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RESEARCH ARTICLE

New data on Tephritidae (Diptera) from Armenia and Russia

Новые данные о Tephritidae (Diptera) из Армении и России

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Abstract. New data on the morphology, distribution and host plants are provided for several species of tephritid flies. *Urophora xanthippe* (Munro, 1934) is recorded for the first time from Russia and *U. doganlari* Kütük, 2006, from Armenia; *U. kasachstanica* (Richter, 1964) is recorded for the first time for the Volgograd and Samara provinces of Russia. The details of the male genitalia not included in the descriptions of *U. doganlari*, *U. kasachstanica*, *U. terebrans* (Loew, 1844), and *U. xanthippe* are figured. *Centaurea polypodiifolia* Boiss. is recorded for the first time as a host plant of *U. doganlari*. *Jurinea squarrosa* Fisch. et C.A. Mey. and *Scorzonera rigida* Auch. ex DC. are new hosts of *Acanthiophilus helianthi* (Rossi, 1794) and *Trupanea stellata* (Fuessly, 1775), respectively. *Onopordum armenum* Grossh. is a new host plant of *Tephritis postica* (Loew, 1844).

Резюме. Приводятся новые данные по морфологии, распространению и кормовым растениям для нескольких видов мух-пестрокрылок (Tephritidae). *Urophora xanthippe* (Munro, 1934) и *U. doganlari* Kütük, 2006 впервые зарегистрированы в России и Армении соответственно; *U. kasachstanica* (Richter, 1964) впервые отмечен в Волгоградской и Самарской областях. Даны изображения деталей строения гениталий самцов *U. doganlari*, *U. kasachstanica*, *U. terebrans* (Loew, 1844) и *U. xanthippe*, которые не были представлены в описаниях этих видов. *Centaurea polypodiifolia* Boiss. впервые указывается в качестве кормового растения *U. doganlari*. *Jurinea squarrosa* Fisch. et C.A. Mey. и *Scorzonera rigida* Auch. ex DC. – новые кормовые растения для пестрокрылок *Acanthiophilus helianthi* (Rossi, 1794) и *Trupanea stellata* (Fuessly, 1775) соответственно. *Onopordum armenum* Grossh. впервые указывается как кормовое растение для *Tephritis postica* (Loew, 1844).

Key words: Armenia, Russia, diagnostic characters, host plants, Diptera, Tephritidae, new records

Ключевые слова: Армения, Россия, диагностические признаки, кормовые растения, Diptera, Tephritidae, новые находки

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Introduction

The present article continues the series of publications covering the tephritid flies of Armenia and Russia. Here, we report the new distributional data and new host records for several species belonging to two tribes, Myopitini and Tephritini, and provide original illustrations of each species. This article deals purely with flies whose larvae develop in the capitula of composites (Asteraceae). Host rearing in Armenia and Russia has yielded new information on several tephritid flies,

namely *Acanthiophilus helianthi* (Rossi, 1794), *Tephritis postica* (Loew 1844), *Urophora doganlari* Kütük, 2006, *U. kasachstanica* (Richter, 1964), and *U. xanthippe* (Munro, 1934). Original illustrations of host plant species are provided. Previous descriptions of *U. doganlari*, *U. kasachstanica*, *U. terebrans* (Loew, 1850), and *U. xanthippe* do not include the information on the shape of the glans of the phallus. Consequently, the phalli of these species are figured here.

Material and methods

The material was collected by the first author during 2014–2023, and stored in his 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). The morphological terminology used in this paper follows White et al. (2000).

Results

Order **Diptera**

Family **Tephritidae**

Tribe **Myopitini**

Urophora doganlari Kütük, 2006
(Figs 1–5)

Material examined. **Armenia**: *Aragatsotn Prov.*, nr. Artashavan Vill., disturbed steppe along highway, 1 female and 1 male reared on 1–2.IV.2020 from capitula of *Centaurea polypodiifolia*, collected on 3 and 11.VIII.2019; *Ararat Prov.*, Urts Mountain Range, nr. Lanjar, mountain steppe, 1 male reared on 19.IV.2022 from capitulum of *C. polypodiifolia* collected on 25.VII.2021.

Comments. Originally described from Turkey (Kütük, 2006), *U. doganlari* is recorded here from Armenia for the first time. *Centaurea polypodiifolia* Boiss. is established here as a new host for this species. The host plant is illustrated in Evstigneev & Boyko (2024: fig. 44); it is also the host of *Terellia freidbergi* Korneyev, 2013 (Evstigneev & Boyko, 2024). The glans of the phallus of *U. doganlari* is illustrated here for the first time (Fig. 5).

Distribution. Turkey (Kütük, 2006), Armenia (new record).

Urophora kasachstanica (Richter, 1964)
(Figs 6–13)

Material examined. **Russia**: *Volgograd Prov.*: Surovikino Distr., disturbed steppe along highway between Surovikino and Serafimovich, 3 females and 2 males reared on 14.IX–31.X.2014 from capitula of *Rhaponticum repens* collected on 10.VII.2014; Pallasovka Distr., Elton Vill., 1 male reared on 25.III.2017 from capitula of *R. repens*, collected on 21.VIII.2016; *Samara Prov.*, Bezenchuk Distr., near Zvezda Vill., 1 female and 1 male reared on 25–28.IX.2020 from capitula of *R. repens* collected on 30.VIII.2020.

Comments. *Urophora kasachstanica* was originally described from Kazakhstan and later found also in Eastern Europe and Middle Asia (see below). This is a species associated with *Rhaponticum repens* (L.) Hidalgo [syn. *Acroptilon repens* (L.) DC.], which is an extremely noxious weed. Host plant is illustrated in Fig. 36 (see Addenda). It forms dense infestations in cultivated fields, pastures and ruderal areas.

The glans of the phallus, hypandrium and aedeagal apodeme of *U. kasachstanica* (Figs 8, 9) are illustrated here for the first time. The extremes of shape of the aculeus apex are as in Figs 12 and 13.

Distribution. Kazakhstan (Richter, 1964, 1965; Korneyev & White, 1993), Ukraine (Kameneva & Korneyev, 1984), Kyrgyzstan (Korneyev & White, 1999), Uzbekistan, Tajikistan (Korneyev & White, 1993), European Russia (Ovchinnikova, 2004: Astrakhan and Saratov provinces; this study: Volgograd and Samara provinces), and Iran (Mohamadzade Namin & Nozari, 2015).

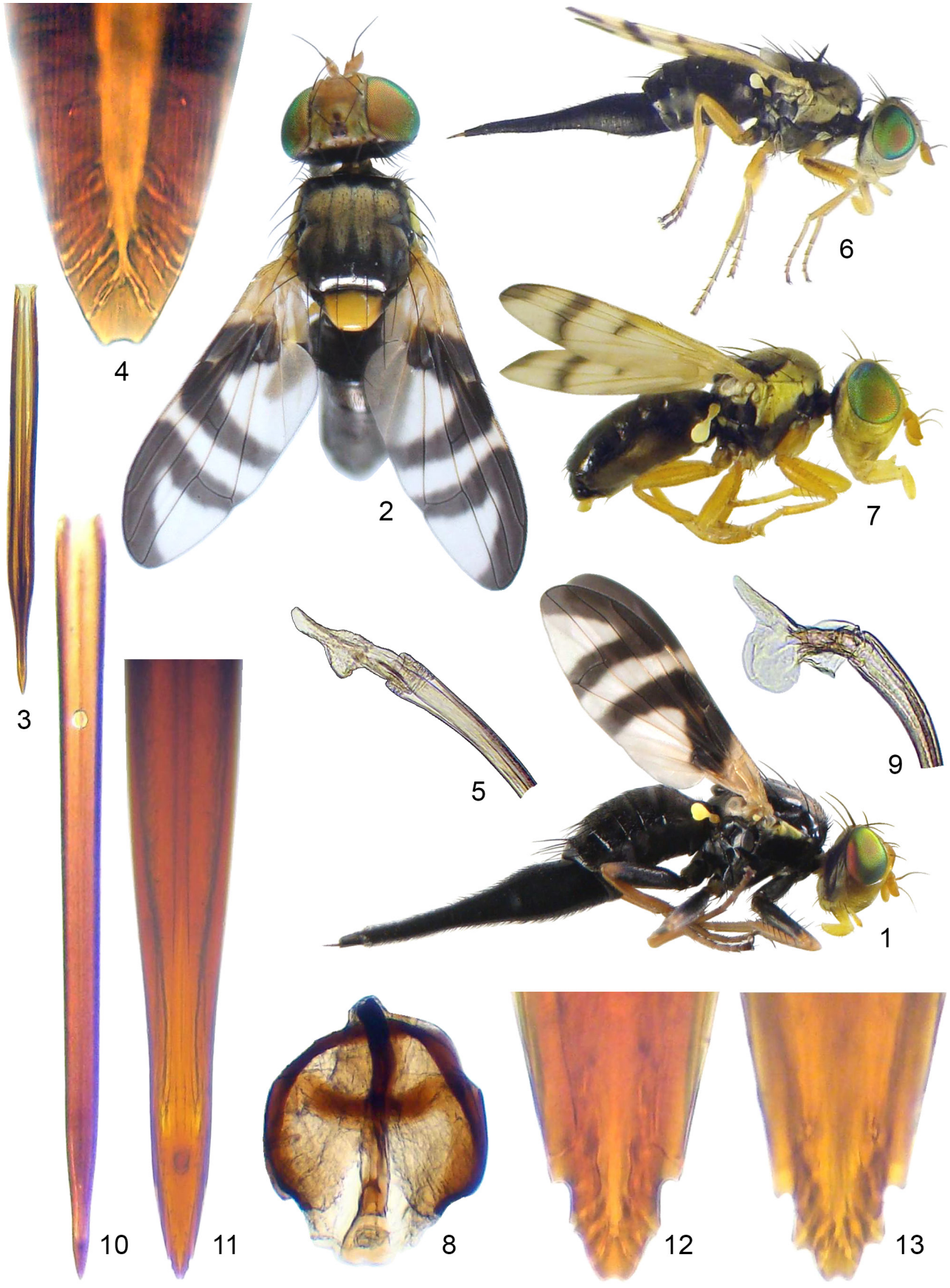
Urophora terebrans (Loew, 1844)
(Figs 14–18)

Material examined. **Armenia**, *Gegharkunik Prov.*, western coast of Sevan Lake, nr. Noratus Vill., 3 female and 2 males reared on 29.VII.2021 from *Onopordum acanthium* collected on 25.VII.2021.

Comments. The glans of the phallus of *U. terebrans* is illustrated for the first time (Fig. 16).

Urophora xanthippe (Munro, 1934)
(Figs 19–23)

Material examined. **Russia**, *Volgograd Prov.*, Pallasovka Distr., Elton Vill., 3 females and 3 males reared on 13.III.2017 from capitula of *Rhaponticum repens*, collected on 21–25.VIII.2016.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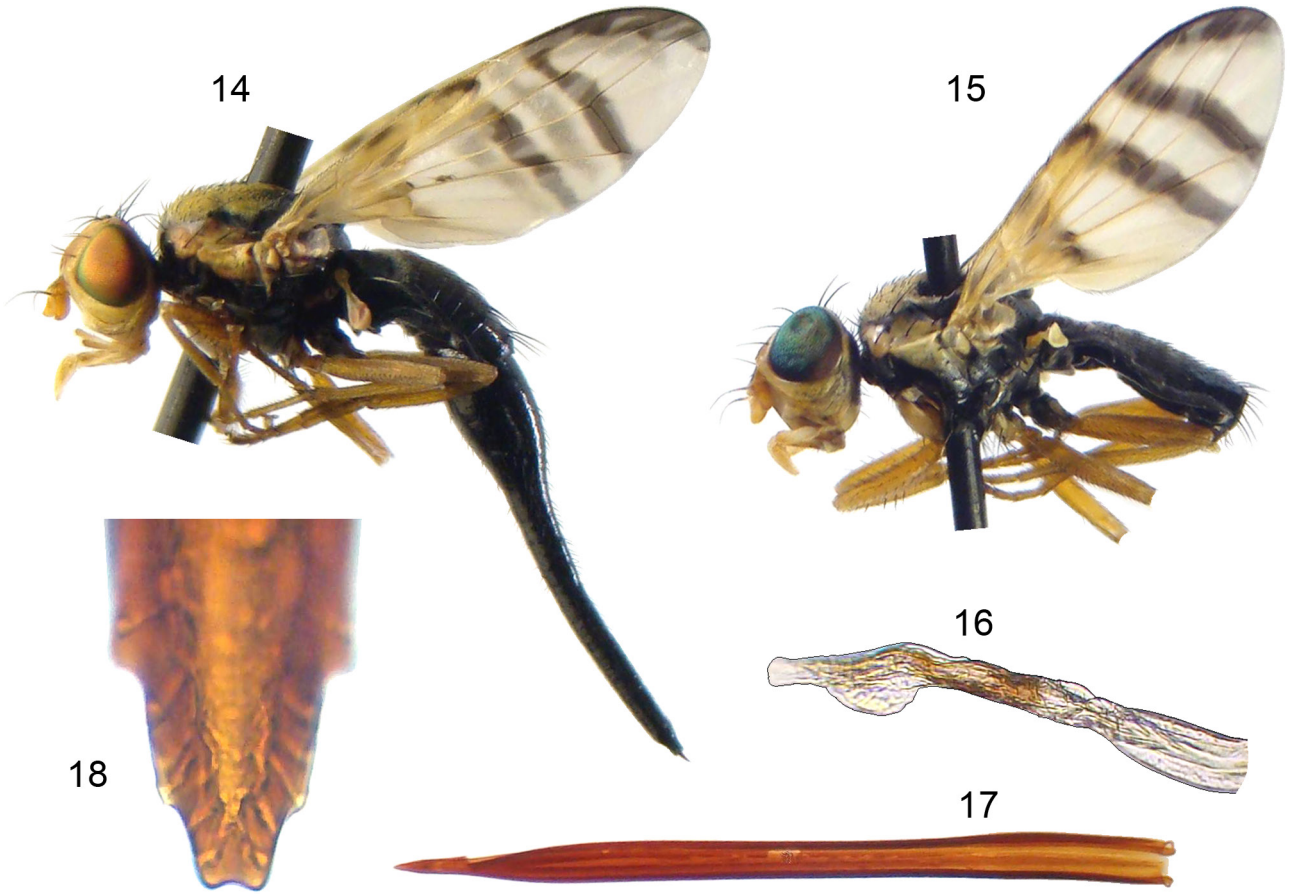


Figs 14–18. *Urophora terebrans* (Loew, 1844). **14**, female habitus (in lateral view); **15**, male habitus (in lateral view); **16**, glans of phallus; **17**, aculeus; **18**, apex of aculeus.

Comments. *Urophora xanthippe* is another species associated with the capitula of *Rhaponticum repens*. This species is characterised by hyaline wings, in which it differs from *U. kasachstanica*. The glans of the phallus of *U. xanthippe* (Fig. 23) is illustrated for the first time.

Distribution. Turkmenistan (Munro, 1934), Kazakhstan (Richter, 1965; Ivannikov, 1977; Korneyev & White, 1993; Korneyev & Merz, 1998), Ukraine (Kameneva & Korneyev, 1984), Uzbekistan, Tadzhikistan, Afghanistan (Korneyev & White, 1993), and Iran (Mohamadzade Namin et al., 2010; Mohamadzade Namin & Nozari, 2015). Here, the species is recorded from European Russia for the first time.

Tribe **Tephritini**

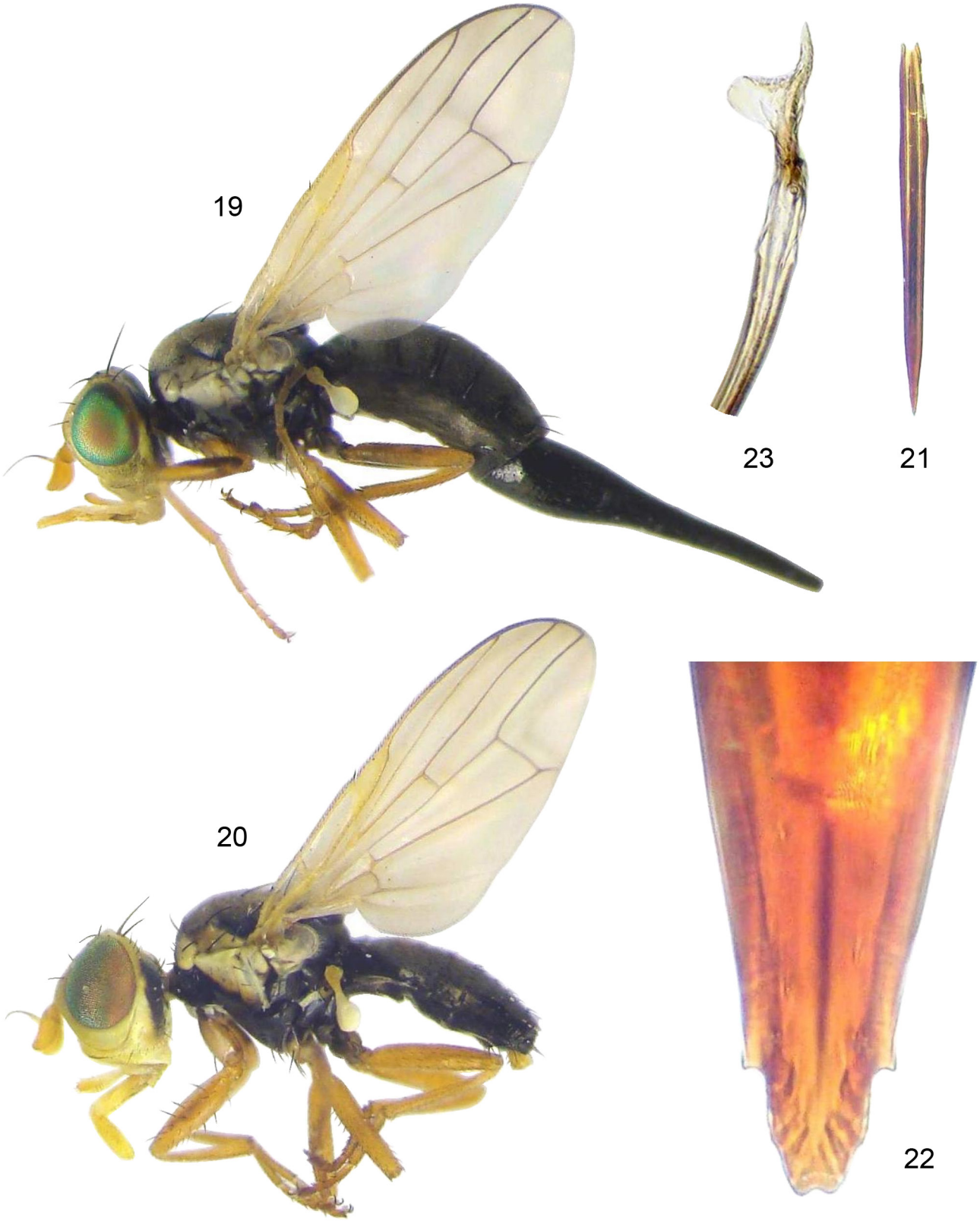
Acanthiophilus helianthi (Rossi, 1794)
(Fig. 24)

Material examined. **Armenia**, *Shirak Prov.*, nr. Krashen Vill., slope of mountain, 1 female and 2 males reared on 31.VII.2023 from capitula of *Jurinea squarrosa*, collected on 23.VII.2023.

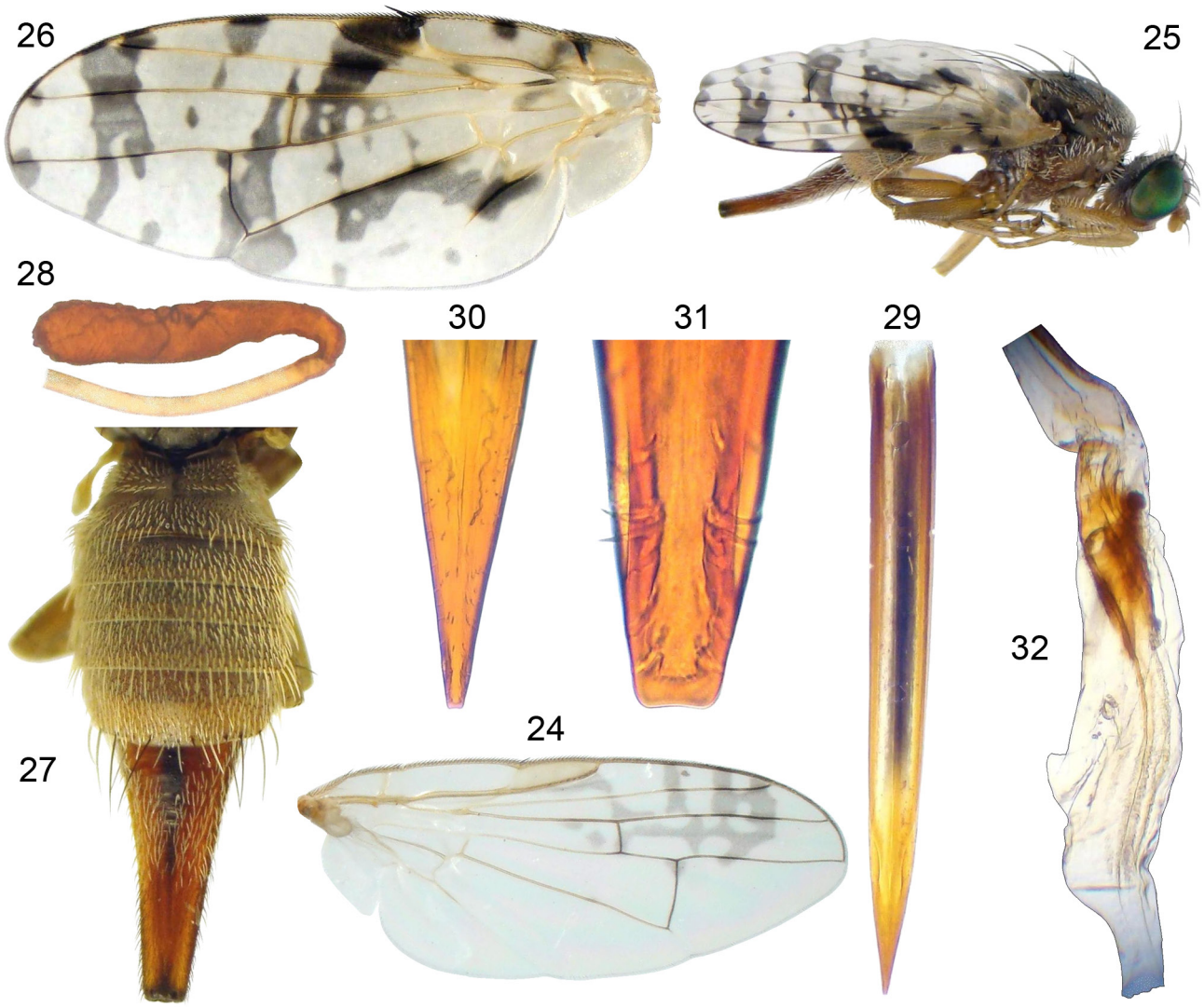
Comments. A wing of male *A. helianthi* reared from the capitula of *Jurinea squarrosa* Fisch. et C.A. Mey. is illustrated in Fig. 24. This species has not been previously recorded as a host plant. Host plant is illustrated in Fig. 37 (see Addenda).

Distribution. Eurasia and North Africa to Ethiopia (Morgulis et al., 2015).

Figs 1–13. *Urophora doganlari* Kütük, 2006 (1–5) and *U. kasachstanica* (Richter, 1964) (6–13). **1**, **6**, female habitus (in lateral view); **2**, male habitus (in dorsal view); **3**, **10**, aculeus; **4**, apex of aculeus; **5**, **9**, glans of phallus; **7**, male habitus (in lateral view); **8**, hypandrium and aedeagal apodeme; **11**, distal part of aculeus; **12**, **13**, apex of aculeus (extremes of shape).



Figs 19–23. *Urophora xanthippe* (Munro, 1934). **19**, female habitus (in lateral view); **20**, male habitus (in lateral view); **21**, aculeus; **22**, apex of aculeus; **23**, glans of phallus.



Figs 24–32. *Acanthiophilus helianthi* (Rossi, 1794) (24) and *Tephritis postica* (Loew, 1844) (25–32). **24**, male wing; **25**, female habitus (in lateral view); **26**, female wing; **27**, female abdomen (in dorsal view); **28**, spermatheca; **29**, aculeus; **30**, distal part of aculeus; **31**, apex of aculeus; **32**, glans of phallus.

Tephritis postica (Loew, 1844)
(Figs 25–32)

Material examined. **Armenia**: *Shirak Prov.*, nr. Aniavan Vill., 1 female and 2 males reared on 17.VII.2018 from capitula of *Onopordum acanthium* collected on 10.VII.2018; *Kotayk Prov.*, Vohchaberd Vill., 1 female reared on 19.VII.2023 from capitulum of *O. armenum* collected on 13.VII.2023.

Comments. *Tephritis postica* is widespread in Europe and Asia. Its larvae develop in the capitula of various species of the genus *Onopordum* L. In Armenia, larvae of this species live in the capitula of *O. acanthium* L. and *O. armenum* Grossh.; *O. acanthium* has already been mentioned as a host plant for *T. postica* (Frauenfeld, 1863), whereas *O. armenum* is recorded for the first time. The morphological details of *T. postica* reared from *O. acanthium* are illustrated in Figs 25–32; *O. armenum* is illustrated in Fig. 38 (see Addenda).

Trupanea stellata (Fuessly, 1775)
(Figs 33–35)

Material examined. **Armenia**, *Vayots Dzor Prov.*, nr. Martiros Vill., mountain steppe, 1 female reared on 27.VII.2022 from capitulum of *Scorzonera rigida* Auch. ex DC. collected on 23.VII.2022.

Figs 33–35. *Trupanea stellata* (Fuessly, 1775). **33**, distal part of aculeus; **34**, apex of aculeus; **35**, female wing.

Comments. *Trupanea stellata* is a stellate-winged species whose larvae develop in the capitula of a wide host range of composites (Asteraceae). *Scorzonera rigida* Auch. ex DC. is recorded here for the first time as its host plant. The morphological details of *T. stellata* are illustrated in Figs 33–35; *S. rigida* is illustrated in Fig. 39 (see Addenda).

Distribution. Transpalaearctic species (Merz, 1994).

Addenda

Electronic supplementary material. **Figs 36–39.** Host plants of Tephritidae from Russia and Armenia. **36**, *Rhaponticum repens* (Russia, Volgograd Province, Elton Village, 21.VIII.2016); **37**, *Jurinea squarrosa* (Armenia, Shirak Province, near Krashen Village, 23.VII.2023); **38**, *Onopordum armenum* (Armenia, Vayots Dzor Province, Mozrov Village, 18.VII.2018); **39**, *Scorzonera rigida* (Armenia, Vayots Dzor Province, near Martiros Village, 23.VII.2022). Photos by D. Evstigneev.

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