Zoodiversity, **54**(6): 453–478, 2020
DOI 10.15407/zoo2020.06.453

UDC 595.773.4(477)

MINING FLIES OF THE SUBFAMILY AGROMYZINAE (DIPTERA, AGROMYZIDAE) OF UKRAINIAN TRANSCARPATHIA, WITH THE DESCRIPTION OF THREE NEW SPECIES

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urn:lsid:zoobank.org:pub:0E0F9DCA-BA5D-4C39-82C2-43DA35108D32

Mining Flies of the Subfamily Agromyzinae (Diptera, Agromyzidae) of Ukrainian Transcarpathia, with the Description of Three New Species. Guglya, Yu. — Based on the material recently collected in the Transcarpathian Ukraine, three previously unknown species of the mining flies are described: *Ophiomyia kireshiensis* sp. n., *O. mukhorytsa* sp. n. and *Agromyza paralucida* sp. n. Heads, wings, male and female terminalia are illustrated and DNA sequences of the new species are provided. In addition, four species previously unknown to occur in Ukraine were found and added on the list of Ukrainian Agromyzidae: *Melanagromyza nartshukae* Pakalniškis, 1996, *Ophiomyia pseudonasuta* Černý, 1994, *Agromyza anderssoni* Spencer, 1976 and *A. hendeli* Griffiths, 1963. All species go with short general data on their distribution in Ukraine and rare species are provided with detailed distribution information that was not listed earlier. The number of confirmed Ukrainian Agromyzinae species is now 105.
Key words: Diptera, Agromyzidae, *Melanagromyza, Ophiomyia, Agromyza*, Transcarpathia, DNA sequences, fauna, new species, females terminalia.

Introduction

Studies of mining flies of the subfamily Agromyzinae in Ukraine started in 2009, and has resulted in recording 98 species by far (Guglya, 2017).

The Transcarpathian Region is separated from most of Ukraine by the Carpathian Mountains and is therefore expected to have an agromyzid fauna rather distinctive from other parts of the country. Many species occurring there are believed to be in common with neighboring Central European counties as Hungary, Slovakia and Czech Republic, as this is the only Ukrainian region that belongs to the Central Europe according on its location and natural geographical demarcation (Kish et al., 2006). The agromyzid fauna of these countries are studied rather completely, with 371 species (including 93 agromyzinae species) known from Slovakia,

478 species (including 124 agromyzinae species) from Hungary and 490 species (including 121 agromyzinae species) from Czech Republic (Papp & Černý, 2015, 2019; Černý & Roháček, 2020). So, species subfamily Agromyzinae consist about one-quarter of the total number of Agromyzidae applied to Central European countries. Faunistic data from Romania, a third bordering country, remains very poorly studied. Studying of mining flies fauna in Ukraine is still far from complete, so at the moment it's impossible to predict total number of local species.

Material and methods

Material collecting. Unless otherwise stated, the material was collected by the author in 47 localities in Transcarpathia in 2016–2019 as listed below. Additional material was collected in 19 localities in Volyn, Lviv, Ivano-Frankivsk, Vinnytsa, Kyiv, Sumy, Kharkiv and Donetsk Regions of Ukraine and Belgorod Region of Russia in 2010–2019. Adults were collected mostly by a sweeping net. In 2010–2016 captured adults were extracted from the net with an aspirator, then killed with ethyl acetate, glued to paper points that pined and labeled individually. All specimens captured in 2017–2019 were preserved in 96 % ethanol alive and later after dissection and determination were removed in microvial with solution of glycerol and ethanol in proportion 1 : 1. Some specimens after determination stayed in 96 % ethanol for the further molecular studying (see below).

All specimens were dissected for determination. Dissected genitalia were macerated in potassium hydroxide solution, then washed in faint acetic acid solution and then distilled water, examined in glycerol, and stored in a microvial underneath with dry fly specimen or together with the fly specimen in fixing solution.

List of collecting sites in Transcarpathia mentioned in the text (numbers correspond to the map — fig. 1)

1. Antalovetska Polyana [Анталовецька поляна] — between Antalivtsy and Nevytske, 48°40' N 22°29' E, 936 m a. s. l.
2. Road to Antalovetska Polyana [шлях на Анталовецьку поляну] — between Antalovetska Polyana and Nevytske, 48°40' N 22°27' E, 670 m a. s. l.
3. Behendiatska Pastil [Бегендятська Пастіль] — 4 km SE Velykyi Bereznyi, 48°52' N 22°30' E, 250 m a. s. l.
4. Botanical Garden [Ботанічний сад] — Uzhhorod, Centre, 48°37' N 22°18' E.
5. Bozdozkyi Park [Боздоський парк] — Uzhhorod, 48°37' N 22°16' E.
6. 3 km N Chop [Чоп] — 48°27' N 22°12' E.
7. Chynadiyovo [Чинадійово] — 10 km NE Mukachevo, 48°30' N 22°51' E.
8. 2–4 km E Dilove [Ділове] — 15 km S Rakhiv, The Carpathian Biosphere Reserve, 48°55' N 24°14' E, 490–500 m a. s. l.
9. 1 km W Dubrynychi [Дубриничі] — 8 km N Perechyn, 48°48' N 22°28' E, 240 m a. s. l.
10. Horiany [Горяни] — E Uzhhorod, 48°36‘ N 22°20‘ E.
11. Husnyi [Гусний] — 29 km NEE Velykyi Bereznyi, 48°57‘ N 22°50‘ E, 630–700 m a. s. l.
12. Kalvaria [Кальварія] — Uzhhorod, City Centre, 48°37' N 22°17' E.
13. Kamianytsia [Кам'яниця] — 11 km NE Uzhhorod, 48°40' N 22°24' E, 138 m a. s. l.
14. Karpaty [Карпати] — 16 km NE Mukachevo, 48°31' N 22°52' E, 300 m a. s. l.
15. “Kosynska Hora” [«Косинська Гора»] — 15 km NW Berehovo, 48°15' N 22°29' E, 200 m a. s. l.
16. Krovysche Mt. [гора Кровище] — 1 km E Rakhiv Centre, 48°03' N 24°13' E, 830 m a. s. l.
17. Kuzyi [Кузій] — 23 km S Rakhiv, The Carpathian Biosphere Reserve, 47°56' N 24°07' E, 800 m a. s. l.
18. 1 km E Kvasy [Кваси] — 48°10' N 24°17' E, 800 m a. s. l.
19. Kireshy [Кіреші] — 4 km NE Khust, The Carpathian Biosphere Reserve, 48°11' N 23°21' E.
20. Near Luhy [Луги] — 19 km NWW Rakhiv. 48°03‘ N 24°29‘ E, 700 m a. s. l.
21. 10 km SE Luhy [Луги] — 48°02‘ N 24°32‘ E, 860 m a. s. l.
22. Mukachevo [Мукачево] — City Centre, 48°26' N 22°42' E.
23. 16 km NW Mukachevo [Мукачево] — 48°33' N 22°34' E.
24. “Muzhyivski Horby” [«Мужиївські Горби»] — between Muzhyevo and Bene, 48°10› N, 22°42› E, 136 m a. s. l
25. Nova Stuzhytsa [Нова Стужиця] — 19 km NNW Velykyi Bereznyi, Uzhanskyi National Natural Park, 49°02' N 22°34' E, 450 m a. s. l.
26. Okli Hed [Оклі Гедь] — 14 km SSE Vynogradiv, 48°00' N 23°03' E.
27. Perechyn [Перечин] — 48°44‘ N 22°27‘ E, 280 m a. s. l.
28. 3 km NW Perechyn [Перечин] — 48°45‘ N 22°26‘ E, 342 m a. s. l.
29. “Peremychka” [«Перемичка»] — The Carpathian Biosphere Reserve, 48°09› N 24°28› E, 1530 m a. s. l.
30. Pip-Ivan [Піп-Иван] — 17 km SSE Rakhiv Centre, Marmarosh, 47°56' N 24°19' E, 1400-1600 m a. s. l.
31. Plishka Mt. [гора Плішка] — 6 km NWW Perechyn, 48°45' N 22°23' E, 780 m a. s. l.
32. 1 km SEE Rakhiv Centre [Рахів] — 48°03' N 24°13' E, 600 m a. s. l.
33. 2 km SEE Rakhiv Centre [Рахів] — 48°03' N 24°13' E, 750 m a. s. l.
34. 4 km SSW Rakhiv Centre [Рахів] — The Carpathian Biosphere Reserve, 48°01' N 24°10' E.
35. 5 km SEE Rakhiv [Рахів] — 48°02' N 24°15' E, 900 m a. s. l.

36. 10 km N Shyrokyi Luh [Широкий Луг] — 32 km NNE Tyachiv, The Carpathian Biosphere Reserve, 48°17' N 23°43' E.
37. Shoimul Mt. [гора Шоймул] — 2 km SW Rakhiv Centre, The Carpathian Biosphere Reserve, 48°02' N 24°11' E, 580–700 m a. s. l.
38. Sylskyi Potik [Сільський потік] — 1 km SE Rakhiv centre, 48°02' N 24°13' E, 650 m a. s. l.
39. "Skalka" [«Скалка»] — 13 km NE Uzhhorod, 48°41‘ N 22°24‘ E.
40. Velyatyn [Велятин] — 5 km S Khust, 48°08' N 23°18' E.
41. between Sol and Kostryna [поміж Сол і Кострина] — 10 km NE Velykyi Bereznyi, 48°57' N 22°54' E.
42. 1.5 km E Velykyi Bereznyi [Великий Березний] — 48°52' N 22°29' E, 345 m a. s. l.
43. Vorochovo [Ворочово] — 15 km NW Uzhhorod, 48°42' N 22°26' E, 210 m a. s. l.
44. 2 km SWW Vorochovo [Ворочово] — beginning of the road to Plishka Mt., 48°42' N 25°25' E.
45. Vynogradiv [Виноградів] — 48°07' N 23°05' E.
46. The River Uzh Bank [берег річки Уж] — Uzhhorod, Centre, 48°37' N 22°16' E.
47. Zamkova Hill [гора Замкова] — Khust, 48°09' N 23°18' E.
48. Polonyna Pozhyzhevska [Полонина Пожижевська] — Ivano-Frankivsk Region, 48°09' N 24°32' E.

These localities are listed below in text in an abbreviated form with additional information about biotope, date, number and sex of specimens. Additional material from others regions of Ukraine listed completely in the text below.

DNA extraction, amplification, sequencing and analysis. Specimens were preserved for study in 96 % ethanol. Before extracting, terminalia were dissected and placed into a labelled microvial containing a solution of glycerol and ethanol (1 : 1). Each microvial was supplied with a voucher number. "Qiagen DNeasy Blood & tissue Kit" was used for extraction and purification following the protocol for Animal Tissue. Dried samples individually were incubated at 55 °C for 24 hours with added proteinase K. After that, specimens were separated from solutions containing DNA and transferred to respective plastic tubes with terminalia. Solutions containing DNA were purificated with buffers AW1, AW2 and AE.

PCR amplifications were carried out with a touchdown amplification program: initial denaturation at 94 °C for 2 min, followed by 34 cycles of 1 min at 94 °C, 30 s at 49 °C, 2 min at 72 °C, and a final extension step for 10 min at 72 °C. A combination of primers used for both PCR amplification and sequencing were as follows: C12416ra (5'GCTAATCATCTAAAAATTTTAATTCC3') and LCO 1490 (3'GGTCAACAAATCATAAAGAT ATTGG5').

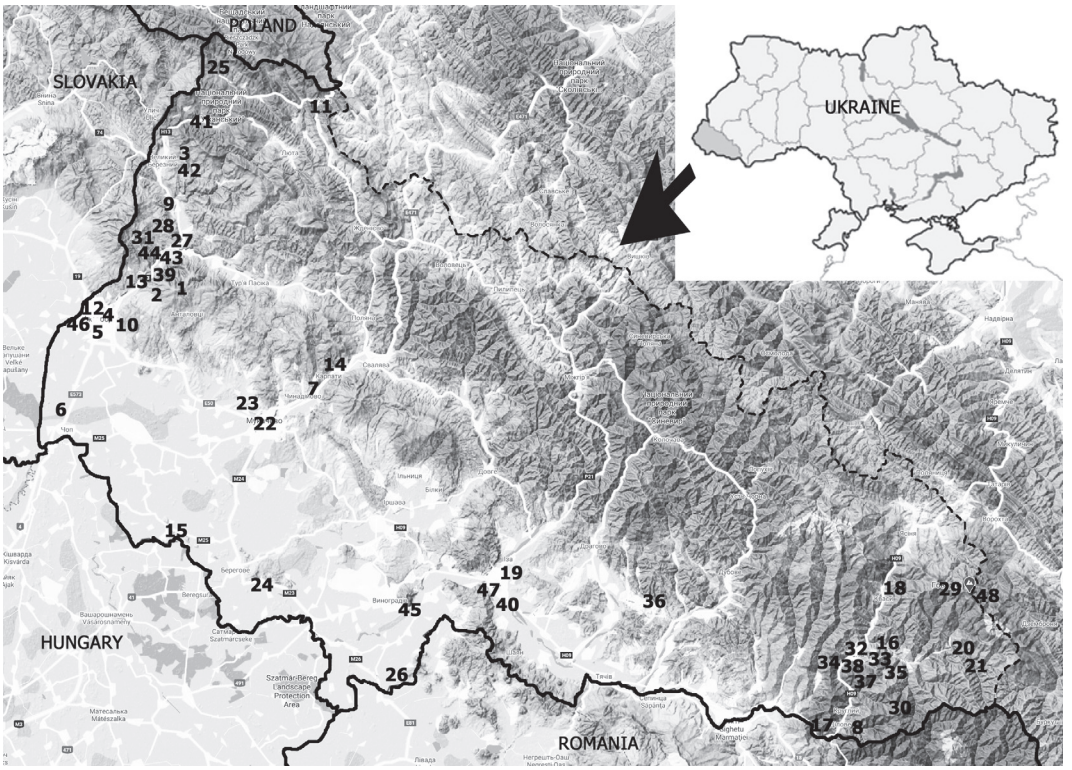


Fig. 1. Collecting sites in Transcarpathia of Ukraine.

Assembly of contigs for each specimen was accomplished using the software package Mega-X and CodonCode. All final sequences were uploaded to GenBank. Nucleotide sequences from fragments of mitochondrial cytochrome oxidase were obtained from six specimens of the three new species described in this paper. https://www.ncbi.nlm.nih.gov/genbank/;Accession#MW284899, MW284898, MW291113, MW291115, MW291116, MW291127.

All drawings are made by the author. The keys by Papp & Černý (2015), Spencer (1964, 1966, 1976), Pakalniškis (1996) and Guglya (2013, 2016 b) were used for species identification. External morphology and female terminalia terminology is given in accordance with Cumming & Wood (2017), terminilogy of male genitalia structures follows that in Frick (1952). All the material is deposited in the collection of the Museum of Nature of the V. N. Karazin Kharkiv National University (KUMN).

Results and discussion

In this paper, 56 species of the three genera are listed: 10 species of *Melanagromyza*, 25 species of *Ophiomyia* and 21 species of *Agromyza*. A total of 957 specimens (427 ♂ and 530 ♀) were identified by the author.

During 2017–2019 393 specimens of Agromyzidae (both males and females) were genetically sequenced with the aim of association males with females. Sequences of six type specimens are used in present paper (see below). Other data will be used in further work.

Host specialization is outside the scope of recent work, that's why only few important data provided further. Hosts are known for most of Transcarpathian agromyzinae (Benavent-Corai, et al., 2005).

The species recorded for the first time from Ukraine are marked by an asterisk (*).

Melanagromyza aenea (Meigen, 1830)

Material examined. 3 km N Chop, floodplain meadow on the bank of Latoritsa River, 4.05.2018, 2 ♂, 4 ♀; road to Antalovetska Polyana, 5.05.2018, 8 ♀; 2 km SWW Vorochovo, 6.05.2018, 1 ♂, 2 ♀; Plishka Mt., 6.05.2018, 1 ♂, 5 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018 and 14.06.2017, 3 ♀.

Distribution. Widespread in Europe, recorded from Austria, Belgium, British Isles, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Poland, Slovakia, Spain, Sweden, Switzerland (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Donetsk, Kharkiv, Kyiv, Poltava and Sumy Regions (Guglya, 2011, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Ukrainian collected material dates from 24 April to 14 June. It develops internally in stems *Urtica dioica* in one generation per year. This species is common in most of Ukraine but only in spring and early summer.

Melanagromyza aeneoventris (Fallén, 1823)

Material examined. 3 km N Chop, floodplain meadow on the bank of Latoritsa River, 4.05.2018, 3 ♂; Kamianytsia, 7.05.2018, 1 ♂.

Distribution. Austria, Belgium, British Isles, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, the Netherlands, Poland, Slovakia, Spain, Sweden, Switzerland, Yugoslavia, Turkey, Pakistan, Asian Russia, Japan, Taiwan (Papp & Černý, 2015). **In Ukraine.** Kharkiv and Sumy Regions (Guglya, 2011, 2012); Transcarpathia (**first record**).

Bionomics. This species was collected from 4 May to 11 August.

Melanagromyza astragali Spencer, 1976

Material examined. Road to Antalovetska Polyana, 5.05.2018, 4 ♂; Plishka Mt., 6.05.2018, 2 ♂, 2 ♀; Kamianytsia, 7.05.2018, 5 ♂; "Skalka", 7.05.2018, 1 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 1 ♂; ibid., 20.06.2018, 1 ♂, 1 ♀; Shoimul Mt., motley grass on a slope, 15.06.2018, 1 ♂, 1 ♀; Zamkova Hill, motley grass near the hospital, 23.07.2017, 1 ♂, 2 ♀; near Luhy, motley grass, 11.08.2019, 1 ♀.

Distribution. British Isles, Czech Republic, France, Germany, Hungary, Lithuania, Slovakia, Switzerland (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Kharkiv, Kyiv, Poltava and Sumy Regions (Guglya, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. This species is common in most of Ukraine. Ukrainian material dates from 4 May to 11 August and occurs on various localities, where its host plant *Astragalus spp*. (Fabaceae) grows, but one specimen was caught in a small desert where only *Genista tinctoria* (Fabaceae) was found.

Melanagromyza asymmetrica Guglya, 2016

Material examined. Plishka Mt., 6.05.2018, 1 ♂; Donetsk Region: near Krasnyi Lyman, Kryva Luka, 48°52' N 37°54' E, 2.06.2019, 1 ♂, 1 ♀.

Distribution. Ukraine: Chernivtsi, Kharkiv and Khmelnytskyi Regions (Guglya, 2016 b, 2017); Donetsk Region and Transcarpathia (**first record**).

Bionomics. Adults were collected from 6 May to 4 June. Host specialization unknown.

Melanagromyza cunctans (Meigen, 1830)

Material examined. "Skalka", 7.05.2018, 1 ♂; 16 km NW Mukachevo, motley grass, 15.05.2017, 1 ♂, leg. V. V. Roshko; ibid., 12.08.2016, 1 ♂, leg. V. V. Roshko; ibid., 1–4.09.2016, 3 ♂, 1 ♀, leg. V. V. Roshko; 4 km SSW Rakhiv Centre, motley grass on the slope, 14.06.2017, 3 ♂; ibid., 20.07.2017, 2 ♀; Shoimul Mt., motley grass on a slope, 15.06.2018, 3 ♂, 3 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 15.06.2017, 1 ♀; ibid., 20.06.2018, 1 ♀; 5 km SEE Rakhiv, motley grass on a slope near the forest edge, 17–18.06.2017, 4 ♂, 4 ♀; Kuzyi, clearing in a deciduous forest, 19.06.2018, 1 ♂, 1 ♀; Bozdozkyi Park, 22.06.2018, 2 ♂; the River Uzh Bank, 22.06.2018, 1 ♂; Vorochovo, meadow, 24.06.2018, 1 ♀; Kamianytsia, 26.06.2018 and 14.07.2017, 1 ♂, 2 ♀; Nova Stuzhytsa, 6.07.2019, 2 ♂, 1 ♀; "Skalka", 14–17.07.2017, 5 ♀; road to Antalovetska Polyana, ruderal motley grass near the road, 16.07.2017, 2 ♂, 3 ♂; 10 km N Shyrokyi Luh, wet motley grass, 18–19.07.2017, 1 ♂, 2 ♀; Krovysche Mt., meadow, 21.07.2017, 10 ♂, 9 ♂; 2 km SEE Rakhiv Centre, low grass meadow, 22.07.2017, 3 ♂, 3 ♀; Zamkova Hill, motley grass near the hospital, 23.07.2017, 9 ♂, 20 ♀; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 1 ♀; Kireshy, "Valley of Narcissi", low motley grass, 25.07.2017, 5 ♂, 13 ♀; 10 km SE Luhy, motley grass, 12.08.2019, 2 ♂; Chynadiyovo, wet clearing, 18.08.2017, 1 ♂; Karpaty, motley grass under oak trees, 18.08.2017, 1 ♂, 2 ♀; "Kosynska Hora", xerophytic clearing, 19.08.2017, 1 ♂, 1 ♀; "Muzhyivski Horby", foothills, wet motley grass on semi-shaded path, 19.08.2017, 2 ♂, 10 ♀; Okli Hed, deciduous forest with *Quercus* and *Caprinus,* 19.08.2017, 1 ♂; Mukachevo, Latorytsa River bank, 20.08.2017, 2 ♂, 1 ♀; Kalvaria, ruderal motley grass, 21.08.2017, 1 ♀; road to Antalovetska Polyana, motley grass on the opening, 22.08.2017, 1 ♂, 2 ♀; 1.5 km E Velykyi Bereznyi, xerophytic clearing, 23.08.2017, 1 ♂, 1 ♀; Behendiatska Pastil, wet meadow, 23.08.2017, 1 ♀; Perechyn, wet motley grass along country road, 24.08.2017, 2 ♂, 2 ♀; 3 km NW Perechyn, 24.08.2017, 1 ♀; Horiany, motley grass, 25.08.2017, 5 ♂; 1 km E Kvasy, motley grass on a slope, 27.08.2018, 1 ♀; the River Uzh Bank, 19.09.2017, 4 ♂.

Distribution. Known from the Palaearctic, Afrotropical and Oriental Regions (Papp & Černý, 2015). **In Ukraine.** Donetsk, Kharkiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Most material collected in Ukrainian is from Transcarpathia, where this species in 2017 was numerous and common. This contrasts collection events at the same time in 2018 and 2019, where it was not seen to be numerous. Ukrainian collected material dates from 7 May to 26 September.

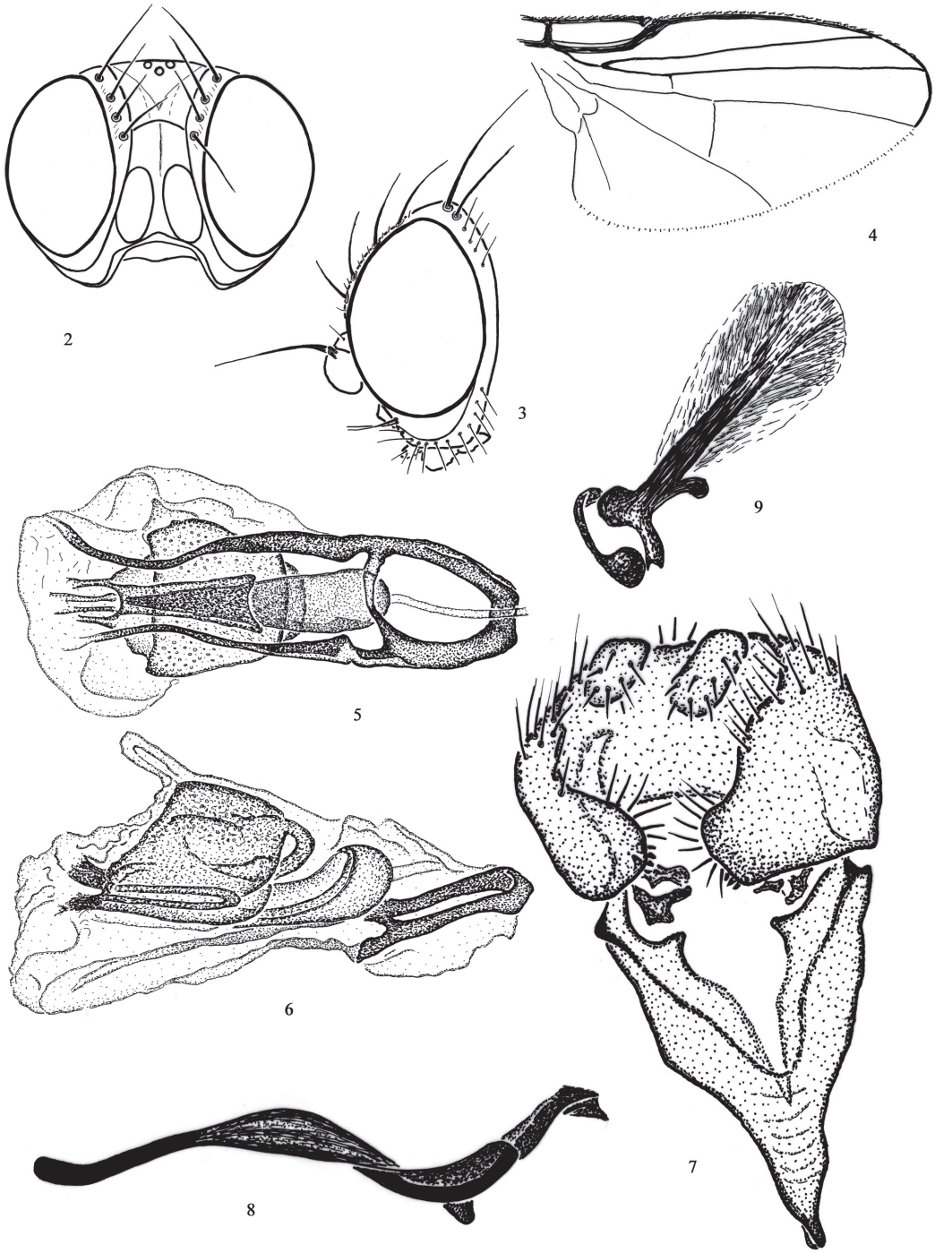
****Melanagromyza nartshukae*** Pakalniškis, 1996 (figs 2–9)

Material examined. Plishka Mt., 6.05.2018, 3 ♂.

Distribution. This species was previously known only from the original Lithuanian type series, consisting of five males caught from 28 May to 22 June (Pakalniškis, 1996). **In Ukraine.** Transcarpathia (**first record**).

Bionomics. Extremely rare species. In Transcarpathia, adults were collected by sweeping on a high motley grass clearing. Host specialization unknown.

Comments. The original description of this species included figures only of the phallus in lateral and ventral views. Illustrations of the head, and more complete illustrations of the male genitalia are provided here (figs 2–9).



Figs 2–9. *Melanagromyza nartshukae* Pakalniškis: 2, 3 — male head; 4 — wing; 5 — phallus (ventral view); 6 — phallus (lateral view); 7 — epandrium and hypandrium (ventral view); 8 — hypandrium (lateral view); 9 — ejaculatory apodeme.

Melanagromyza provecta (de Meijere, 1910)

Material examined. Bozdozkyi Park, 22.06.2018, 1 ♂; Velyatyn, wet shaded motley grass on the left River Tisa Bank, 24.07.2017, 1 ♀; Okli Hed, deciduous forest with *Quercus* and *Caprinus,* 19.08.2017, 1 ♂, 1 ♀; the River Uzh Bank, 19.09.2017, 1 ♂; Kyiv Region: Kyiv, Botanical Garden, 50°24' N 30°33' E, 24.07.2019, 1 ♂, 1 ♀; Vinnytsa Region: near Chechelnyk, Vyshenka Location, 48°10' N 29°20' E, 1.07.2019, 1 ♂.

Distribution. This species was described three times — as *Agromyza provecta* from Indonesia, as *Agromyza nigrisquama* from Formosa and as *Melanagromyza communis* from Belgian Congo and Mozambique and further was found in India and Ethiopia (Spencer, 1977), and Taiwan (Sasakawa, 1972). The nearest location to Ukraine where it was found in 2007 is Turkey (Çikman, Sasakawa, 2011). **In Ukraine.** Kharkiv, Luhansk and Kyiv Regions (Guglya, 2012, 2015, 2016 a); Transcarpathia and Vinnytsa Region (**first record**).

Bionomics. Collected material from Ukraine dates from 17 May to 19 September, so two or three generations develops per year. *M. provecta* in Ukraine is common but not numerous. The only host plant has been known for this species is *Abutilon indicum*.

Melanagromyza pubescens Hendel, 1923

Material examined. Husnyi, motley grass on a slope, 27.06.2018, 1 ♂.

Distribution. Palaearctic Region (Papp & Černý, 2015). **In Ukraine.** Kharkiv, Kyiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2015, 2016 a); Transcarpathia (**first record**).

Bionomics. In Ukraine, this species appears to be common during June–September, but does not occur in large numbers.

Melanagromyza submetallescens Spencer, 1966

Material examined. Kamianytsia, 7.05.2018, 1 ♂; "Skalka", 7.05.2018, 1 ♂; 1 km SEE Rakhiv Centre, 9.05.2018, 3 ♂; Kuzyi, clearing in a deciduous forest, 10.05.2018, 1 ♂; 5 km SEE Rakhiv, motley grass on a slope near the forest edge, 18.06.2017, 2 ♂.

Distribution. Chech Republic, Estonia, Finland, Germany, Hungary, Lithuania, Russia (Papp & Černý, 2015). **In Ukraine.** Donetsk and Kharkiv Regions (Guglya, 2012, 2017); Transcarpathia (**first record**).

Bionomics. Collected material dates from 25 April to 18 June.

Melanagromyza trapezoidea Guglya, 2016

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 1 ♂; Volyn Region: near Zhoriany, 51°22'N 23°58'E, 25.05.2019, 1 ♂; Vinnytsa Region: near Olhopil, Lizvora Location, 48°07' N 29°39' E, 10.05.2019 and 30.06.2019, 3 ♂; near Chechelnyk, Vyshenka Location, 48°10' N 29°20' E, 1.07.2019, 4 ♂; near Dokhno, opening in a deciduous forest, 48°16' N 29°18' E, 2.07.2019, 2 ♂; Kharkiv Region: near Petrivske, 49°10' N 36°58' E, 28.04.2019, 1 ♂.

Distribution. Ukraine: Kharkiv and Poltava Regions (Guglya, 2016 b, 2017); Transcarpathia, Vinnyts and Volyn Regions (**first record**).

Bionomics. Collected material dates from 28 April to 28 August.

Ophiomyia alliariae Hering, 1954

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 1 ♂, 1 ♀; Vorochovo, meadow, 24.06.2018, 1 ♂.

Distribution. Andorra, Austria, British Isles, Czech Republic, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Maltes Islands, Slovakia, Spain (Papp & Černý,

2015). **In Ukraine.** Kharkiv, Poltava and Sumy Regions (as *vitiosa* Guglya, 2011, 2012, 2013, 2015, 2017); Transcarpathia (**first record**).

Bionomics. Common in Ukraine. Three generations develop per year: numerous adults are caught on the late April–early May, then in second half of June and finally in first half of August.

Ophiomyia beckeri (Hendel, 1923)

Material examined. Krovysche Mt., meadow, 21.07.2017, 1 ♂.

Distribution. Palaearctic, Afrotropical and Oriental Regions (Papp & Černý, 2015). **In Ukraine.** Kharkiv Region (Guglya, 2011, 2012, 2014, 2015, 2017); Transcarpathia (**first record**).

Bionomics. Collected material dates from 28 April to 17 August. In Ukraine it is common but not numerous.

Ophiomyia collini Spencer, 1971

Material examined. 2–4 km E Dilove, motley grass along Potik Bilyi, 20.06.2018, 1 ♀; road to Antalovetska Polyana, 16.07.2017, 1 ♀; Chynadiyovo, wet clearing, 18.08.2017, 1 ♂; Okli Hed, deciduous forest with *Quercus* and *Caprinus,* 19.08.2017, 1 ♂; Antalovetska Polyana, 22.08.2017, 1 ♂, 1 ♀.

Distribution. Belgium, British Isles, Czhech Republic, France, Germany, Lithuania, Poland, Slowakia, Sweden, Switzerland (Papp & Černý, 2015). **In Ukraine.** Kharkiv, Luhansk, Poltava and Sumy Regions (Guglya, 2011, 2012, 2013, 2015, 2017); Transcarpathia (**first record**).

Bionomics. Collected material dates from 29 April to 26 August. In Ukraine it is common but not numerous.

Ophiomyia curvipalpis (Zetterstedt, 1848)

Material examined. Kamianytsia, 7.05.2018, 1 ♂; Vorochovo, meadow, 24.06.2018, 1 ♂; Zamkova Hill, motley grass near the hospital, 23.07.2017, 1 ♂; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 2 ♂; 16 km NW Mukachevo, motley grass, 1–3.09.2016, 4 ♂, leg. V. V. Roshko.

Distribution. Palaearctic Region (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Donetsk, Kharkiv, Kyiv, Mykolaiv, Poltava and Sumy Regions and Crimea (Guglya, 2011, 2012, 2013, 2015, 2016a, 2017); Transcarpathia (**first record**).

Bionomics. In Ukraine this species is common and numerous. Adults were collected from 2 May to 19 September evenly during the hot season.

Ophiomyia galii Hering, 1937

Material examined. 2 km SEE Rakhiv Centre, low grass meadow, 22.07.2017, 2 ♂; Velyatyn, ruderal motley grass, 24.07.2017, 1 ♂; Behendiatska Pastil, wet meadow, 23.08.2017, 1 ♂.

Distribution. Palaearctic Region (Papp & Černý, 2015). **In Ukraine.** Kharkiv and Poltava Regions (Guglya, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. In Ukraine this species is rare. Adults were collected from 8 June to 23 August.

Ophiomyia heracleivora Spencer, 1957

Material examined. Kamianytsia, 7.05.2018, 2 ♂, 1 ♀; "Skalka", 7.05.2018, 1 ♂; Kuzyi, clearing in a deciduous forest, 10.05.2018, 1 ♂; Nova Stuzhytsa, 6.07.2019, 1 ♂, 1 ♀; "Skalka", 14.07.2017, 1 ♂, 1 ♀; road to Antalovetska Polyana, 16.07.2017, 1 ♂; Zamkova Hill, motley grass near the hospital, 23.07.2017, 2 ♀;

Chynadiyovo, wet clearing, 18.08.2017, 4 ♀; Karpaty, motley grass under oak trees, 18.08.2017, 3 ♀; 1.5 km E Velykyi Bereznyi, xerophytic clearing, 23.08.2017, 3 ♀; Behendiatska Pastil, wet meadow, 23.08.2017, 2 ♂; 1 km W Dubrynychi, 24.08.2017, 2 ♀; 16 km NW Mukachevo, motley grass, 1.09.2016, 1 ♂, leg. V. V. Roshko.

Distribution. British Isles, Czech Republic, Estonia, France, Germany, Greece, Hungary, Lithuania, Poland, Portugal, Slovakia, Spain, Switzerland, Yugoslavia (Papp & Černý, 2015). **In Ukraine.** Kharkiv, Luhansk, Lviv and Sumy Regions (Guglya, 2011, 2012, 2013, 2015); Transcarpathia (**first record**).

Bionomics. Collected adults dates from 28 April to 1 September. Common in Ukraine.

Ophiomyia inaequabilis (Hendel, 1931)

Material examined. 1.5 km E Velykyi Bereznyi, xerophytic clearing, 23.08.2017, 1 ♂.

Distribution. Czech Republic, Greece, Spain, Switzerland, Turley (Papp & Černý, 2015). **In Ukraine.** Kharkiv, Kyiv, Poltava and Sumy Regions (Guglya, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Widespread in Ukraine. Adults were collected from 14 May to 23 August.

Ophiomyia kireshiensis Guglya, **sp. n.** (figs 10–20, 40)

urn:lsid:zoobank.org:act:52E95228-479C-42B3-9548-2B2FBFE0958D

Material examined. Type. Holotype ♂, "Ukraine, Transcarpathia, / near Khust, Kireshi / 48°11' N 23°21' E / 25.07.2017 / Guglya J. leg.","12.30, "Valley of / Narcissi" / low motley grass on the meadow".

Paratypes: 1 ♂, 1 ♀, "Ukraine, Transcarpathia, / near Khust, Kireshi / 48°11' N 23°21' E / 25.07.2017 / Guglya J. leg.","12.30, "Valley of / Narcissi" / low motley grass on the meadow"; 2 ♂, "Transcarpathia, near Luh / 800 m a. s. l., 14.00 / 10.05.2018, clearing / 47°56' N 24°07' E, / Guglya Yu. leg."; 1 ♂, "Ukraine, Transcarpathia / 1 km SE Rakhiv Centre / 48°02' N 24°13' E / 22.07.2017 / Guglya Yu. leg.", 11.30, 650 m a. s. l. / ruderal motley grass / along the road near / Silskyi Potik", grey label "VOUCHER / Sequenced / specimen / N J0095"; 1 ♀, "Ukraine, Transcarpathia / 2 km SW Rakhiv Centre / Shoimul Mt., 580 m a. s. l. / 15.06.2018, meadow on / a slope Guglya Yu.", grey label "VOUCHER / Sequenced / specimen / N J0271"; 1 ♂, "Ukraine, Vinnytsa / Region, 12.30, near / Chechelnyk, Vyshenka, / 48°10'45" N 29°20'00" E / 01.07.2019 Guglya Yu.".

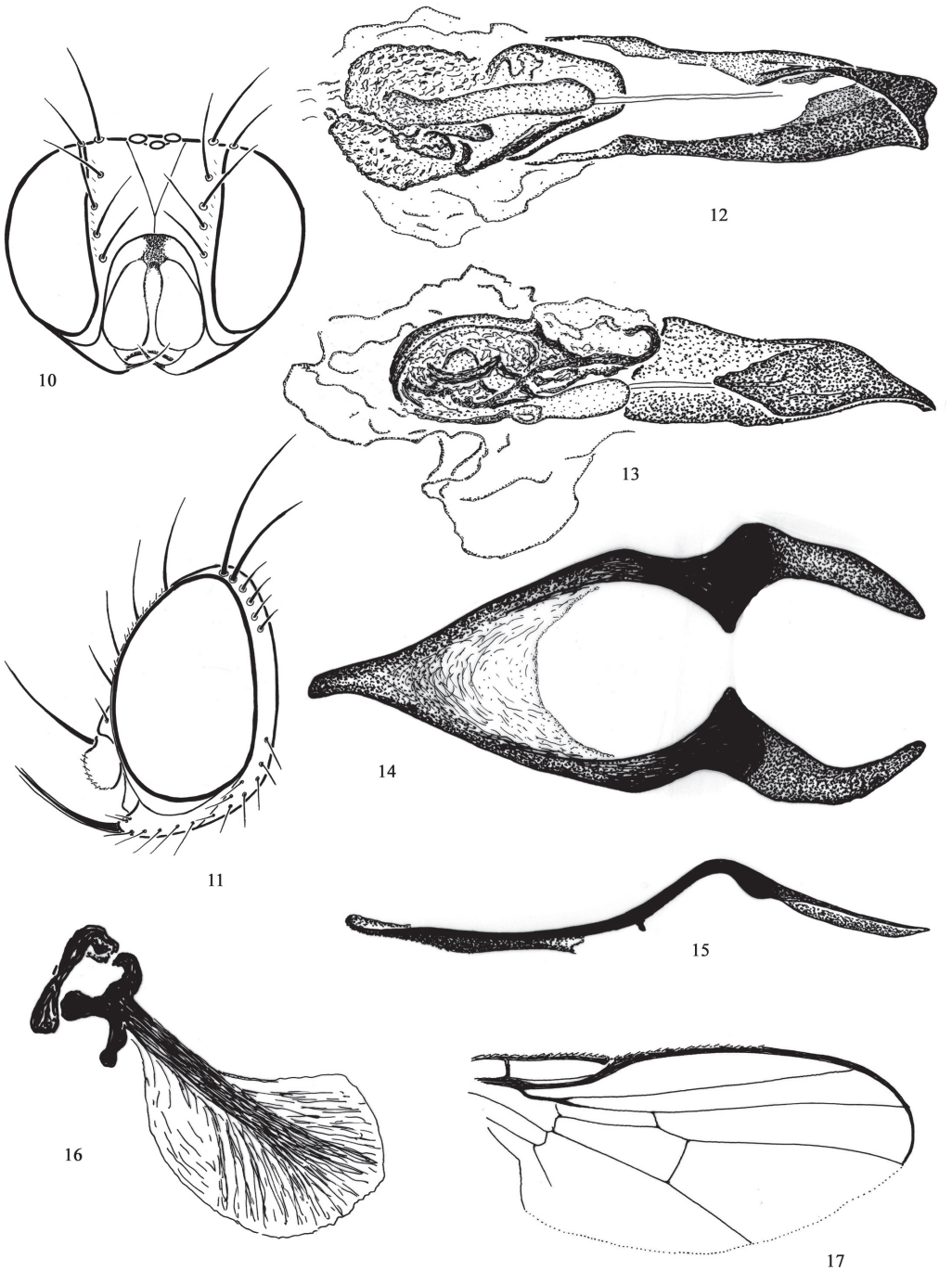
Description. Head (figs 10, 11, 18, 19). Orbit not projected above eye in profile, narrow, matt, without clear contour (anterior view); 2 orb s, 2 fr s; frorb sta sparse, reclinate; frons, orbits and ocellar triangle uniformly matt; frons with distinct dorsocentral suture; lunule rounded, with wide furrow from ptilinal fissure to facial carina; facial carina strongly projected above level of lunule, oval, in female 1.5× as wide as in male; ocellar triangle reaching to the level of upper fr s; maximum height of eye 7.5× maximum height of gena; vibrissal fasciculus long, gradually curved dorsally in male, long vibrissa presents in female.

Wing (fig. 17). Costa reaching M_1; last section of CuA_1 slightly shorter than penultimate; calypter grey, fringe and margin black. Length of wing 2.1 mm.

Mesonotum black, shining, with golden undertone; scutulum the same, but undertone stronger (dorsal view); 2 dc; acr in 8–9 rows at level of 2nd dc; halter and legs black.

Male genitalia (figs 12–16). Phallus typical for the genus, 0.35 mm length. Distiphallus massive orbed anteriorly and more narrow triangular posteriorly (ventral view), distiphallus posteriorly distinctly longer than mesophallus (lateral view). Mesophallus slightly curved basally and rather long, 0.7× as long as distiphallus. Basiphallus with narrow sclerites (arms), 1.4× as long as distiphallus (ventral view) (figs 12, 13). Ejaculatory apodeme moderately narrow (fig. 16). Hypandrium elongated with narrow broadened arms and hypandrial apodeme abducted and slightly curved laterally as in figs 14, 15.

Female terminalia (fig. 20). Both spermatheca identical, dark brown, wider than high, its width 1.5× as maximum height; internal duct invagination scarcely visible, reaching the top of spermathecae; blade of hypogynium and proctiger with cerci of the same length; blade of hypogynium rounded apically, denticles of outer margin small, scarcely visible, directed apically, inner margin and membrane without scales.



Figs 10–17. *Ophiomyia kireshiensis* sp. n., holotype: 10, 11 — male head; 12 — phallus (ventral view); 13 — phallus (lateral view); 14 — hypandrium (ventral view); 15 — hypandrium (lateral view); 16 — ejaculatory apodeme; 17 — wing.

Diagnosis. External morphology of the new species is similar to that of other *Ophiomyia* species with fasciculus that cannot be reliably identificated without male dissection. The male terminalia are distinct in that the shape of phallus resenbles that of *O. moravica* Černý, 1994, but in *O. moravica* there is a distinct gap between the mesophallus and the posterior half of the distiphallus (in lateral view), and the anterior part of the distiphallus 1.5× as long as the posterior.

The new species can be integrated to the Key of *Ophiomyia* of Ukraine (Guglya, 2014) as follows:

30a. Ocellar triangle large, reaching to the level of upper fr s; facial carina oval, without any invaginations or furrows (figs 10, 18). Distiphallus with massive orbed distal part and more narrow triangular proximal part (ventral view), that posteriorly distinctly longer that endophallus (lateral view) (figs 12, 13)..... .....*O. kireshiensis* sp. n.

— Ocellar triangle of medium size, reaching to the level of lower orb s; facial carina with invagination or furrow. Distiphallus of another shape 31

Distribution. Transcarpathia and Vinnytsa Region of Ukraine (fig. 40).

Etymology. The species is named after its type locality.

Ophiomyia labiatarum Hering, 1937

Material examined. 2–4 km E Dilove, motley grass along Potik Bilyi, 20.06.2018, 1 ♂; "Skalka", 14.07.2017, 1 ♂; 10 km N Shyrokyi Luh, Poliana Location, wet motley grass, 18.07.2017, 1 ♂; Krovysche Mt., meadow, 21.07.2017, 1 ♂; Sylskyi Potik, ruderal motley grass along the road, 22.07.2017, 1 ♂; 10 km SE Luhy, motley grass, 12.08.2019, 1 ♂.

Distribution. Holarctic Region (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Donetsk, Chernihiv, Kharkiv, Luhansk, Mykolaiv, Poltava and Sumy Regions (Guglya, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. This species is widespread and numerous in Ukraine. Collected adults date from 28 April to 17 August.

Ophiomyia longilingua (Hendel, 1920)

Material examined. Shoimul Mt., semi-shaded slope, 18.06.2018, 1 ♀; Donetsk Region: near Krasnyi Lyman, Kryva Luka, 48°52' N 37°54' E, 31.05.2019, 1 ♂; Volyn Region: Ostroviye, 51°33' N 23°47' E, 24.05.2019, 1 ♂.

Distribution. Austria, British Isles, Czech Republic, Finland, France, Germany, Greece, Hungary, Latvia, Lithuania, Norway, Sweden, Switzerland (Papp & Černý, 2015). **In Ukraine.** Kyiv Region (Guglya, 2016 a); Transcarpathia, Donetsk and Volyn Regions (**first record**).

Bionomics. Rare in Ukraine.

Ophiomyia melandricaulis Hering, 1943

Material examined. "Skalka", 7.05.2018, 1 ♂; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 1 ♀; 10 km N Shyrokyi Luh, wet motley grass, 19.07.2017, 1 ♀.

Distribution. Andorra, Austria, British Isles, Czech Republic, France, Germany, Hungary, Lithuania, Poland, Russia, Slovakia, Spain, Sweden (Papp & Černý, 2015). **In Ukraine.** Chernihiv, Kharkiv, Kyiv, Poltava and Sumy Regions (Guglya, 2012, 2013, 2015, 2017); Transcarpathia (**first record**).

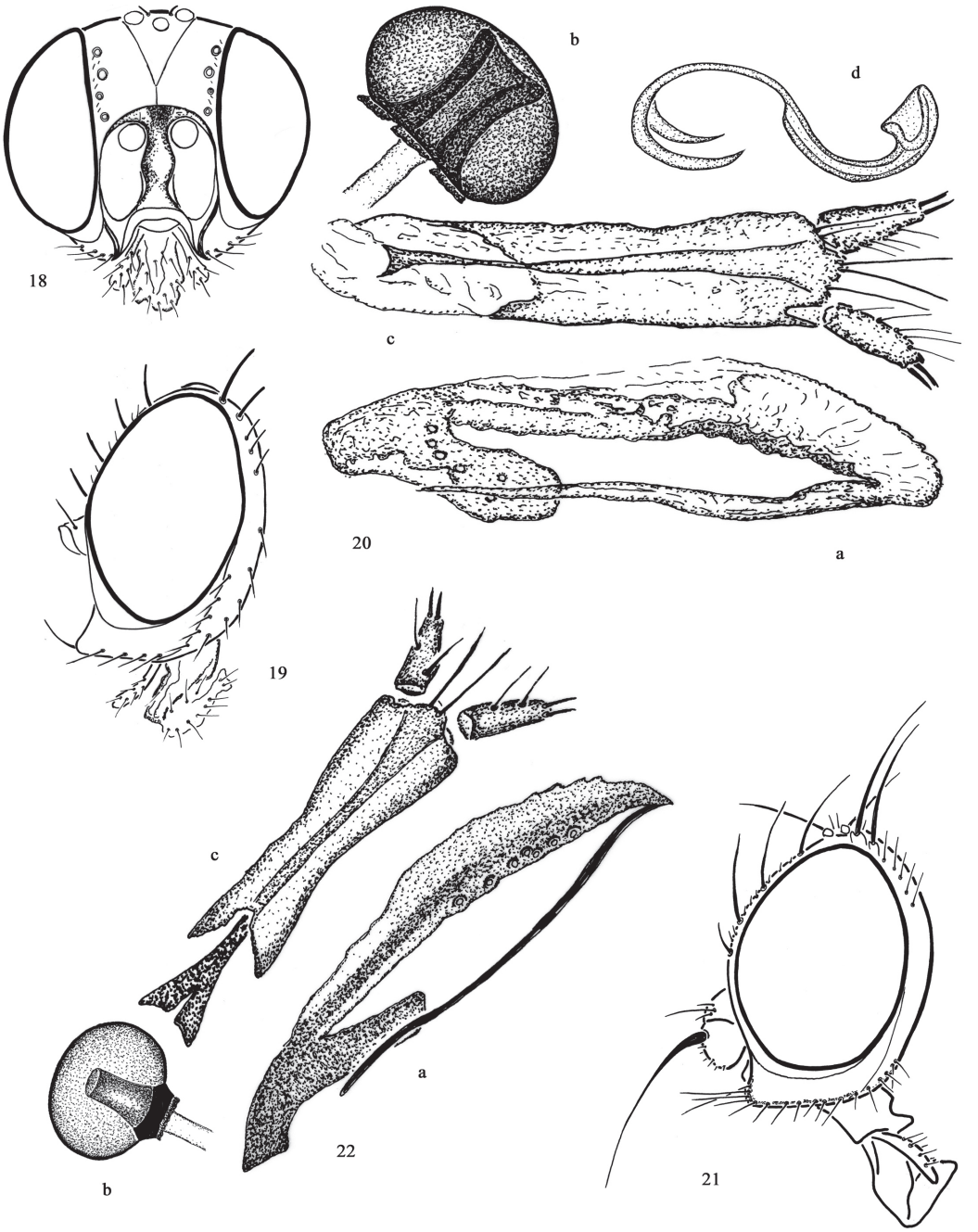
Bionomics. Common but not numerous in Ukraine. Collected material dates from 28 April to 23 August.

Ophiomyia melandryi de Meijere, 1924

Material examined. Plishka Mt., 6.05.2018, 2 ♂, 1 ♀.

Distribution. Palaearctic Region (Papp & Černý, 2015). **In Ukraine.** Kharkiv, Kyiv, Poltava and Sumy Regions from 6 May to 9 August (Guglya, 2011, 2013, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Common but not numerous.



Figs 18–22: 18–20. *Ophiomyia kireshiensis* sp. n., paratype: 18, 19 — female head; 20 — female terminalia proportionally: a — left blade of hypogynium, b — spermathecae; c — proctiger with cerci; d — ventral receptacle. 21–22. *Ophiomyia mukhorytsa* sp. n., paratype: 21 — female head; 22 — female terminalia proportionally: a — left blade of hypogynium, b — spermathecae, c — proctiger with cerci.

Ophiomyia moravica Černý, 1994

Material examined. 2–4 km E Dilove, motley grass along Potik Bilyi, 20.06.2018, 1 ♂.

Distribution. Czech Republic, Hungaria, Slovakia, Switzerland (Papp & Černý, 2015)**. In Ukraine.** Kharkiv and Kyiv Regions (Guglya, 2015, 2016 a); Transcarpathia (**first record**).

Bionomics. Adults were captured from 28 April to 20 June.

Ophiomyia mukhorytsa Guglya, **sp. n.** (figs 21–30)

urn:lsid:zoobank.org:act:47F81454-9961-438F-B3A7-FDC0C3943199

Material examined. Type. Holotype ♂, "Ukraine, Transcarpathia, near / Lukh, 800 m a. s. l., 14.00, / 10.05.2018, clearing / 47°56' N 24°07' E / Guglya Yu. leg.".

Paratypes: 2 ♂, 4 ♀, "Ukraine, Transcarpathia, near / Lukh, 800 m a. s. l., 14.00, / 10.05.2018, clearing / 47°56' N 24°07' E / Guglya Yu. leg."; 1 ♂, "Ukraine, Transcarpathia, near / Lukh, 800 m a. s. l., 14.00, / 10.05.2018, clearing / 47°56' N 24°07' E / Guglya Yu. leg.", grey label "VOUCHER / Sequenced / specimen / N J0280"; 1 ♀, "Ukraine, Transcarpathia, near / Lukh, 800 m a. s. l., 14.00, / 10.05.2018, clearing / 47°56' N 24°07' E / Guglya Yu. leg.", grey label "VOUCHER / Sequenced / specimen / N J0214"; 5 ♂, 2 ♀, "Ukraine, Ivano-Frankivsk / Reg., Chornohory Mt. / Massif, S slope of / Dantsizh Mt.", "12.06.2018, 18.30 / meadow on a / slope, 1372 m a. s. l., 48°09' N / 24°32' E, / Guglya Yu. leg."; 6 ♂, 13 ♀, "Ukraine, Ivano-Frankivsk / Reg., Chornohory Mt. / Massif, S slope of / Polonyna Pozhyzhevska.", "12.06.2018, 11.30 / motley grass along the / country road, / 48°09' N / 24°31' E, / Guglya Yu. leg."; 1 ♂, "Ukraine, Ivano-Frankivsk / Reg., 1366 m a. s. l., Polonyna / Pozhyzhevska, 13.06.2018, / "tsybulnyk", 48°09' N / 24°31' E, Guglya Yu."; 1 ♂, 2 ♀ "Ukraine, Ivano-Frankivsk / Region, 9.06.2018, / 48°09' N 24°31' E / 1400 m a. s. l. / Guglya Yu.", "18.00, Pozhyzhevska / Polonyna / SE slope along the path / to the Nesamovyte Lake"; 1 ♂, 2 ♀, "Ukraine, Ivano-Frankivsk / Reg., Chornohory Mt. / Massif, NE slope of / Polonyna Pozhyzhevska, / former alpenarium", "12.06.2018, 14.00, / clearing in the / coniferous forest, 1372 m a. s. l. / 48°09' N 24°32' E / Guglya Yu.".

Description. Head (figs 21, 22, 24). Orbit slightly projected above eye in profile, narrow, slightly shining, with shining areolae of setae, without clear contour (anterior view); 2 orb s, 2 fr s; frorb sta sparse, reclinate; frons matt, without dorsocentral suture; lunule low and wide, flattened dorsally, with wide furrow from ptilinal fissure to facial carina; facial carina bulbous, strongly projected above level of lunule, with deep but narrow furrow; ocellar triangle reaching to the level of lower orb s; maximum height of eye 4.6× maximum height of gena; vibrissal fasciculus strong, long, slightly curved dorsally in male; long vibrissa presents in female.

Wing (fig 25) greyish. Costa reaching M_1; last section of CuA_1 slightly shorter than penultimate; calypter brown, fringe and margin black. Wing length 2.1 mm.

Mesonotum black, shining; scutellum less shining (dorsal view); 2 dc; acr in 6–8 rows at level of 2nd dc; halter and legs black.

Male genitalia (figs 26–30). Phallus typical for the genus, 0.34 mm length. Distiphallus 1.13× as long as basiphallus. Distiphallus subovate (ventral view), gradualy narrowing posteriorly and sharply narrowing and curved to left anteriorly (ventral view). Mesophallus thickened, shifted to the left (ventral view). Basiphallus wide, massive, with sclerites weakly sclerotized. Hypandrium V-shaped, with narrow slightly broadened arms; hypandrial apodeme short, narrow. Ejaculatory apodeme narrow, tapered basally, with darker apical half; its length 2.3× width.

Female terminalia (fig. 22). Both spermathecae identical, dark brown, its width 1.45× maximum height; basal collar strongly sclerotized, ring-shaped, widening to base of spermatheca; internal duct invagination reaching 0.65 height of spermatheca. Blade of hypogynium 1.15× as long as proctiger with cerci. Blade of hypogynium acute apically, denticles on outer margin small, sparce and blunt, scarcely visible, directed apically, inner margin and membrane without scales.

Diagnosis. Uniformly black species with greyish wings and brown calypter. External morphology and shape of the male genitalia are most similar to those of *Ophiomyia campanularum* Stary, 1930, but in the new species, the facial bulb wider and flat, without a furrow, the distiphallus is not narrowed and curved proximally, and the basiphallus is slightly longer than the distiphallus.

The new species can be integrated to the Key of *Ophiomyia* of Ukraine (Guglya, 2014) as follows:

34. Lunule slightly rounded; vibrissal fasciculus uniformly dark. Distiphallus narrowing anteriorly and posteriorly. Mesophallus posteriorly not reaching sclerites of basiphallus..... 35
— Upper margin of lunule flat and tapered in the centre; vibrissal fasciculus straight, directed slightly upwards, white at the end (see Guglya, 2013: figs 33, 34). Distiphallus narrow, rectangular anteriorly and triangular posteriorly, mesophallus posteriorly reaching sclerites of basiphallus (ventral view). Basiphallus 1.28× as long as distiphallus (see Guglya, 2013: figs 35, 36) dark .... *O. fasciculusalba* Guglya, 2013
35. Facial carina bulbous, strongly projected above level of lunule, with deep but narrow furrow, that spread on lunula and expands towards ptilinal fissure (fig. 21) Distiphallus with strictly narrowing and curved distal part and oval-triangular proximal part (ventral view), that posteriorly as long as endophallus (lateral view) (figs 26, 27) ..... *O. mukhorytsa* sp. n.
— Facial carina flattened, without any furrow (see Guglya, 2013: figs 86, 87). Distiphallus with small oval distal part and elongated triangular proximal part (ventral view), that posteriorly distinctly longer that endophallus (lateral view) (see Guglya, 2013: figs 88, 89)..... *O. senecionina* Hering, 1944

Distribution. Transcarpathia and Ivano-Frankivsk Region of Ukraine.

Etymology. "Mukhorytsa" — local trivial name of all tiny black flies in Rakhiv district of Transcarpathia, where the new species was firstly collected.

Ophiomyia nasuta (Melander, 1813)

Material examined. 2 km SWW Vorochovo, 6.05.2018, 1 ♂, 2 ♀; Kamianytsia, 7.05.2018, 11 ♂, 2 ♀; "Skalka", 7.05.2018 and 14.07.2017, 1 ♂, 1 ♀; 1 km SEE Rakhiv Centre, 9.05.2018, 1 ♂; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018 and 14.06.2017, 1 ♂, 4 ♀; 4 km SSW Rakhiv Centre, wet motley grass on the slope, 11.05.2018, 2 ♂, 1 ♀; Bozdozkyi Park, 22.06.2018, 4 ♂, 1 ♀; Nova Stuzhytsa, 6.07.2019, 1 ♂; road to Antalovetska Polyana, 16.07.2017, 2 ♂, 1 ♀; 2 km SEE Rakhiv Centre, low grass meadow, 22.07.2017, 3 ♂, 1 ♀; Kireshy, "Valley of Narcissi", low motley grass, 25.07.2017, 2 ♂; Karpaty, motley grass under oak trees, 18.08.2017, 2 ♂, 1 ♀; Vynogradiv, floodplain on the River Tisa Bank, 19.08.2017, 1 ♂; Mukachevo, Latorytsa River bank, 20.08.2017, 2 ♀; the River Uzh Bank, 19.09.2017, 2 ♂, 5 ♀.

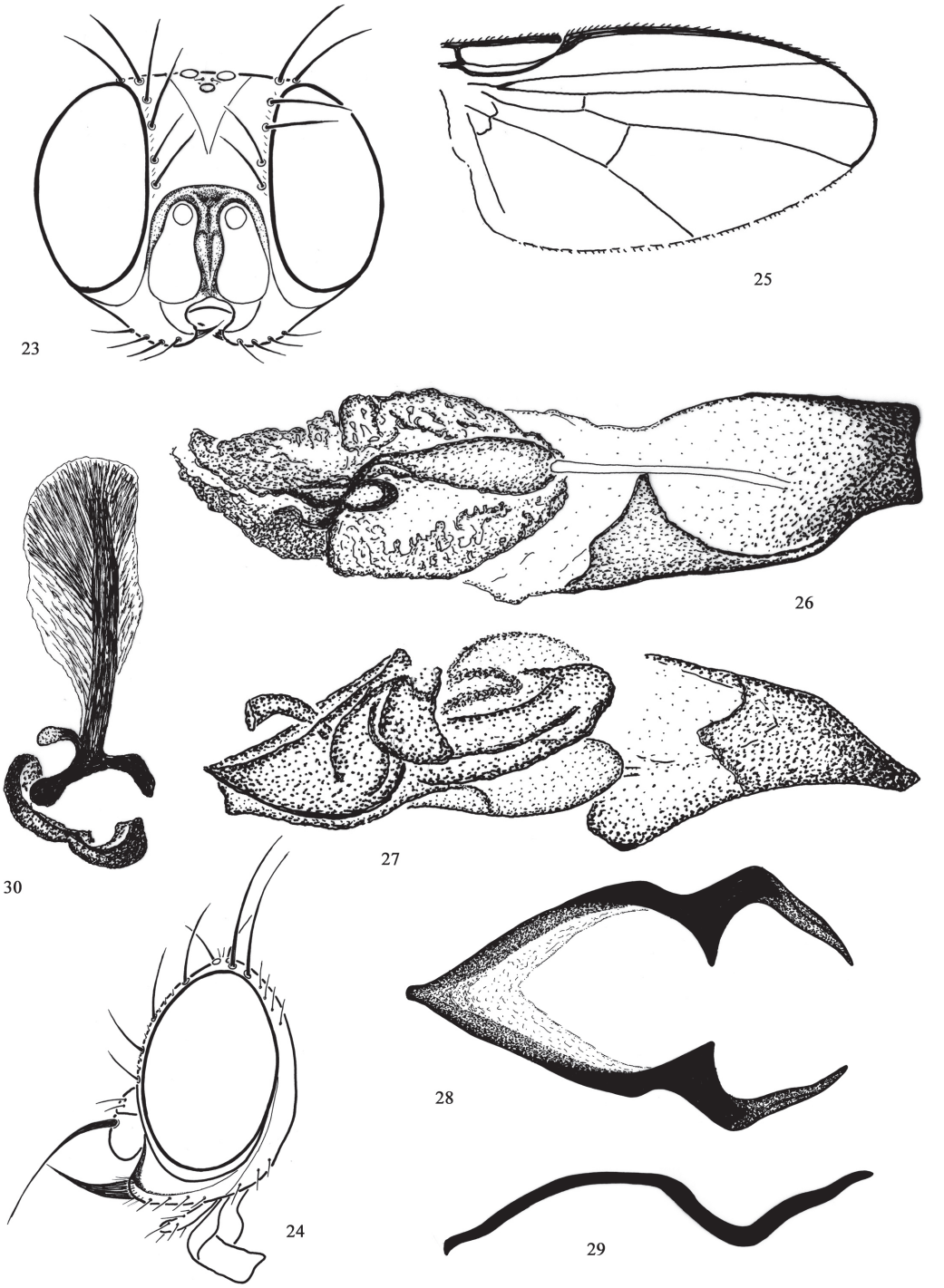
Distribution. Holarctic Region (Papp & Černý, 2015). **In Ukraine.** Kharkiv, Khmelnytskyi, Lviv, Poltava, Sumy and Volyn Regions (Guglya, 2012, 2013, 2014, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Common and numerous in Ukraine. Adults were caught from 3 May to 19 September evenly during hot seasons. Up to four generations develope per year.

Ophiomyia orbiculata (Hendel, 1931)

Material examined. Plishka Mt., 6.05.2018, 1 ♀; Kamianytsia, 7.05.2018, 1 ♂; "Skalka", 7.05.2018, 1 ♀; ibid., 14 and 17.07.2017, 3 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 2 ♂; Shoimul Mt., semi-shaded slope, 15.06.2018, 1 ♂, 5 ♀; 5 km SEE Rakhiv, motley grass on a slope, 17–18.06.2017, 2 ♂, 3 ♀; Bozdozkyi Park, 22.06.2018, 2 ♀; Kamianytsia, 26.06.2018, 1 ♂; Husnyi, motley grass on a slope, 27.06.2018, 1 ♀; Nova Stuzhytsa, 6.07.2019, 1 ♀; road to Antalovetska Polyana, 16.07.2017, 1 ♂; 10 km N Shyrokyi Luh, wet motley grass, 18–19.07.2017, 4 ♀; Krovysche Mt., meadow, 21.07.2017, 1 ♀; 2 km SEE Rakhiv Centre, low grass meadow, 22.07.2017, 1 ♂, 3 ♀; Zamkova Hill, motley grass near the hospital, 23.07.2017, 3 ♀; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 6 ♀; Kireshy, "Valley of Narcissi", low motley grass, 25.07.2017, 1 ♂, 3 ♀; Karpaty, motley grass under oak trees, 18.08.2017, 2 ♀; "Muzhyivski Horby", foothills, wet motley grass on semi-shaded path, 19.08.2017, 1 ♂; Kalvaria, ruderal motley grass, 21.08.2017, 1 ♂; 1.5 km E Velykyi Bereznyi, xerophytic clearing, 23.08.2017, 1 ♀; Perechyn, wet motley grass along country road, 24.08.2017, 1 ♂, 1 ♀; 1 km W Dubrynychi, 24.08.2017, 1 ♀.

Distribution. Palaearctic region (Papp & Černý, 2015). **In Ukraine.** Chernihiv, Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kyiv, Mykolaiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2014, 2015, 2016 a, 2017); Transcarpathia (**first record**).



Figs 23–30. *Ophiomyia mukhorytsa* sp. n., holotype: 23, 24 — male head; paratypes: 25 — wing; 26 — phallus (ventral view); 27 — phallus (lateral view); 28 — hypandrium (ventral view); 29 — hypandrium (lateral view); 30 — ejaculatory apodeme.

Bionomics. Common and numerous in Ukraine. Collected material dates from 3 May to 28 August.

Ophiomyia pannonica Černý in Papp & Černý, 2015

Material examined. "Skalka", 7.05.2018, 1 ♂; 10 km N Shyrokyi Luh, clearing on the River Luzhanka Bank, 19.07.2017, 1 ♂; Krovysche Mt., meadow, 21.07.2017, 1 ♂; Karpaty, motley grass under oak trees, 18.08.2017, 3 ♂; road to Antalovetska Polyana, wet motley grass under *Picea*, 22.08.2017, 1 ♂.

Distribution. Hungary and Slovakia (Papp & Černý, 2015). **In Ukraine.** Kharkiv and Kyiv Regions (Guglya, 2016 a); Transcarpathia (**first record**).

Bionomics. Rare in Ukraine. Collected adults date from 7 May to 22 August. Host specialization unknown.

Ophiomyia pinguis (Fallén, 1820)

Material examined. Kamianytsia, 7.05.2018, 9 ♂, 3 ♀; "Skalka", 7.05.2018, 1 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 2 ♂; ibid, 14.06.2017, 1 ♀; 4 km SSW Rakhiv Centre, wet motley grass on the slope, 11.05.2018, 1 ♀; ibid., 14.06.2017, 1 ♀; Shoimul Mt., 18.06.2018, 1 ♂; Bozdozkyi Park, 22.06.2018, 1 ♂, 2 ♀; the River Uzh Bank, 22.06.2018, 1 ♂; Vorochovo, meadow, 24.06.2018, 1 ♂, 1 ♀; Kamianytsia, 26.06.2018, 1 ♂; road to Antalovetska Polyana, 16.07.2017, 2 ♂, 4 ♀; Zamkova Hill, motley grass near the hospital, 23.07.2017, 3 ♀; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 2 ♀; Kireshy, "Valley of Narcissi", low motley grass, 25.07.2017, 3 ♂, 2 ♀; "Muzhyivski Horby", foothills, wet motley grass on semi-shaded path, 19.08.2017, 1 ♀; Vynogradiv, floodplain on the River Tisa Bank, 19.08.2017, 1 ♂, 2 ♀; Mukachevo, Latorytsa River bank, 20.08.2017, 2 ♂, 2 ♀; Kalvaria, ruderal motley grass, 21.08.2017, 3 ♂, 1 ♀; Perechyn, wet motley grass along country road, 24.08.2017, 3 ♂, 4 ♀; 1 km W Dubrynychi, 24.08.2017, 5 ♀; 3 km NW Perechyn, 24.08.2017, 2 ♂, 1 ♀; Horiany, motley grass, 25.08.2017, 1 ♂, 1 ♀; 16 km NW Mukachevo, motley grass, 1.09.2016, 2 ♀, leg. V. V. Roshko.

Distribution. Palaearctic species (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Donetsk, Kharkiv, Khmelnytskyi, Luhansk, Poltava and Sumy Regions (Guglya, 2012, 2014, 2015, 2017); Transcarpathia (**first record**).

Bionomics. Common and numerous in Ukraine. Collected material dates from 4 May to 19 September.Three generations develop per year.

****Ophiomyia pseudonasuta*** Černý, 1994

Material examined. 2 km SWW Vorochovo, beginning of the road to Plishka Mt., 6.05.2018, 1 ♂, 1 ♀; Kamianytsia, 7.05.2018, 3 ♂, 3 ♀; "Skalka", 7.05.2018, 1 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 5 ♂, 7 ♀; 4 km SSW Rakhiv Centre, wet motley grass on the slope, 11.05.2018, 1 ♂, 1 ♀; Kamianytsia, 26.06.2018, 1 ♂; road to Antalovetska Polyana, 16.07.2017, 1 ♀; 2 km SEE Rakhiv Centre, low grass meadow, 22.07.2017, 1 ♂; Zamkova Hill, motley grass near the hospital, 23.07.2017, 4 ♀; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 2 ♀; Kireshy, "Valley of Narcissi", low motley grass, 25.07.2017, 1 ♂, 2 ♀; Chynadiyovo, wet clearing, 18.08.2017, 1 ♀; Mukachevo, Latorytsa River bank, 20.08.2017, 1 ♂, 1 ♀; the River Uzh Bank, 19.09.2017, 3 ♂, 5 ♀; Donetsk Region, Kryva Luka, 13 km SEE Lyman, 48°52' N 37°54' E, 02.06.2019, 1 ♂, 1 ♀; Vinnytsa Region: Chechelnyk, 48°12' N 29°20' E, 7–11.05.2019, 4 ♂, 7 ♀; ibid., 29.06.2019, 3 ♂, 4 ♀; near Kurenivka, 48°15'38" N 29°11'12" E, 09.05.2019, 1 ♂, 5 ♀; near Demivka, 48°10'51" N 29°34'26" E, 10.05.2019, 1 ♂, 2 ♀; Volyn Region: between Svytiaz and Podmanovo, motley grass, 52°34' N 23°54' E, 23–25.05.2019, 1 ♂, 7 ♀; near Pulemets, 51°33'10" N 23°43'43" E, 24.05.2019, 3 ♂; Ostrovyie, The Shatsk National Nature Park, 51°33' N 23°47' E, 25.05.2019, 8 ♂, 3 ♀; near Lutsk, Dachne, 50°48' N 25°22' E, 7.06.2019, 1 ♂, 1 ♀.

Distribution. Czeck Republic, Slovakia (Papp & Černý, 2015). **In Ukraine.** Donetsk, Vinnytsa, Volyn Regions and Transcarpathia (**first record**).

Bionomics. Common but not numerous in Ukraine. Host is still unknown. Normally habits in the same localities and at the same time with *O. nasuta* and *O. pinguis* that develop on Compositeae: *Taraxacum officinale* and *Cicorium, Leontodon, Lactuca* and *Taraxacum* retrospectively.

Ophiomyia pulicaria (Meigen, 1830)

Material examined. Botanical Garden, 4.07.2019, 1 ♂.

Distribution. Palaearctic and Afrotropical Regions (Papp & Černý, 2015). **In Ukraine.** Donetsk, Kharkiv and Sumy Regions (Guglya, 2011, 2012, 2014); Transcarpathia (**first record**).

Bionomics. Common but not numerous in Ukraine.

Ophiomyia ranunculicaulis Hering, 1949

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 1 ♂, 3 ♀; Kamianytsia, 7.05.2018, 3 ♂, 2 ♀; "Skalka", 7.05.2018 and 14–15.06.2017, 4 ♂, 3 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 14–15.06.2017, 1 ♂, 2 ♀; Shoimul Mt., motley grass on a slope, 15, 18.06.2018, 7 ♂, 7 ♀; 5 km SEE Rakhiv, motley grass on a slope near the forest edge, 17–18.06.2017, 2 ♂, 2 ♀; Kuzyi, motley grass along the Potik Kuzyi, 500 m a. s. l., 19.06.2018, 1 ♀; Vorochovo, meadow, 24.06.2018, 1 ♂; Kamianytsia, 26.06.2018, 1 ♀; Nova Stuzhytsa, 6.07.2019, 1 ♀.

Distribution. Belarus, British Isles, Czech Republic, France, Germany, Hungary, Latvia, Lithuania, Poland, Slovakia, Sweden (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kyiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2013, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Common and numerous in Ukraine. Collected material dates from 2 May to 14 August.

Ophiomyia senecionina Hering, 1944

Material examined. 3 km N Chop, floodplain meadow, Latorytsa River bank, 4.05.2018, 1 ♀; Okli Hed, 19.08.2017, 1 ♀; Horiany, motley grass, 25.08.2017, 1 ♀.

Distribution. British Isles, France, Germany, Slovakia (Papp & Černý, 2015). **In Ukraine.** Sumy Region (Guglya, 2012, 2013); Transcarpathia (**first record**).

Bionomics. Rare in Ukraine.

Ophiomyia vanyushai Guglya, 2014

Material examined. Near Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 1 ♀.

Distribution. **S**witzerland (Černý & Bächli, 2018). **In Ukraine.** Kharkiv Region (Guglya, 2014); Transcarpathia (**first record**).

Bionomics. Rare in Ukraine. Host specialization unknown.

Ophiomyia verbasci Černý, 1991

Material examined. Botanical Garden, 4.07.2019, 1 ♂; "Skalka", 17.07.2017, 1 ♂; 10 km N Shyrokyi Luh, Poliana Location, wet motley grass, 18.07.2017, 1 ♂; Sylskyi Potik, ruderal motley grass along the road, 22.07.2017, 1 ♂.

Distribution. Czech Republic (Papp & Černý, 2015). **In Ukraine.** Kyiv Region (Guglya, 2017); Transcarpathia (**first record**).

Bionomics. Rare in Ukraine. All specimens were caught during July.

Ophiomyia vimmeri Černý, 1994

Material examined. Kamianytsia, 7.05.2018, 1 ♂, 1 ♀; 5 km SEE Rakhiv, motley grass on a slope near the forest edge, 18.06.2017, 1 ♂; 10 km N Shyrokyi Luh, Poliana Location, wet motley grass, 18.07.2017, 1 ♂; Krovysche Mt., meadow, 21.07.2017, 1 ♂; Kireshy, "Valley of Narcissi", low motley grass, 25.07.2017, 1 ♂; 1.5 km E Velykyi Bereznyi, xerophytic clearing, 23.08.2017, 1 ♂; the River Uzh Bank, 19.09.2017, 1 ♂.

Distribution. Andorra, Czech Republic, France, Greece, Italy, Morocco, Slovakia, Spain, Switzerland (Papp & Černý, 2015). **In Ukraine.** Donetsk, Kharkiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2014, 2015, 2017); Transcarpathia (**first record**).

Bionomics. Common but not numerous in Ukraine. Collected specimens were caught from 7 May to 19 September. Host specialization unknown.

Agromyza albipennis Meigen, 1830

Material examined. Bozdozkyi Park, 22.06.2018, 1 ♀; road to Antalovetska Polyana, ruderal motley grass near the road, 16.07.2017, 1 ♂, 1 ♀; 10 km N Shyrokyi Luh, low motley grass on the River Luzhanka Bank, 19.07.2017, 2 ♂, 1 ♀; 4 km SSW Rakhiv Centre, wet motley grass on the slope, 20.07.2017, 1 ♀; Karpaty, motley grass under oak trees, 18.08.2017, 1 ♀; Kalvaria, ruderal motley grass, 21.08.2017, 1 ♂; 1 km W Dubrynychi, 24.08.2017, 1 ♀.

Distribution. Widespread in the Palaearctic and Nearctic Regions (Papp & Černý, 2015). **In Ukraine.** Kharkiv Region (Guglya, 2012); Transcarpathia (**first record**).

Bionomics. Common in Transcarpathia, but not so in the rest of Ukraine. Adults were caught from 29 April to 24 August.

****Agromyza anderssoni*** Spencer, 1976

Material examined. 4 km SSW Rakhiv Centre, wet motley grass on the slope, 14.06.2017, 1 ♂; Kuzyi, clearing in a deciduous forest, 19.06.2018, 1 ♀; Botanical Garden, 4.07.2019, 2 ♀; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 2 ♀; Kalvaria, ruderal motley grass, 21.08.2017, 1 ♀; Kyiv Region, Kyiv, Syretskyi Park, 50°28'04" N 30°26'23" E, 18.06.2015, 1 ♀; Volyn Region, near Lutsk, Dachne, 50°48' N 25°22' E, 07.06.2019, 3 ♀.

Distribution. Czech Republic, Estonia, Slovakia, Sweden (Papp & Černý, 2015). **In Ukraine.** Transcarpathia, Kyiv and Volyn Regions (**first record**).

Bionomics. This very rare European species in Ukraine is rare too. Adults were collected during June–August.

Agromyza bicaudata (Hendel, 1920)

Material examined. 3 km N Chop, floodplain meadow, Latorytsa River bank, 4.05.2018, 1 ♀.

Distribution. From Great Britain to Finland, Lithuania and Hungary (Papp & Černý, 2015). **In Ukraine.** Donetsk, Kharkiv, Sumy Regions (Guglya, 2011, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Common and sometimes numerous. One generation develops in spring. All specimens were captured from 21 April to 26 May.

Agromyza bromi Spencer, 1966

Material examined. Kalvaria, ruderal motley grass, 21.08.2017, 1 ♂; 1 km W Dubrynychi, 24.08.2017, 2 ♀.

Distribution. Belgium, British Isles, Czech Republic, Denmark, France, Germany, Hungary, Lithuania, Poland, Slovakia, Switzerland (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kyiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2015, 2016 a, 2017); Transcarpathia (**first record).**

Bionomics. Widespread, common and sometimes numerous in Ukraine. Collected material dates from 29 April to 28 August. Adults occur evenly during hot season.

Agromyza cinerascens Macquart, 1835

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 7 ♀; Kuzyi, clearing in a deciduous forest, 10.05.2018, 1 ♂.

Distribution. Widespread European species (Papp & Černý, 2015). **In Ukraine.** Chernivtsi, Donetsk, Kharkiv and Sumy Regions (Guglya, 2011, 2012, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Common and occasionally numerous. One generation develops per year, adults occur in late spring (from 20 April to 15 May).

Agromyza frontella (Rondani, 1878)

Material examined. Between Sol and Kostryna, 27.06.2018, 1 ♀; road to Antalovetska Polyana, ruderal motley grass near the road, 16.07.2017, 1 ♂.

Distribution. Widespread pest in the Nearctic Region and in Europe (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kyiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2015, 2016 a, 2017); Transcarpathia (**first record)**.

Bionomics. Widespread in Ukraine, sometimes numerous in May. Adults occur evenly during hot season.

****Agromyza hendeli*** Griffiths, 1963

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 1 ♂, 2 ♀; the River Uzh Bank, 22.06.2018, 2 ♀; near Luhy, motley grass, 12.08.2019, 1 ♂; Chynadiyovo, wet clearing, 18.08.2017, 1 ♀; Kharkiv Region, near Petrivske, 49°10' N 36°58' E, 03.07.2010, 1 ♀; Sumy Region, Velyka Pysarivka, 50°26' N 35°28' E, 24.06.2012, 1 ♀.

Distribution. Austria, Belgium, British Isles, Czech Republic, Denmark, Estonia, Germany, Hungary, Italy, Latvia, Lithuania, Poland, Slovakia, Sweden, the Netherlands (Papp & Černý, 2015). **In Ukraine.** Transcarpathia, Kharkiv and Sumy Regions (**first record**).

Bionomics. This rarely collected European species (L. Papp, Černý, 2015) is also rare in Ukraine. Single adults are usually collected from early May to the middle of August.

Agromyza igniceps Hendel, 1920

Material examined. 4 km S Rakhiv Centre, serpentine-blotch mine with larva on *Humulus lupulus,* 20.07.2017, 1 pup.; "Skalka", serpentine-blotch mine with larva on *Humulus lupulus,* 17.09.2016, 21.09.2016 – pupa outside of mine, 1 pup.

Distribution. Widespread but rare European species (Papp & Černý, 2015). **In Ukraine.** Chernihiv, Chernivtsi, Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kyiv, Poltava and Sumy Regions (Guglya, 2012, 2017); Transcarpathia (**first record**).

Bionomics. Widespread in Ukraine. This aspects were discussed earlier (Guglya, 2017). Furhter developing larva were found in July and September (see material). So, this species can develop more than one generation (two or even three), in opposite as previously thought.

Agromyza lucida Hendel, 1920

Material examined. Kamianytsa, 26.06.2018, 1 ♂; Ivano-Frankivsk Region, Polonyna Pozhyzhevska, "tsybulnyk", 48º09'27"N 24º31'49"E, 1366 m a. s. l., 13.06.2018, 1 ♀; Kharkiv Region: Kharkiv, City centre, 50°00' N 36°14' E, 14.07.2016, 1 ♂; near Rubizhne, 50°07' N 36°46' E, 19.07.2014, 1 ♂, 3 ♀; Kyiv Region: Kyiv, Botanical Garden, 50°24'41" N 30°33'39" E, 20.07.2006, 1 ♂, leg. V. Korneyev, Ye. Kameneva; Kyiv, Irpin, 50°30'42" N 30°15'40" E, 21.07.2019, 1 ♂, 1 ♀; Bila Tserkva, "Aleksandryia" Park, boarder of a deciduous forest, River Ros Bank, 49°48' N 30°04' E, 20.06.2015, 1 ♀; Lviv Region: Lviv, Stryiskyi Park, clearing, 49°49' N 24°01' E, 04.07.2018, 1 ♀; Volyn Region: between Svytiaz and Podmanovo, motley grass, 52°34' N 23°54' E, 23.05.2019, 2 ♀; near Pulemets, 51°33'10" N 23°43'43" E, 26.05.2019, 1 ♀.

Distribution. Palaearctic, Nearctic and Oriental regions (Papp & Černý, 2015). **In Ukraine.** Kharkiv Region (Guglya, 2016 a); Ivano-Frankivsk, Kyiv, Lviv, Volyn Regions and Transcarpathia (**first record**).

Bionomics. Widespread, but not numerous in Ukraine.

Agromyza luteitarsis (Rondani, 1875)

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 2 ♀.

Distribution. Widespread European species (Papp & Černý, 2015). **In Ukraine.** Donetsk and Kharkiv Regions (Guglya, 2011, 2015); Transcarpathia (**first record**).

Bionomics. This species is related to *A. cinerascens*, and both often occur together in the same biotopes. Only one generation develops per year, adults can be collected from late April to early May, and larvae develop during May.

Agromyza mobilis Meigen, 1830

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 1 ♂; Kamianytsia, 7.05.2018, 1 ♀; "Skalka", 7.05.2018, 2 ♂; ibid., 14 and 17.07.2017, 3 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 1 ♂; ibid., 14–15.06.2017, 4 ♂, 10 ♀; ibid., 20.06.2018, 2 ♀; Shoimul Mt., semi-shaded slope, 15.06.2018, 1 ♂; 5 km SEE Rakhiv, ruderal motley grass, 18.06.2017, 1 ♂; Bozdozkyi Park, 22.06.2018, 1 ♂; 10 km N Shyrokyi Luh, low motley grass on the River Luzhanka bank, 19.07.2017, 1 ♂, 5 ♀; 4 km SSW Rakhiv Centre, wet motley grass on the slope, 20.07.2017, 1 ♀; Krovysche Mt., meadow, 21.07.2017, 2 ♀; 2 km SEE Rakhiv Centre, low grass meadow, 22.07.2017, 2 ♀; Chynadiyovo, wet clearing, 18.08.2017, 1 ♀; road to Antalovetska Polyana, motley grass on the opening, 22.08.2017, 1 ♂, 1 ♀.

Distribution. Widespread and abundant European species (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kyiv, Poltava, Sumy and Volyn Regions (Guglya 2011, 2012, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Common and numerous in Ukraine. Collected material dates from 2 May to 17 September.

Agromyza nana Meigen, 1830

Material examined. Plishka, 6.05.2018, 1 ♂; 2 km N Rakhiv Centre, 9.05.2018, 2 ♀; Kuzyi, clearing in a deciduous forest, 10.05.2018, 1 ♂; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 1 ♀; 1 km W Dubrynychi, 24.08.2017, 1 ♂, 1 ♀.

Distribution. Widespread European species, has been reported also from the Oriental Region (Papp & Černý, 2015). **In Ukraine.** Kharkiv, Poltava, Sumy and Volyn Regions (Guglya, 2011, 2015, 2017); Transcarpathia (**first record**).

Bionomics. Widespread and common in Ukraine. Adults were uncommonly collected from 1 May to 24 August.

Agromyza nigrella (Rondani, 1875)

Material examined. Kamianytsia, 7.05.2018, 1 ♂, 1 ♀; 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018, 1 ♀; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 1 ♀.

Distribution. Palaearctic, Nearctic and Oriental Regions (Papp & Černý, 2015). **In Ukraine.** Dnipropetrovsk and Kharkiv Regions (Guglya, 2015, 2017); Transcarpathia (**first record**).

Bionomics. Adults are usually most numerous in May, becoming less common in June and July.

Agromyza nigripes Meigen, 1830

Material examined. Pip-Ivan Mt., motley grass near the road, 16.06.2017, 1 ♂, 2 ♀; Kuzyi, clearing in a deciduous forest, 19.06.2018, 1 ♂; "Skalka", 17.07.2017, 1 ♀; "Peremychka", clearing in a coniferous forest, 18.08.2019, 1 ♀; Ivano-Frankivsk Region, Chornohory Mt. Massif, Polonyna Pozhyzhevska and its invironments, 48°09' N 24°32' E, 1370–1540 m a. s. l., motley grass, 9–13.06.2018, 39 ♂, 29 ♀.

Distribution. Palaearctic and Nearctic Regions (Papp & Černý, 2015). **In Ukraine.** Sumy Region (Guglya, 2015); Transcarpathia, Chernihiv, Lviv, Vinnytsa, Volyn Regions (**first record**).

Bionomics. Widespread in Ukraine and sometimes is numerous. Adults are captured from 10 May to 18 August.

Agromyza paralucida Guglya, **sp. n.** (figs 31–39, 41)

urn:lsid:zoobank.org:act:B34AC8B5-5FEB-4416-A6D9-C68B505D1974

Material examined. Type. Holotype ♂, "Ukraine, Kharkiv Region, / near Petrivske / 49°10' N 36°58' E / 3.07.2010 / Guglya Yu. leg.", "8.30–10.30, / high grass floodl and".

Paratypes: 1 ♂, "Ukraine, Kharkiv Region, / near Petrivske / 49°10' N 36°58' E / 3.07.2010 / Guglya Yu. leg.", "8.30–10.30, / high grass fl ood land"; 1 ♂, "Ukraine, Kharkiv Region, / near Bohuslavka, / 49°26' N 37°38' E / 22.06.2013 / Guglya Yu. leg."; 1 ♂, "Ukraine, Transcarpathia, / near Dubrynychi, / 48°48' N 22°28' E / 24.08.2017 / Guglya Yu. leg", "15.30, "Kodybino Pole", / motley grass along the / board of deciduous / forest stand / 240 m a. s. l.", grey label "VOUCHER / Sequenced / specimen / N J0058"; 1 ♂, 2 ♀ "Ukraine, Transcarpathia, / Uzhhorod, Kalvaria, / 48°37' N 22°17' E /21.08.2017 / Guglya Yu. leg."; 1 ♀, "Ukraine, Transcarpathia, / near Kamianytsia, / 48°41' N 22°25' E / 16.07.2017 / Guglya Yu. leg.", "16.30, motley grass / along the road (Apiacea, / *Centaurea, Sonchus,* / *Tanacetum*, *Trifolium*, / *Balsamin*, *Urtica* etc.)"; 1 ♀, "Ukraine, / Kharkiv Region, / Haidary, 23.08.2018, / deciduous forest / Guglya Yu. leg.", grey label "VOUCHER / Sequenced / specimen / N J0305"; 1 ♀, Ukraine, Kharkiv Region, / N Kharkiv, Piatykhatky, / 50°05' N 36°14' E / 10.07.2010, / Guglya Yu. leg."; 1 ♀, "Ukraine, Kharkiv Region, / near Chuhuiev, Kytsivka, / 49°51' N 36°49' E / 26.07.2014 / Guglya Yu. leg.", "11.40, / shadowy opening in a / deciduous forest stand"; 2 ♀, "Russia, Belgorod Region, / near Borisovka / 50°35' N 35°58' E / 8.07.2011 / Guglya Yu. leg.".

Description. Head (figs 31, 32). Head black and orange. Orbit black, strongly projected above eye in profile at level of lunulae, narrow, matt, without clear contour (anterior view); 2 orbs, 2 frs; frorbsta sparse, short, reclinate; frons dirty-orange, matt; lunule orange, rounded, with narrow furrow from ptilinal fissure to facial carina; facial carina very narrow, but distinctly projected; gena dirty-orange; ocellar triangle black, shining, reaching to the level of lower orbs; maximum height of eye 2.75× maximum height of gena.

Wing (fig. 33). Wing beige. Costa reaching M_1; last section of CuA_1 0.65× as long as penultimate; calypter and margin white to beige, fringe slightly darker, ochrous. Wing length 2.5 mm.

Mesonotum and scutellum black, moderatyly shining, scutellum shining less (dorsal view); 3+0 dc, first very strong, third very weak (0.5× as long as first); acr in 5 rows at level of 3rd dc; halter white, legs black.

Male genitalia (figs 34–38). Phallus is typical of those seen among grass-feeding *Agromyza*. Sclerites (arms) of basiphallus relatively long, more than twice as long as mesophallus-distiphallus complex, wide and rounded anteriorly. Distiphallus blunt and slightly widening anteriorly, its length equal to the length of mesophallus (lateral view). Ejaculatory apodeme elongated, narrow triangular; length of ejaculatory bulb equal to the apodeme. Phallus 0.4 mm length, one specimen from Kalvaria with length of phallus 0.35 mm.

Female terminalia (fig. 39). Both spermathecae dark brown, trapezoidal, elongated with sharp triangular invagination apically. Internal duct invagination cylindrical, well sclerotized, with narrow collar of spermathecal duct near capsule base. One always larger than other. Capsule of the smallest curved at a 45°angle.

Diagnosis. Structure of male terminalia of the new species is similar to those *A. lucida* and *A. megalopsis*, but those of the new species differ in the shape, relative size and orientation of the basiphallus and mesophallus-acrophallus complex, the quantity and localization of setae on surstyli, and the shape of the basal lobes of the hypandrium and ejaculatory apodeme (see table 1 below).

Table 1. Comparative characteristic of male terminalia structures of *Agromyza megalopsis* Hering, *Agromyza paralucida* sp. n. and *Agromyza lucida* Hendel

Parameters	*A. megalopsis*	*A. paralucida*	*A. lucida*
length of basiphallus divided by that of mesophallus-distiphallus complex	2.06	2.04	1.75
quantity of setae on surstylli	10 strong + 3 slender	18 strong short	17 strong elongate + 3 slender
localization of setae on surstylli	8 closely arranged and 2 basally shortly distanced	14 closely arranged and 4 laterally shortly distanced	five groups of closely arranged setae (5–8–2–1–1)
shape of pregonites (ventral view)	elongated triangular with 1 slender seta	angulate with 7 slender setae	angulate with 5 slender setae
shape of distiphallus anteriorly (lateral view)	rounded	blunt	blunt
shape, relative sizes and orientation of distiphallus and mesophallus	wide, equal paralleled	narrow, equal paralleled	narrow, 1.55 on the angle 45°
shape of ejaculatory apodeme	oval, wide basally	elongated triangular, narrow basally	wide triangular, narrow basally

The new species can be integrated to the Key of *Agromyza* of Hungary (Papp & Černý, 2015) as follows:

0. Presutural dc pair absent (figs 31–39) ..... *A. paralucida* sp. n.
— 1 or 2 pairs of presutural dc present 1

Distribution. Transcarpathia and Kharkiv Region of Ukraine and Belgorod Region of Russia (fig. 41).

Host specialization. Host plant unknown, the structure of the male and female terminalia associates it with grass-feeding species.

Etymology. The name of new species indicates on the similarity with *A. lucida*.

Agromyza prespana Spencer, 1957

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 2 ♀.

Distribution. Europe: from Great Britain to Macedonia and Hungary and from France to Sweden (Papp & Černý, 2015). **In Ukraine.** Chernivtsi, Chernihiv, Kharkiv, Khmelnytskyi, Kyiv, Poltava and Sumy Regions (Guglya, 2012, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Widespread in Ukraine. Adults were collected from 4 May to 7 July.

Agromyza pseudoreptans Nowakowski, 1967

Material examined. 4 km SSW Rakhiv Centre, wet motley grass on the slope, 14.06.2017, 1 ♂; 5 km SEE Rakhiv, motley grass on a slope near the forest edge, 18.06.2017, 1 ♀; Botanical Garden, 4.07.2019, 1 ♀.

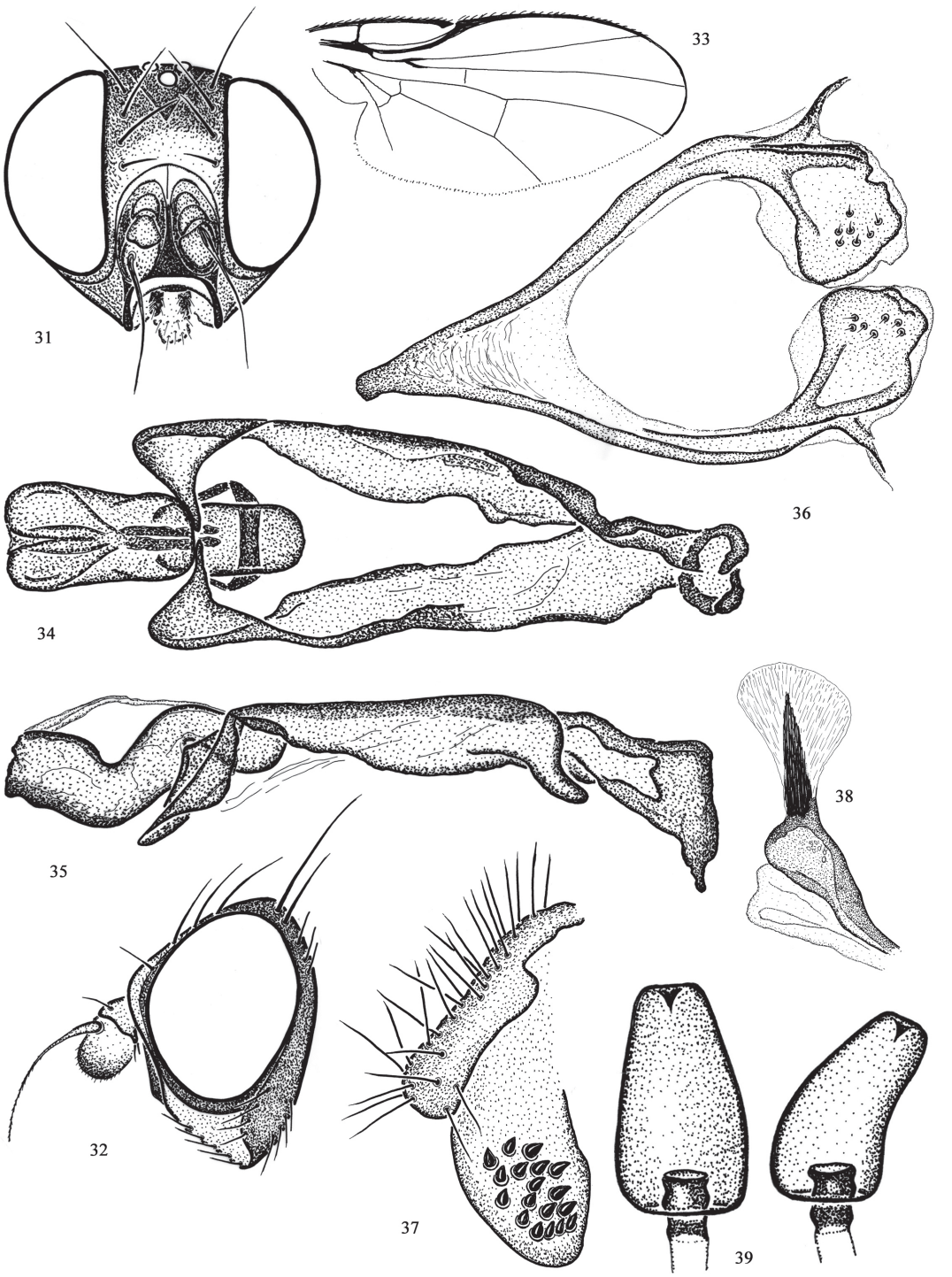
Distribution. Palaearctic and Nearctic Regions (Papp & Černý, 2015). **In Ukraine.** Chernihiv, Kharkiv, Kyiv, Poltava, Sumy and Volyn Regions (Guglya, 2015, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. Common in Ukraine. Normally adults are numerous in thickets of their host plant *Urtica* spp. during May–July. They occur more sporadically in August and September.

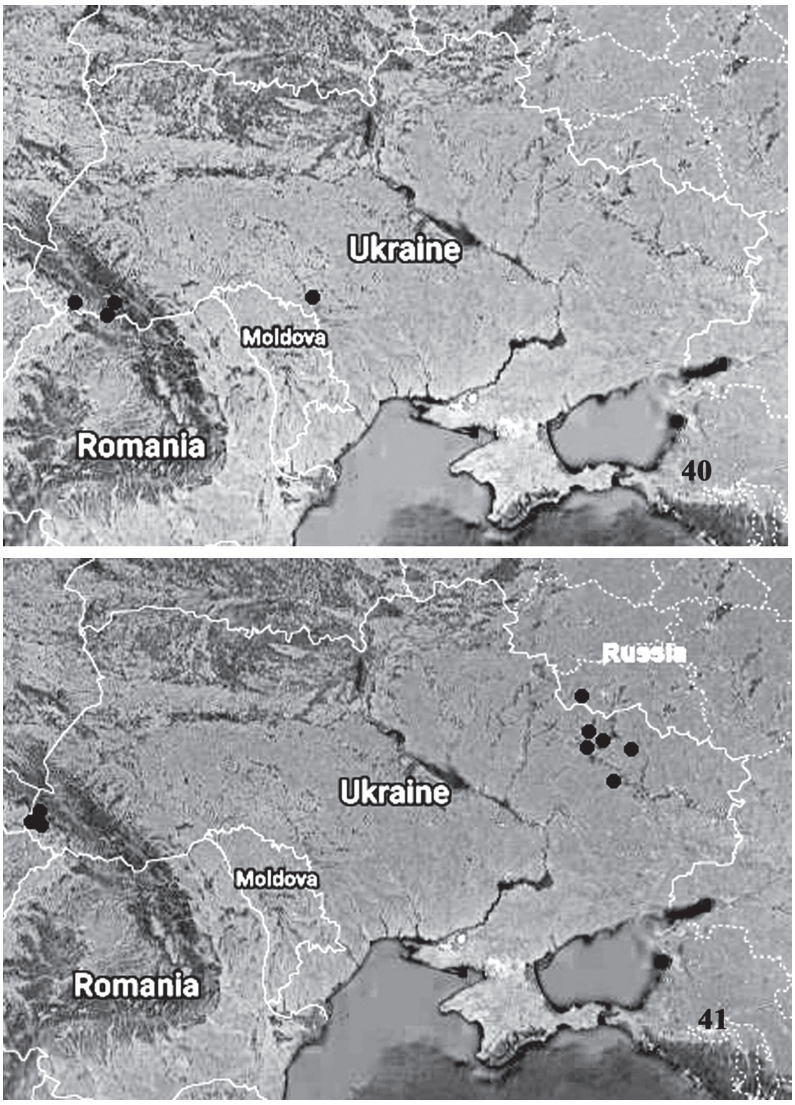
Agromyza reptans Fallén, 1823

Material examined. 2–4 km E Dilove, motley grass along Potik Bilyi, 11.05.2018 and 14.06.2017, 2 ♀; 5 km SEE Rakhiv, motley grass on a slope near the forest edge, 18.06.2017, 2 ♀; road to Antalovetska Polyana, 16.07.2017, 2 ♂, 2 ♀; 4 km SSW Rakhiv Centre, wet motley grass on the slope, 20.07.2017, 1 ♀; Kalvaria, ruderal motley grass, 21.08.2017, 1 ♀.

Distribution. Palaearctic and Nearctic Regions (Papp & Černý, 2015). **In Ukraine.** Chernihiv, Dnipropetrovsk, Donetsk, Kharkiv, Kyiv, Poltava and Sumy Regions (Guglya, 2011, 2012, 2015, 2016 a, 2017); Transcarpathia (**first record**).



Figs 31–39. *Agromyza paralucida* sp. n., holotype: 31, 32 — male head; 33 — wing; paratype: 34 — phallus (ventral view); 35 — phallus (lateral view); 36 — hypandrium (ventral view); 37 — right surstylus and cercus; 38 — ejaculatory apodeme; 39 — spermatheca.



Figs 40, 41: 40 — map of distribution of *Ophiomyia kireshiensis* sp. n.; 41 — map of distribution of *Agromyza paralucida* sp. n.

Bionomics. Widespread and common in Ukraine. Adults occur from May to August, and larvae can be found until September. Three generations develop per year.

Agromyza rondensis Strobl, 1900

Material examined. 3 km N Chop, floodplain meadow on Latorytsa River bank, 4.05.2018, 1 ♂, 1 ♀.

Distribution. Palaearctic and Oriental Regions (Papp & Černý, 2015). **In Ukraine.** This "pestiferous … species" (Papp & Černý, 2015) hitherto has been sporadically found in Dnipropetrovsk, Kharkiv and Volyn Regions in May and in Crimea in September (Guglya, 2011); Transcarpathia (**first record**). Only 5 ♂ and 3 ♀ are in the collection of KMUN. Its distribution and bionomics in Ukraine need further clarification.

Agromyza seticercus L. Papp in Papp & Černý, 2015

Material examined. 2–4 km E Dilove, motley grass along Potik Bilyi, 14.06.2017, 1 ♂, 1 ♀; Bozdozkyi Park, 22.06.2018, 4 ♀; Kamianytsia, 26.06.2018, 1 ♂, 2 ♀; between Sol and Kostryna, motley grass, 27.06.2018,

1 ♀; "Skalka", 14 and 17.07.2017, 1 ♂, 2 ♀; road to Antalovetska Polyana, ruderal motley grass near the road, 16.07.2017, 3 ♂, 3 ♀; 10 km N Shyrokyi Luh, clearing on the River Luzhanka Bank, 19.07.2017, 1 ♀; Krovysche Mt., meadow, 21.07.2017, 1 ♂; Zamkova Hill, motley grass near the hospital, 23.07.2017, 2 ♂, 3 ♀; Velyatyn, wet shadowy motley grass on the left River Tisa Bank, 24.07.2017, 2 ♂, 3 ♀; Chynadiyovo, wet clearing, 18.08.2017, 1 ♀; Karpaty, motley grass under oak trees, 18.08.2017, 1 ♀; Okli Hed, deciduous forest with *Quercus* and *Caprinus,* 19.08.2017, 1 ♂, 3 ♀; Kalvaria, ruderal motley grass, 21.08.2017, 1 ♂, 3 ♀; 1 km W Dubrynychi, 24.08.2017, 1 ♀.

Distribution. Hungary (Papp & Černý, 2015), Croatia, Czech Republic, Slovakia, Switzerland, Uzbekistan (Černý & Roháček, 2020). **In Ukraine.** Chernivtsi, Chernihiv, Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kyiv, Poltava and Sumy Regions (Guglya, 2016 a, 2017); Transcarpathia (**first record**).

Bionomics. This is the most widespread, common and numerous *Agromyza* species in Ukraine. Adults were collected evenly from 1 May to 24 August. Three generations develop per year.

Agromyza vicifoliae Hering, 1932

Material examined. 5 km SEE Rakhiv, motley grass on a slope near the forest edge, 18.06.2017, 1 ♂, 1 ♀.

Distribution. Widely distributed Europaean species (Papp & Černý, 2015). **In Ukraine.** Kyiv Region (Guglya, 2017); Transcarpathia (**first record**).

Bionomics. Rare in Ukraine. Adults were collected in the end of May and in the end of June.

Conclusion

During the investigation of Transcarpathian's Agromyzinae, 56 species were collected.

Four species were discovered for the first time in Ukraine: *Melanagromyza nartshukae* Pakalniškis, 1996, *Ophiomyia pseudonasuta* Černý, 1994, *Agromyza anderssoni* Spencer, 1976 and *A. hendeli* Griffiths, 1963. Only *Melanagromyza nartshukae* Pakalniškis, 1996 is presently known only from Transcarpathia. Others were collected also in various Regions of Ukraine.

Three species *Ophiomyia kireshiensis* sp. n., *O. mukhorytsa* sp. n. and *Agromyza paralucida* sp. n. were described, with *O. mukhorytsa* hitherto known only from Ukrainian Carpathian Mountains.

To date totally 105 species from subfamily Agromyzinae are listed for Ukraine.

I thank Dr. V. H. Roshko, Dr. V. Mirutenko, Ye. Liashenko, N. Koval, R. Chumulyak for their kindly help in coordinating and organizing my field work in Transcarpathia. V. V. Roshko is thanked for collecting material.

Two anonymous referees kindly provided constructive criticism on the manuscript, which is greately appreciated.

This work was partly completed in the frameworks of the project "Training the new generation of entomologists in DNA-based molecular methods — international network (EntoMol)" supported by the Eurasia Programme 2017–2019 of the Norwegian Centre for International Cooperation in Education (SIU) (Project CPEA-LT-2016/10140), and special thanks are due to Dr. V.Gusarov, coordinator of the project, for this opportunity. I am very grateful to Dr. A. Zinenko for valuable advice during the analysis of obtained molecular data.

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Received 4 November 2020
Accepted 15 December 2020