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NEW RECORDS OF HOVERFLIES (DIPTERA, SYRPHIDAE) FROM UKRAINE. III. PIPIZINAE AND SYRPHINAE

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New Records of Hoverflies (Diptera, Syrphidae) from Ukraine. III. Pipizinae and Syrphinae. Prokhorov, A. V., Popov, G. V., Zaika, M. I. — Five species of hoverflies of the subfamilies Pipizinae and Syrphinae: *Pipiza accola* Violovitsh, 1985, *Platycheirus nielseni* Vockeroth, 1990, *P. occultus* Goeldlin, Maibach and Speight, 1990, *Epistrophe olgae* Mutin, 1990, and *Xanthogramma laetum* (Fabricius, 1794) are recorded from Ukraine for the first time. Distributions of these species are summarized and diagnoses of the species are provided.

Key words: Diptera, Syrphidae, *Pipiza*, *Platycheirus*, *Epistrophe*, *Xanthogramma*, Ukraine.

Introduction

Hoverflies are important pollinators and the larvae of some species (subfamily Syrphinae and Pipizinae) are predators of various soft-bodied insects, especially plant pests (Rotheray 1994; Speight, 2017; etc.). The hoverfly fauna of Ukraine remains poorly studied, especially for its western part (the so-called Right-Bank Ukraine). While compiling a checklist of Ukrainian syrphids (Popov & Prokhorov, in prep.), several species with predatory larvae were collected that were not previously recorded from the Ukraine. There are 12 species of the genus *Pipiza* known from Europe (Speight, 2017) and 10 species registered in Ukraine (Popov & Prokhorov, in prep.). *Platycheirus*, one of the largest syrphid genera with 61 recorded European species (Speight, 2017), has been extremely poorly studied in Ukraine, with only 17 species known (Popov & Prokhorov, in prep.) and most of the old records needing revisiting. The genus *Epistrophe* is represented in Ukraine by eight species (Popov & Prokhorov, in prep.), of which only three or four are frequent. The six known European species of the genus *Xanthogramma* need revision (Speight, 2017); five of them are found in Ukraine (Popov & Prokhorov, in prep.).

This article continues the series of papers considering the first records of the hoverflies from Ukraine (Prokhorov et al., 2017, 2018 a, b; Prokhorov & Popov, 2017).

Material and methods

All the specimens are deposited in the collection of the I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, Kyiv (Ukraine).

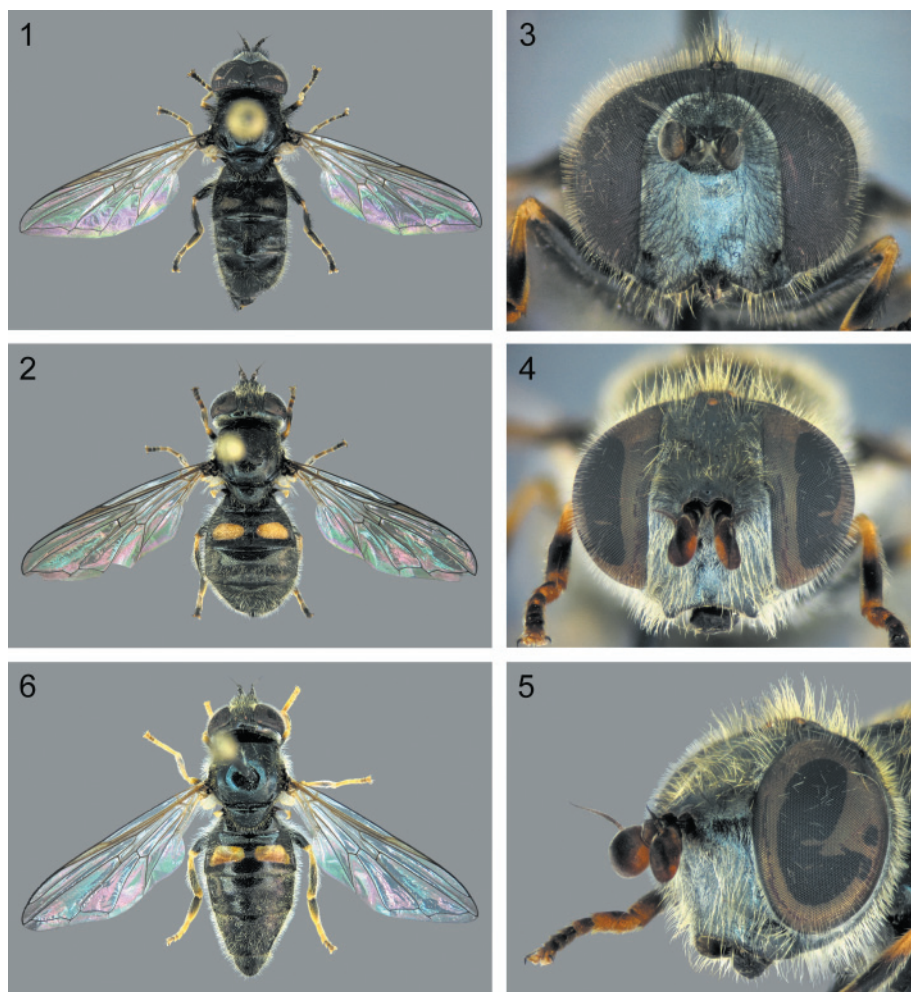
We follow the morphological terminology of McAlpine (1981), Vockeroth & Thompson (1987), Thompson & Rotheray (1998), with some additions of Speight (1987). Diagnoses are generally based on the keys by Goeldlin de Tiefenau et al. (1990), Speight & Goeldlin de Tiefenau (1990), Vockeroth (1990), Mutin & Barkalov (1999), Bartsh et al. (2009), Van Veen (2010), Vujić et al. (2013) and Speight & Sarthou (2017).

Figures 1–16 and 19–29 are from photographs taken using a Canon Power Shot A 640 camera mounted on Carl Zeiss Stemi 2000 binocular microscope; figures 17 and 18 are from photographs taken with a Leica DFC 450 camera, mounted on Leica Z16 APO (version 3.8.0); all images were subsequently combined with Helicon Focus (version 6.0.18) and processed in Adobe Photoshop CS6 by A. V. Prokhorov.

Subfamilia Pipizinae Tribe Pipizini

Pipiza accola Violovitsh, 1985 (figs 1–5)

Material examined. Ukraine. Kyiv Region: Irpin env.: 50.50 N 30.28 E, Lyubka River floodplain, 17.04.2016, 2 ♂; idem, 50.50 N 30.27 E, 11.04.2017, 1 ♂, 1 ♀ (A. Prokhorov); Kotsiubynske env., 50.47 N 30.30 E, clearing in mixed forest, 13.05.2016, 1 ♀ (M. Zaika).



Figs 1–6. *Pipiza accola* (figs 1–5) and *P. luteitarsis* female (fig. 6) from Kyiv Region: 1, 2, 6 — habitus, dorsal view; 3, 4 — male head (3) and the female (4), frontal view; 5 — female head, anterolateral view.

Distribution: southern Norway, Sweden and Finland, Germany (Lower Saxony, Baden-Württemberg), Poland, Russian Far East (Magadan Region, Khabarovsk Region, Amur Region, Primorsky Region), Iran (Wolff, 1998; Mutin, 2002; Kazerani et al., 2012; Vujić et al., 2013; Speight, 2017; Mielczarek, 2018); Ukraine (**first record**).

Diagnosis. *Pipiza accola* belongs to *P. luteitarsis* species group, which is characterized by the smooth hind femora without paired ventral, longitudinal ridges at the distal end, as well as ventral part of basoflagellomere reddish (Vujić et al., 2008). There are only four species in this group known in Europe: *P. accola*, *P. luteibarba* Vujić, Radenković & Polić, 2008, *P. luteitarsis* Zetterstedt, 1843, and *P. quadrimaculata* (Panzer, 1804). *Pipiza accola* clearly differs from *P. quadrimaculata* by the narrow abdomen, absence of the pale spots on the tergite 3 and by lack of well defined marginal ridge of the abdomen. *Pipiza accola* is very similar to *P. luteitarsis* (fig. 6) and *P. luteibarba*, from which the **male** of *P. accola* (figs 1, 3) can be reliably distinguished from the features of genitalia (Vujić et al., 2008). The genitalia of the Ukrainian males of *P. accola* were dissected and compared with figures in Vujić et al. (2008, 2013). **Female** (figs 2, 4, 5) differs from *P. luteitarsis* by the sternite 5 noticeably wider than long (in *P. luteitarsis*, sternite 5 longer than wide). From similar *P. luteibarba* it differs by the basoflagellomere short, oval, slightly longer than wide (fig. 5) (in *P. luteibarba*, the basoflagellomere 1.5 times longer than wide), the frons broader than width of the eye at the level of the anterior margin of the pollinose lateral spots (dorsal view) (in *P. luteibarba*, the frons narrower than width of the eye at the level of the anterior margin of the pollinose lateral spots) (Vujić et al., 2013).

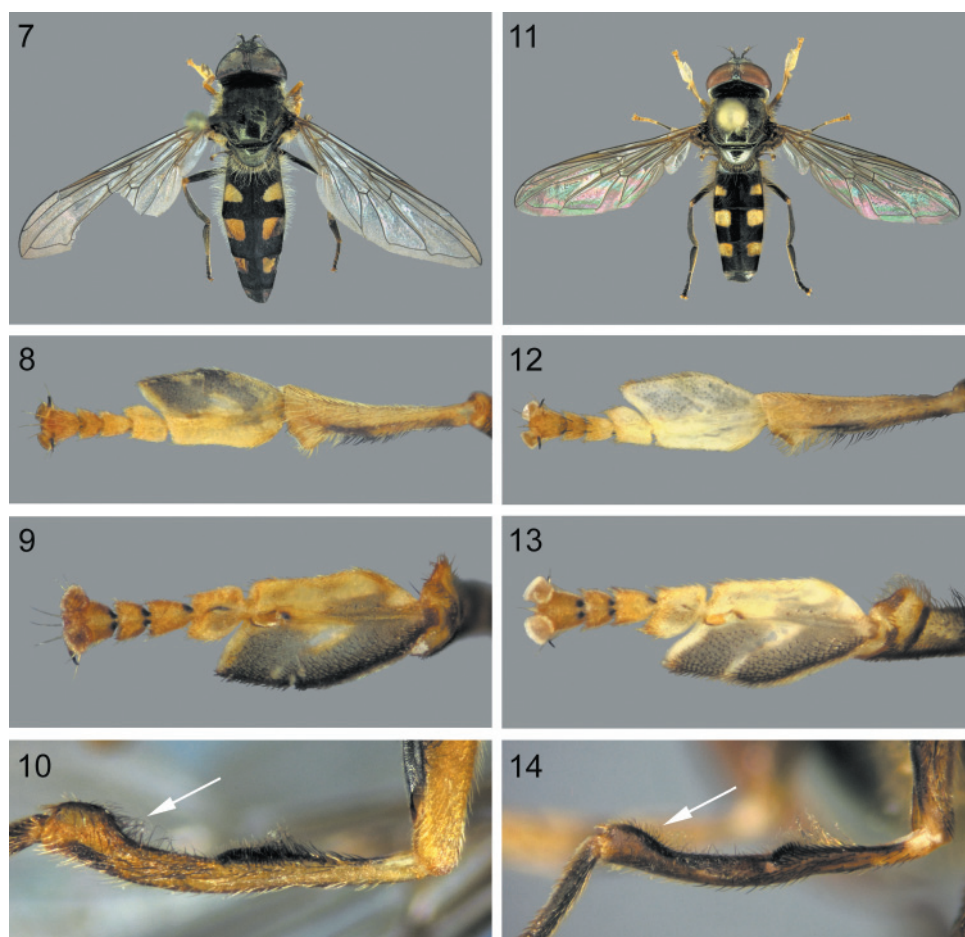
Subfamilia Syrphinae Tribe Bacchini

Platycheirus nielsenii Vockeroth, 1990 (figs 7–10)

Material examined. Ukraine. Zakarpattia Region: Synevyr Lake, 48.62 N 23.67 E, 15.06.2005, 1 ♂ (collector unknown).

Distribution: from Fennoscandia south to northern France; from Ireland eastwards through northern and central Europe (including northern Italy), frequent in the central Alps; Hungary to European Territory of Russia; Siberia and Far East of Russia (Magadan Region, Khabarovsk Region); scattered records from Northern America from Alaska through much of Canada and south through the Rocky Mountains to Colorado (Mutin & Barkalov, 1999; Tóth, 2011; Speight, 2017); Ukraine (first record).

Diagnosis. This species belongs to *P. peltatus* group (Young et al., 2016); it is very similar to *P. amplus* Curran, 1927 (Vockeroth, 1990; Young et al., 2016) in having first tarsomere of fore leg with weak dorsal keel on apical half, but without distinct keel on basal half. Male can be distinguished from *P. amplus* by the mid tibia with apex strongly swollen (fig. 10) (in *P. amplus*, the apex of the mid tibia weakly swollen); the “apical half of ventral surface of the mid tibia with suberect, tangled, dark pile, which is approximately equal in length to tibial diameter” (fig. 10) (in *P. amplus*, the “apical half of ventral surface of the mid tibia with very short, scarcely discernible pile”); the anepimeron with pile only on upper half, and pile forming a compact tuft (in *P. amplus*, the anepimeron with at least some pile on lower half, and pile on upper half not forming a compact tuft); the wing membrane entirely trichose (in *P. amplus*, bare area of the cell bm at most one-third as long as the cell and well separated from anterior margin (Young et al., 2016). From similar *P. peltatus* (Meigen, 1822) (figs 11–14) it differs by the strongly swollen apex of the mid tibia with a tuft of long hairs at the base of dilation, the hairs pointing towards the base of the tibia (fig. 10) (in *P. peltatus*, the mid tibia only slightly swollen with a tuft of short erect hairs, as on fig. 14), the wing with the basal cell bm without distinct bare area, sometimes with “very small bare areas at bases of cells c and bm” (in *P. peltatus*, the cell bm with medial bare area



Figs 7–14. Males of *Platycheirus nielseni* (figs 7–10) and *P. peltatus* (Moscow Region, figs 11–14): 7, 11 — habitus, dorsal view; 8, 12 — left fore tibia and tarsus, dorsal view; 9, 13 — left fore tarsus, ventral view; 10, 14 — left mid tibia, anteroventral view (arrow shows the swollen apex with dark pile).

in the basal half) (Vockeroth, 1990; Bartsh et al., 2009; Van Veen, 2010; Young et al., 2016).

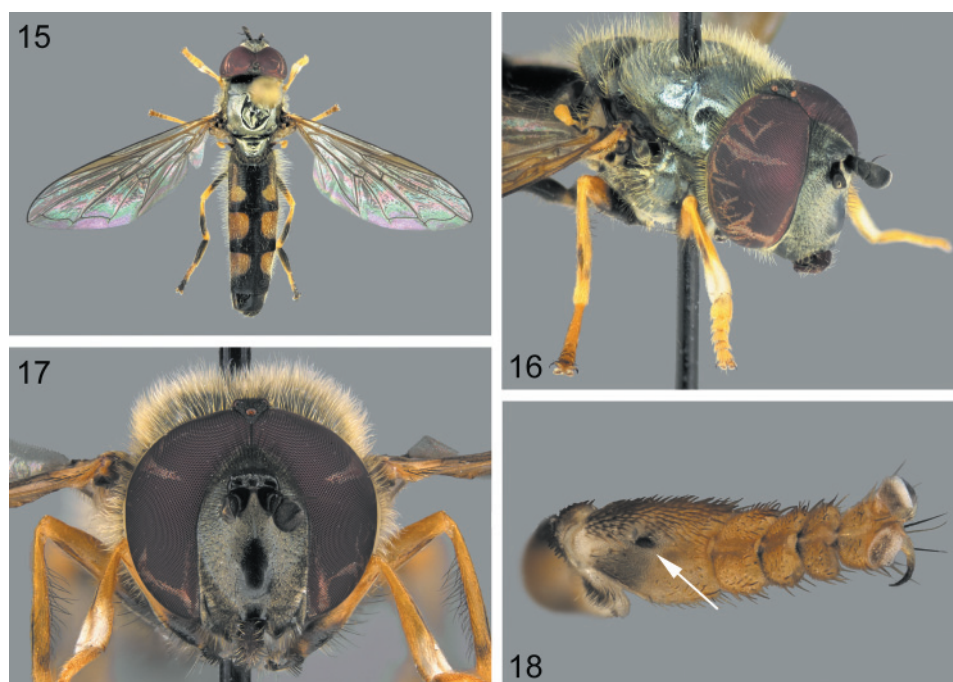
Note. In *P. nielseni* male, the scutum is described as “with hairs mostly black” (Vockeroth, 1990) or “with mixed black and yellow pile” (Young et al., 2016). In the Ukrainian specimen the scutal hairs are mostly pale.

***Platycheirus occultus* Goeldlin, Maibach and Speight, 1990 (figs 15–18)**

Material examined. Ukraine. Kyiv Region: Irpin env., 50.51 N 30.27 E, edge of mixed forest along railway, 11.04.2017, 1 ♂ (A. Prokhorov).

Distribution: Belarus, Britain, Czech Republic, Denmark (incl. the Faroe Islands), Finland, France, Germany, Hungary, Ireland, Italy (Apennines), Liechtenstein, Norway, Poland, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland; Azerbaidjan, Iran, Turkey (Holinka & Mazánek, 1997; Reemer, 2000; Jensen, 2001; De Groot et al., 2010; Tóth, 2011; Speight, 2017; Mielczarek, 2018); Ukraine (first record).

Diagnosis. This species belongs to *P. clypeatus* group of species (Speight & Goeldlin de Tiefenau, 1990; Bartsh et al., 2009). This group can be recognized by the entirely black antenna, orange-brown markings on the abdominal tergites, facial prominence and upper mouth-edge projecting anteriorly no further than the frontal prominence, male fore tibiae widening progressively from base to apex (Speight & Goeldlin de Tiefenau, 1990). Male



Figs 15–18. Male of *Platycheirus occultus*: 15 — habitus, dorsal view; 16 — head and thorax, anterolateral view; 17 — head, frontal view; 18 — left fore tarsus, ventral view (arrow shows the pit at the center of the basitarsomere).

differs from similar species (*P. angustatus* (Zetterstedt, 1843), *P. europaeus* Goeldlin, Maibach & Speight, 1990 and *P. ramsarensis* Goeldlin, Maibach & Speight, 1990) by the underside of the basitarsomere of the fore tarsus with a straight, pale central furrow, sometimes ending in a small round pit containing a black mark (fig. 18) (in *P. angustatus*, *P. europaeus* and *P. ramsarensis* the underside of the basitarsomere of the fore tarsus with a V-shaped pale furrow), the distal half of all segments of the fore tarsus without a brown/black maculae ventrally (fig. 18) (in the aforementioned species, the distal half of the segments 2–3 of the fore tarsus often with a brown/black maculae ventrally). From similar *P. magadanensis* Mutin, 1999 it differs by the pale furrow on the underside of the basitarsomere of the fore tarsus starting at its base and ending in a pit that is more readily visible than the furrow (in *P. magadanensis*, the underside of the basitarsomere of the fore tarsus with a relatively broad, shining furrow covering the central third of its length); posterior side of the fore femur (in addition to the bent, white seta) with several bent hairs (in *P. magadanensis*, posterior side of the fore femur (except for the bent, white seta) with only straight hairs) (Bartsh et al., 2009). *Platycheirus occultus* differs from the similar *P. clypeatus* (Meigen, 1822) by the pale furrow on the underside of the basitarsomere of the fore tarsus ending already in the middle of the segment (sometimes we see only a pit at the centre of the segment, as on fig. 18) (in *P. clypeatus*, the pale furrow on the underside of the basitarsomere of the fore tarsus ending near the apex), and at least the basal quarter of the posterior side of the fore femur is black (fig. 17) (in *P. clypeatus*, the fore femur more or less entirely yellow, at most slightly black at base) (Speight & Goeldlin de Tiefenau, 1990; Bartsh et al., 2009). From similar *P. angustipes* Goeldlin, 1974 it can be separated by the distal half of all segments of the fore tarsus without a brown/black maculae ventrally (fig. 18) (in *P. angustipes*, the distal half of all segments of the fore tarsus with a large brown/black maculae ventrally), the fore femur is black/dark brown for less than the half of length (fig. 17) (in *P. angustipes*, the fore femur is black/dark brown for 3/4 of length), and surstyli entirely pale-haired (in *P. angustipes*, the base of surstyli often with the long black bristly

hairs mixed with the pale yellow bristly hairs) (Speight & Goeldlin de Tiefenau, 1990; Van Veen, 2010).

Note. The biotope where the specimen was found is corresponding with ones of cluster B (Reemer, 2000), this is the highest part of Irpin River floodplain near mixed forest consisting mainly of *Quercus*, *Pinus*, *Padus* and *Carpinus*.

Tribe Syrphini

Epistrophe olgae Mutin, 1990 (figs 19, 20, 23–25)

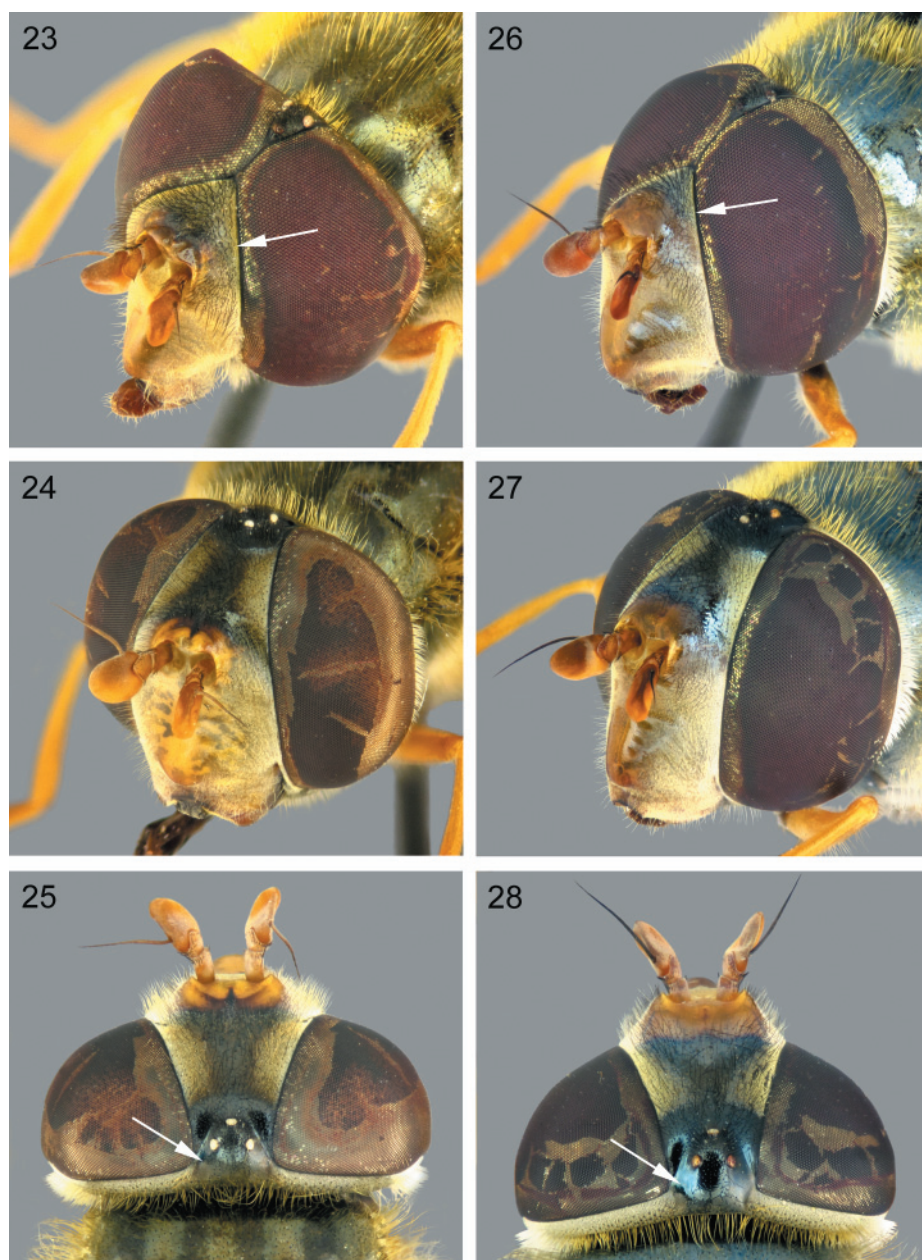
Material examined. Ukraine. Kyiv Region: Potashnia env., 50.71 N 29.74 E, Tal River floodplain, 9.05.2016, 1 ♀; Kotsiubynske env., 50.47 N 30.30 E, clearing in mixed forest, 17.04.2016, 1 ♂ (A. Prokhorov).

Distribution: uncertain, due to confusion with *Epistrophe nitidicollis* (Meigen, 1822), already known from Norway, Sweden, Finland, France (Rhine valley in Alsace), Switzerland and Far East of Russia (Kamchatka Peninsula, Khabarovsk Region, Primorsky Region, Kuril Islands (Mutin, 1990; Mutin & Barkalov, 1999; Speight, 2017); Ukraine (first record).

Diagnosis. *Epistrophe olgae* is most similar to *Epistrophe nitidicollis* (figs 21, 22, 26–28), having the second basal cell of wing 20% or more bare of microtrichia, mesoscutum brightly shining, undusted, and tergite 5 partly black (Speight & Sarthou, 2017). Both sexes can be separated from it by the orange-brown arista (figs 23–25) (in *E. nitidicollis*, arista black or dark brown, as on figs 26–28) (Speight & Sarthou, 2017), and the mesonotum shining with an olive or golden tint (in *E. nitidicollis*, the mesonotum shining black with a bluish tint) (Mutin & Barkalov, 1999). Male can be distinguished from *E. nitidicollis* by the frons with a grey or golden (Mutin, 1990) or faint yellow-gray dust (in *E. nitidicollis*, the frons with a distinct grey dust) (Bartsh et al., 2009; Speight & Sarthou, 2017); in the Ukrainian specimen of *E. olgae*, the frons with distinct golden dust (fig. 23), while in *E. nitidicollis* the frons with a yellowish-gray dust (fig. 26). Female differs from *E. nitidicollis*



Figs 19–22. *Epistrophe olgae* (figs 19–20) and *E. nitidicollis* (figs 21–22), Kyiv Region: 19, 21 — male habitus, dorsal view; 20, 22 — female habitus, dorsal view.



Figs 23–28. *Epistrophe olgae* (figs 23–25) and *E. nitidicollis* (figs 26–28) from Kyiv Region: 23, 26 — male head, anterolateral view (arrow shows the dust on the frons); 24, 27 — female head, anterolateral view; 25, 28 — same, dorsal view (arrow shows the part of the vertex with (25) or without (28) dust).

by the frons almost entirely dusted brownish-grey (in *E. nitidicollis*, the frons with a pair of brownish-grey dust spots, though these dust spots may be joined in the mid-line), the vertex pollinose with a brownish-grey dust, lateral to the ocellar triangle (fig. 25) (in *E. nitidicollis*, the vertex shining black, undusted, lateral to the ocellar triangle, as on fig. 28) (Speight & Sarthou, 2017). In the Ukrainian specimen of *E. olgae*, the frons with a pair of almost separated (figs 24, 25), yellowish-grey dust spots (but the frons between these spots faintly pollinose, not shining), whereas in *E. nitidicollis*, these yellowish-grey dust spots are distinctly separated, and the frons between this pollinose spots is shining (figs 27, 28).

Note. It is noteworthy that the descriptions (Mutin, 1990; Mutin & Barkalov, 1999) do not mention that *E. olgae* has an orange-brown arista. Mutin (1990) describes it as a brown arista, but it has not been included among distinctions of *E. olgae* from *E. nitidicollis*. This remarkable character (among others) clearly differentiates these two species among the Ukrainian specimens.

Xanthogramma laetum (Fabricius, 1794) (fig. 29)

Material examined. Ukraine. Zakarpattia Region: Kamianytsia env., 48.70 N 22.43 E, Uzh River valley (left bank), 9–10.05.2017, roads in deciduous forest, 4 ♀ (A. Prokhorov).

Distribution: from northern Germany south to south-west France, and from Belgium eastwards through central and southern Europe (Germany, Poland, Italy, former Yugoslavia) to Czech Republic, Slovakia, Hungary, Romania, Bulgaria and central part of European Russia (Peck, 1988; Holinka & Mazánek, 1997; Tóth, 2011; Speight, 2017; Mielczarek, 2018); Ukraine (first record).

Diagnosis. It easily differs from the other European species of the genus by the distinctly haired eyes, the hairs longer than the diameter of the anterior ocellus (in other species, the eye hairs very sparse, no hairs longer than the diameter of the anterior ocellus). *Xanthogramma laetum* is similar to *X. marginale* (Loew, 1854) only in having yellow transverse fasciae on tergite 3, but can be separated from it by the tergite 2 wider than long, tergite 4 with a transverse yellow fascia and the alula entirely covered by microtrichia (in *X. marginale*, tergite 2 longer than wide, tergite 4 with a pair of transverse yellow marks and the alula extensively bare) (Violovitsh, 1975; Speight & Sarthou, 2017).

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Fig. 29. Female of *Xanthogramma laetum*, habitus, dorsal view.

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