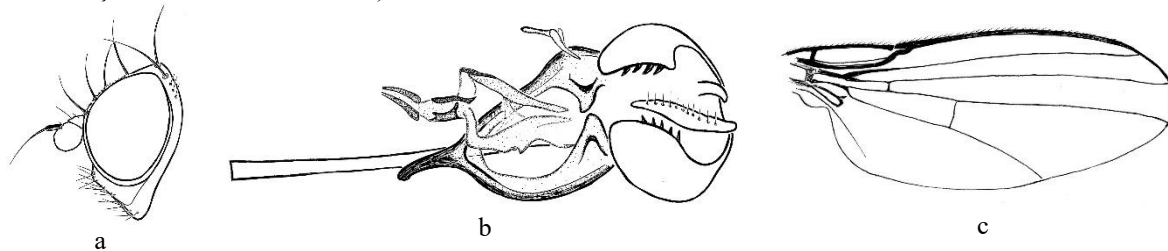


Fig. 3. *Agromyza marionae*: a — male head (lateral view); b — male terminalia (total ventral view); c — wing.

Agromyza megalopsis Hering, 1933

Material. Near Petrivske, meadow, 03.05.2015 — 1 ♂.

Bionomics. One generation was recorded in May.

Distribution. Occurs in many European countries from Denmark to Crete (Papp and Černý, 2015). First record for Ukraine.

Agromyza mobilis Meigen, 1830

Material. Kyiv, Botanical Garden, wet thicket of *Urtica dioica*, *Aegopodium podagraria*, *Geranium* sp. and different grasses, 21.05.2015 — 1 ♂; near Rubizhne, opening in the forest stand of *Robinia pseudoscacia* and *Pinus* sp., 31.05.2015 — 1 ♂, 5 ♀♀; Bila Tserkva, 'Olexandriya' Park, edge of deciduous forest, 20.06.2015 — 1 ♀; Masalskyi Isl., opening in oak forest, 10.08.2015 — 1 ♀.

Agromyza prespana Spencer, 1957

Material. Irpin, meadow near deciduous forest, 20.05.2015 — 8 ♂♂, 12 ♀♀, clearing in deciduous forest, 20.05.2015 — 1 ♀; Kyiv, Botanical Garden, meadow, 21.05.2015 — 1 ♂, 2 ♀♀, shadowy thicket of *Urtica dioica* on a slope, 21.05.2015 — 7 ♂♂, 3 ♀♀; Irpin, shadowy low grass opening, 22.05.2015 — 1 ♀, thicket of *Rubus caesius* L. under oaks, 22.05.2015 — 1 ♂, 1 ♀, shadowy wet grass thicket, 22.05.2015 — 1 ♀; Kyiv, Syretskyi Park, dry grass on sand, 18.06.2015 — 2 ♂♂, 1 ♀, thicket of *Dactylis glomerata* L., 18.06.2015 — 1 ♂; Kyiv, Botanical Garden, shadowy grass land, 21.06.2015 — 1 ♂; near Ichnya, shadowy thicket of *Urtica dioica* on the edge of deciduous forest, 25.06.2015 — 2 ♂♂.

Agromyza pseudoreptans Nowakowski, 1967

Material. Kyiv, Syretskyi Park, thicket of *Urtica dioica*, *Lappula* sp., *Geum* sp., 19.05.2015 — 5 ♂♂, 3 ♀♀; near Ichnya, sweeping on a thicket of *Aegopodium podagraria* and *Impatiens balsamina* L. (also present *Urtica dioica*, *Sambucus* sp. and *Arctium tomentosum* Mill.), 24.06.2015 — 3 ♂♂, 2 ♀♀; Masalskyi Isl., opening in oak forest, 10.08.2015 — 1 ♀.

Bionomics. At least three generations develop in May–August.

Agromyza reptans Fallén, 1823

Material. Irpin, flood-land of the River Irpin, thicket of *Urtica dioica*, 20.05.2015 — 1 ♂, 2 ♀♀; Kyiv, Botanical Garden, wet thicket of *Urtica dioica*, *Aegopodium podagraria*, *Geranium* sp. and different grasses, 21.05.2015 — 3 ♂♂, 3 ♀♀, meadow (*Urtica dioica* presents), 21.05.2015 — 1 ♂; Kyiv, near Syretskyi Park, grass land, 18.06.2015 — 2 ♂♂, 1 ♀; Kyiv, Botanical Garden, glade near a hornbeam avenue, 21.06.2015 — 1 ♀; near Ichnya, sweeping on a thicket of *Aegopodium podagraria* and *Impatiens balsamina* (*Urtica dioica* also presents), 24.06.2015 — 3 ♂♂, 2 ♀♀, shadowy thicket of *Urtica dioica* on a edge of alder thickets, 25.06.2015 — 2 ♀♀; Masalskyi Isl., opening in oak forest, 10.08.2015 — 1 ♀.

Agromyza seticercus L. Papp, 2015 (Fig. 4, b, c, e)

Material. Near Balakleya, flood-land of the Siverskyi Donets River, 04.05.2013 — 1 ♀; Stara Pokrovka, on grasses on the bank of the Vudy River, 11.05.2014 — 1 ♀; Kharkiv, Botanical Garden, edge of deciduous forest, 12.05.2012 — 1 ♀, opening with thicket of *Trifolium* sp., 12.05.2012 — 1 ♀; near Kamianka, flood-land, 14.05.2010 — 1 ♀; Dvorichna, chalk gully, 16.05.2014 — 3 ♀♀; near Omelchenky, edge of coniferous forest, 18.05.2013 — 1 ♀; Irpin, sweeping on grasses on a flood-land, 20.05.2015 — 1 ♀, meadow near deciduous forest, 20.05.2015 — 2 ♀♀; near Rubizhne, edge of deciduous forest, 20.05.2012 — 7 ♂♂, 5 ♀♀; Kyiv, Botanical Garden, meadow, 21.05.2015 — 1 ♂; near Kuzemyn, sweeping on the opening, 22.05.2010 — 1 ♀; Irpin, edge of deciduous forest, 22.05.2015 — 1 ♀, shadowy grass land under oaks, 22.05.2015 — 1 ♀; near Volokhiv Yar, gully, 22.05.2011 — 1 ♀; near Krasne Pershe, flood-land, 23.05.2012 — 1 ♀; near Kovpakivka, clearing in coniferous forest, 25.05.2013 — 4 ♀♀; Dvorichna, sweeping on a flood-land, 31.05.2013 — 1 ♂; near Kamianka, slope of chalk hills, 01.06.2013 — 1 ♂, 1 ♀; near Haydary, flood-land, 03.06.2011 — 1 ♀, meadow, near deciduous forest, 04.06.2011 — 1 ♀, clearing in deciduous forest, 04.06.2011 — 1 ♀; near Tymchenky, high grass opening in coniferous forest, 06.06.2010 — 2 ♂♂, 1 ♀; near Petrivske, high grass opening in deciduous forest, 06-08.06.2009 — 1 ♂, clearing between deciduous and coniferous forests, 08.06.2014 — 1 ♂, 1 ♀; near Rubizhne, edge of deciduous forest, 11.06.2011 — 1 ♂; near Vakalivshchina, glade, 16.06.2010 — 1 ♀, grass land on a slope, 13.06.2013 — 3 ♂♂, shadowy grass land on a slope, 14.06.2013 — 2 ♂♂, 4 ♀♀; Kyiv, Syretskyi Park, grass land on sand, 18.06.2015 — 1 ♀; Irpin, shadowy gully near oak forest, 19.06.2015 — 1 ♀, edge of deciduous forest, 19.06.2015 — 2 ♀♀; Bila Tserkva, 'Olexandriya' Park, edge of deciduous forest, 20.06.2015 — 5 ♂♂, 3 ♀♀; near Bohuslavka, edge of alder thickets, 22.06.2013 — 3 ♂♂, 4 ♀♀; near Ichnya, grass land opening in mixed forest, 23.06.2015 — 1 ♂; Velyka Pysarivka, grasses under poplars on the bank, 23.06.2012 — 1 ♂; near Ichnya, grass land in coniferous forest, 23.06.2015 — 1 ♀, dry grass, 24.06.2015 — 2 ♂♂, 2 ♀♀; Velyka Pysarivka, shadowy spit, bank of the Vorskla River,

24.06.2012 — 1 ♂, 1 ♀; near Ichnya, shadowy thicket of *Urtica dioica*, 25.06.2015 — 4 ♂♂, 9 ♀♀, grass land between country buildings, 25.06.2015 — 2 ♀♀, high grass opening in alder thickets, 25.06.2015 — 1 ♀; Kharkiv, Sokolnyky, edge of deciduous forest, 10.07.2011 — 1 ♀; Trostianets, 'Neskuchnoye' Park, grass land on a slope, 11.07.2013 — 4 ♂♂, 3 ♀♀; near Petrivske, opening near a country road, 12.07.2014 — 1 ♂; near Hatyshche, flood-land, 15.07.2010 — 1 ♂, 2 ♀♀; near Zmiiv, wet meadow on a bank, 17.07.2010 — 2 ♂♂, 3 ♀♀; near Bairak, grass land, 18.07.2010 — 1 ♂, 1 ♀; near Kovpakivka, grasses near a country road, 18.07.2009 — 1 ♂; near Rubizhne, grasses on a shadowy path, 19.07.2014 — 2 ♀♀; near Petrivske, shadowy opening on the bank, 23.07.2015 — 6 ♂♂, 5 ♀♀, clearing between coniferous and deciduous forests, 23.07.2015 — 4 ♂♂, 6 ♀♀, edge, 23.07.2015 — 2 ♂♂, 6 ♀♀, shadowy path in deciduous forest, 23.07.2015 — 3 ♀♀; Dvorichna, grasses in a small deciduous forest on the bank of the Oskil River, 24.07.2014 — 2 ♂♂, 1 ♀; near Vusivka, coniferous forest, 08.08.2015 — 1 ♀♀; Pyryatyn, high grass land, 09.08.2015 — 1 ♀; near Kuzemyn, flood-land, 13.08.2011 — 1 ♂, 1 ♀; near Rubizhne, slope with a thicket of *Trifolium* sp., 17.08.2014 — 2 ♂♂, shadowy path on the edge of coniferous forest, 17.08.2014 — 1 ♀♀, dry grass land in a forest stand of *Robinia pseudoscacia* and *Pinus* sp., 17.08.2014 — 1 ♀.

Bionomics. At least three generations develop from May to August. Common species in Northern East of Ukraine. Sometimes forms mass aggregations.

Distribution. Hungary (Papp and Černý, 2015). First record for Ukraine.

Notes. This species is very close to *Agromyza abdita*. Males are easily recognized by the terminalia shape (Papp and Černý, 2015) and shape and size of orbits, parafacia and cheek (lateral view), proportion of the eye and colour of wing (see below).

Spermathecae of both species from one side are very similar to each other and from other side have a distinct variability. Both spermathecae are strongly elongated, narrowing in basal half, widening in upper half with acute top. High but narrow basal collar is developed. Spermathecae and collars are brown, not hyaline and strongly sclerotized. Total shape of spermatheca may be straight or slightly curved. So, females can be distinguished from each other only by shape of head elements (see above) and colour of wing. *A. abdita* has whitish in basal zone wings, with semihyaline, pale brown stalks M₁, Cu and A. *A. seticercus* wings totally are darker, hyaline or slightly yellowish with brown stalks M₁, Cu and A. Stalks C, Sc, R₁, R₂₊₃, R₄₊₅ are dark brown in both species.

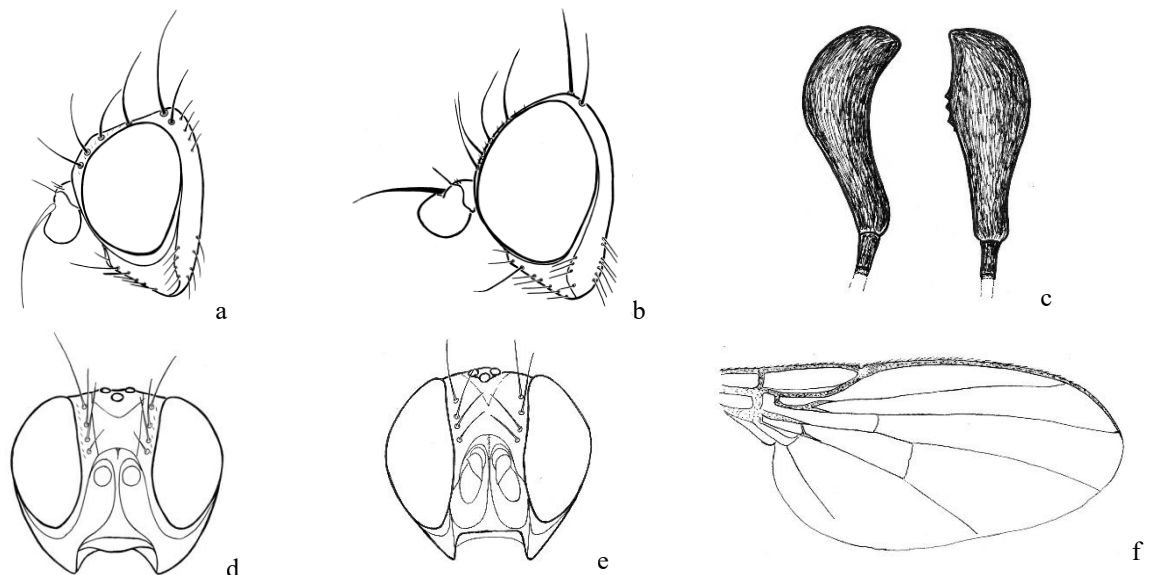


Fig. 4. *Agromyza abdita* (a, d, f) and *Agromyza seticercus* (b, c, e): a, b — male head (lateral view); c — spermathecae; d, e — male head (frontal view); f — wing.

***Agromyza viciae* Kaltenbach, 1974 (Fig. 5)**

Material. Kyiv, Botanical Garden, meadow, 21.05.2015 — 1 ♂.

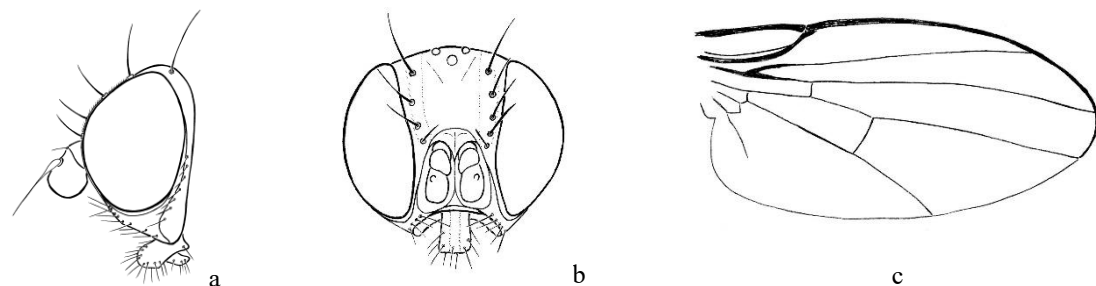


Fig. 5. *Agromyza viciae*: a — male head (lateral view); b — male head (frontal view); c — wing.

Bionomics. One generation was recorded in May.

Distribution. Slovakia, Switzerland, Germany, Hungary, Poland (Papp and Černý, 2015). First record for Ukraine.

Conclusion. Currently, 90 species of mining flies from the subfamily Agromyzinae are recorded in Ukraine. Thirteen species, such as *Melanagromyza verbasci* Spencer, 1957, *Ophiomyia galii* Hering, 1937, *O. hieracii* Spencer, 1964, *O. pannonica* Černý, 2015, *O. rostrata* (Hendel, 1920), *O. ungarensis* Černý, 2015, *Agromyza abdita* L. Papp, 2015, *A. flavipennis* Hendel, 1920, *A. lucida* Hendel, 1920, *A. marionae* Griffiths, 1963, *A. megalopsis* Hering, 1933, *A. seticercus* L. Papp, 2015, and *A. viciae* Kaltenbach, 1974, are recorded for Ukraine for the first time. All these species except *A. seticercus* are small in numbers and have patched distribution in the area of investigation. *A. seticercus* is common species, at least three generations develop during May–August.

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