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Distribution and host plants of some tephritid flies (Diptera: Tephritidae) in European Russia and Armenia

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Abstract. First records of Tephritidae spp. (Diptera) for selected areas of European Russia are presented: *Chaetostomella rossica* Hendel, 1927 for Ulyanovsk and Samara regions, *Euleia rotundiventris* (Fallén, 1814) for Ulyanovsk Region and Mordovia, *Urophora stylata* (Fabricius, 1775) for Samara Region and Mordovia. *Tephritis neesii* (Meigen, 1830) is recorded from Armenia and Transcaucasia for the first time. Two species of Asteraceae from Armenia, *Centaurea takhtajanii* Gabrieljan et Tonjan and *Psephellus pulcherrimus* (Willd.) Wagenitz, were identified as new host plants of *Acanthiophilus helianthi* (Rossi, 1794) and *Terellia odontolophi* Korneyev, 1993, respectively.

Key words: Tephritidae, first records, host plants, Russia, Armenia.

Распространение и кормовые растения некоторых мух-пестрокрылок (Diptera: Tephritidae) в Европейской России и Армении

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Резюме. Впервые для ряда регионов Европейской России приведены следующие мухи-пестрокрылки (Diptera: Tephritidae): *Chaetostomella rossica* Hendel, 1927 для Ульяновской и Самарской областей, *Euleia rotundiventris* (Fallén, 1814) для Ульяновской области и Мордовии, *Urophora stylata* (Fabricius, 1775) для Самарской области и Мордовии. Пестрокрылка *Tephritis neesii* (Meigen, 1830) впервые зарегистрирована в Армении и Закавказье. Два вида сложноцветных из Армении, *Centaurea takhtajanii* Gabrieljan et Tonjan и *Psephellus pulcherrimus* (Willd.) Wagenitz, впервые зафиксированы как кормовые растения пестрокрылок *Acanthiophilus helianthi* (Rossi, 1794) и *Terellia odontolophi* Korneyev, 1993 соответственно.

Ключевые слова: Tephritidae, первые указания, кормовые растения, Россия, Армения.

As part of the on-going study of tephritid flies in Armenia and Russia, another portion of the species has been treated. New distribution or host records are provided for several species of tephritid flies in Armenia and European Russia (Mordovia, Ulyanovsk and Samara regions).

The material was collected in 2000–2023 and it is deposited in the first author’s private collection. The comprehensive description of the methodologies including sample collection, rearing and identification is presented in preceding articles [Evstigneev, Glukhova, 2020; Evstigneev, Przhiboro, 2021 etc.]. The morphological terminology used follows the standard set in the “Glossary” chapter of the book “Fruit Flies (Tephritidae): Phylogeny and Evolution of Behavior” [White et al., 2000]. Illustrations of host plant species in habitat are provided. The host plants were identified using “Flora of Armenia” [1995] and Majeovski [2006]. For rearing capitula-infesting flies from host plants, capitula were dissected from stems and placed in cotton bags to minimise the risk of mould development and to ensure more slowly and gradual drying of the capitula tissues.

Acanthiophilus helianthi (Rossi, 1794) (Fig. 1)

Material. Armenia. 1♀, 2♂, Aragatsotn Region, near Tatul vill., subapical part of Arteni Mt., mountain steppe, 16.07.2023, reared from capitula of *Centaurea takhtajanii* Gabrieljan et Tonjan 17.07.2023 (D.A. Evstigneev).

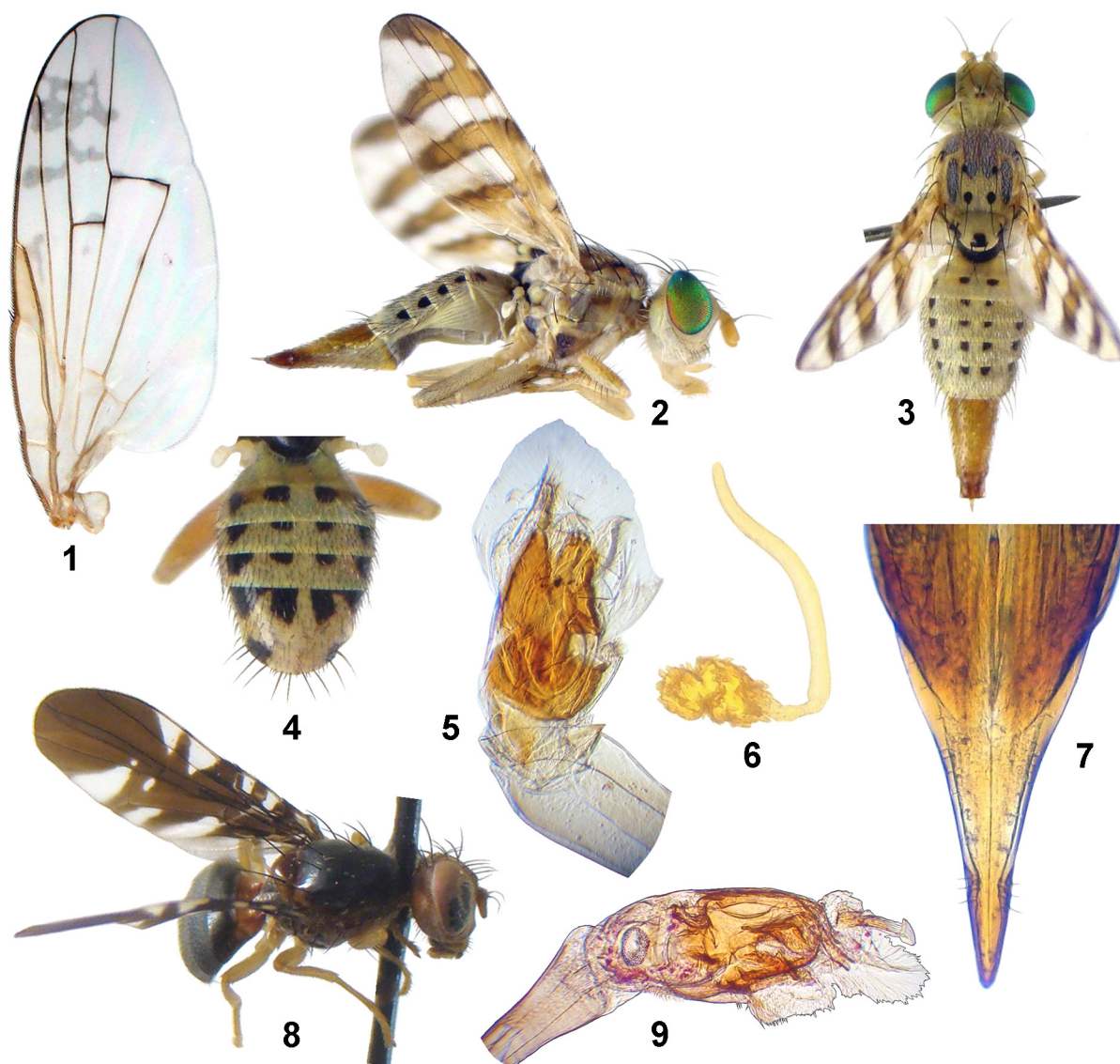
Notes. The female wing of *A. helianthi* reared from *C. takhtajanii* (Fig. 11) is illustrated in Fig. 1. This plant species has not been previously recorded as host plant.

Distribution. Eurasia and North Africa to Ethiopia [Morgulis et al., 2015].

Chaetostomella rossica Hendel, 1927 (Fig. 2–7)

Material. Russia. 5♀, 6♂, Ulyanovsk Region, Bazarny Syzgan District, Papuzy vill., 15–30.07.2011, reared from capitula of *Jurinea cyanoides* (L.) Rchb. 1–23.08.2011 (I.V. Kuznetsova); 3♀, 2♂, Samara Region, Kinel District, near Poplavskiy settlement, disturbed sandy steppe near Lake Razreznoye, swept from *Jurinea* sp., 23.06.2018 (D.A. Evstigneev).

Notes. *Chaetostomella rossica* was originally described as *Chaetostomella onotrophes* forma *rossica* based on specimens from Sarepta (now Krasnoarmeysk District of



Figs 1–9. Tephritidae species, details of structure.

1 – *Acanthiophilus helianthi*; 2–7 – *Chaetostomella rossica*; 8 – *Euleia rotundiventris*; 9 – *Terellia odontolophi*, 1 – female wing; 2–3, 8 – female habitus; 2, 8 – lateral view, 3 – dorsal view; 4 – male abdomen, dorsal view; 5, 9 – glans of phallus; 6 – spermatheca; 7 – distal part of aculeus.

Рис. 1–9. Виды Tephritidae, детали строения.

1 – *Acanthiophilus helianthi*; 2–7 – *Chaetostomella rossica*; 8 – *Euleia rotundiventris*; 9 – *Terellia odontolophi*, 1 – крыло самки; 2–3, 8 – самка, общий вид; 2, 8 – сбоку, 3 – сверху; 4 – брюшко самца сверху; 5, 9 – гланс фаллуса; 6 – сперматека; 7 – дистальная часть акулеуса.

Volgograd). The morphological details of *Ch. rossica* of both sexes are illustrated in Figs 2–7. This species is recorded from Ulyanovsk and Samara regions for the first time.

Distribution. Germany [Korneyev, 2009], Ukraine [Korneyev, 1985a, b], Russia (Voronezh Region [Korneyev, 2003], Volgograd Region [Hendel, 1927], Ulyanovsk and Samara regions).

Euleia rotundiventris (Fallén, 1814)
(Fig. 8)

Material. Russia. 1♀, Ulyanovsk Region, Radishchevo District, natural monument “Malaya Atmala”, 9.06.2006 (D.A. Evstigneev); 1♀, Mordovia, National Park “Smolny”, cordon Novinkovskiy, 54.931°N / 43.421°E, 4–7.07.2020 (K.P. Tomkovich).

Notes. *Euleia rotundiventris* is a leaf-miner of a wide range of umbelliferous plants. The habitus of *E. rotundiventris* is illustrated in Fig. 8. This species is recorded from Ulyanovsk Region and Mordovia for the first time.

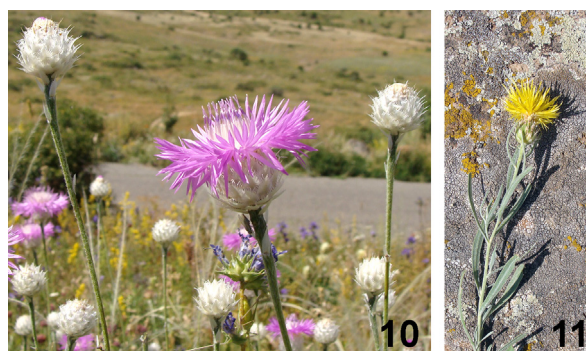
Distribution. British Isles [White, 1986, 1988], Sweden [Korneyev, 1991], Switzerland [Merz, 1994], Austria [Merz, Kofler, 2008], Hungary [Mihályi, 1959, 1960], Ukraine [Korneyev, 1987, 1991], Russia (Leningrad Region [Stackelberg, 1958], Moscow Region [Rozkov, 1956; Korneyev, 1991], Chelyabinsk Region, Bashkiria [Korneyev, 1991], Kemerovo Region [Shcherbakov, 2002], Tomsk Region [Shcherbakov, 2020], Ulyanovsk Region and Mordovia), Kazakhstan [Korneyev, 1991].

Terellia odontolophi Korneyev, 1993
(Fig. 9)

Material. Armenia. 2♀, 3♂, Aragatsotn Region, Aragats Mt., mountain side facing Arailer Mt., 16.07.2022, reared from capitula of *Psephellus pulcherrimus* (Willd.) Wagenitz 2.08.2022 (D.A. Evstigneev).

Notes. Larvae of *Terellia odontolophi* develop in the capitula of various species of the genus *Psephellus*; *P. pulcherrimus* (Fig. 10) is recorded for the first time as a host plant of *T. odontolophi*. Figure 10 shows a female of *T. odontolophi* sitting under the capitulum of *P. pulcherrimus*.

Distribution. Ukraine [Korneyev, 1993], Russia [Evstigneev, 2013], Armenia [Evstigneev, Glukhova, 2021], Iran [Zarghani et al., 2016].



Figs 10–11. Asteraceae species, host plants.
Рис. 10–11. Виды Asteraceae, кормовые растения.
10 – *Psephellus pulcherrimus*; 11 – *Centaurea takhtajanii*.

Tephritis neesii (Meigen, 1830)
(Figs 12–17)

Material. Armenia. 2♀, 3♂, Gegharkunik Region, vicinity of Sevan Town, mountain side facing Sevan Psychiatric Hospital, 24.07.2022, reared from capitula of *Leucanthemum vulgare* Lam. 4.08.2022 (D.A. Evstigneev).

Notes. *Tephritis neesii* was reared from typical host plant, namely *Leucanthemum vulgare* Lam. The morphological details of *T. neesii* of both sexes are illustrated in Figs 12–17. This species is recorded from Armenia and Transcaucasia for the first time.

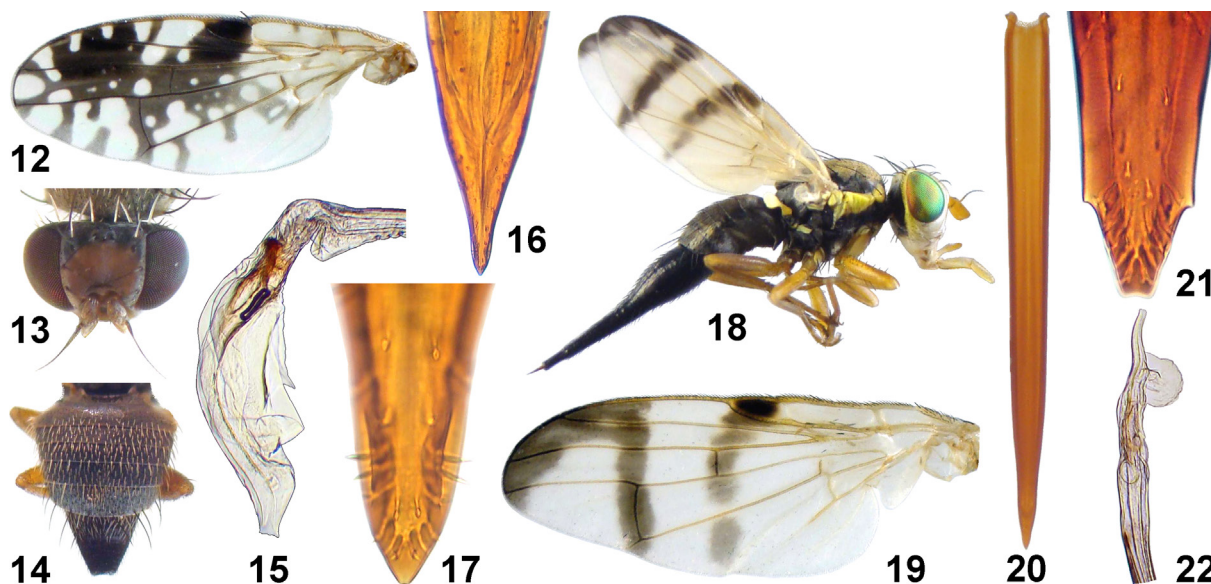
Distribution. British Isles [White, 1986, 1988], Spain, Andorra [Merz, 2001], Belgium [Baugnée, 2006], Switzerland [Merz, 1994], Croatia [Kovac et al., 2022], Hungary [Mihályi, 1959], Lithuania [Lutovinovas, 2014], Ukraine [S. Korneyev, 2011], Russia (Leningrad Region [Stackelberg, 1958], Ulyanovsk Region [Evstigneev, 2016]), Armenia.

Urophora stylata (Fabricius, 1775)
(Fig. 18–22)

Material. Russia. 1♀, Mordovia, National Park “Smolny”, quarter 87, sweeping, 30.06.2021 (G.B. Semishin); 2♀, 3♂, Samara Region, Pestravka District, between nature monument “Teplovskaya Balka” and Mayskoe vill., saline saucer-shaped lowland, 13.09.2000, reared from capitula of *Cirsium esculentum* (Siev.) C.A. Mey. 2021 (V.K. Pastushkova, E.I. Pastushkov).

Notes. *Urophora stylata* is a gall-forming species associated with the capitula various species of the genus *Cirsium* [White, 1988]. The morphological details of *U. stylata* of both sexes are illustrated in Figs 18–22. This species is recorded from Samara Region and Mordovia for the first time.

Distribution. Widely distributed in the Palearctic Region [White, Korneyev, 1989].



Figs 12–22. Tephritidae species, details of structure.
12–17 – *Tephritis neesii*; 18–22 – *Urophora stylata*. 12, 19 – female wing; 13 – male head; 14 – female abdomen; 15, 22 – glans of phallus; 16 – apical and subapical parts of aculeus; 17, 21 – apex of aculeus; 18 – female habitus, lateral view; 20 – aculeus.

Рис. 12–22. Виды Tephritidae, детали строения.
12–17 – *Tephritis neesii*; 18–22 – *Urophora stylata*. 12, 19 – крыло самки; 13 – голова самца; 14 – брюшко самки; 15, 22 – гланс фаллуса; 16 – верхняя и предвершинная части акулеуса; 17, 21 – вершина акулеуса; 18 – самка, общий вид сбоку; 20 – акулеус.

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