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SHORT COMMUNICATION

First records of two species of *Tephritis* (Diptera: Tephritidae) from Armenia, with notes on other species of the genus

Находки двух видов рода *Tephritis* (Diptera: Tephritidae) в Армении с заметками о других видах рода

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Abstract. *Tephritis ruralis* (Loew, 1844) and *T. sahandi* Mohamadzade, Korneyev et Khaghaninia, 2011 are recorded from Armenia for the first time. The morphological details of five species of *Tephritis* Latreille, 1804 [*T. araileri* Evstigneev, 2020, *T. conaraileri* Evstigneev, 2020, *T. ruralis*, *T. sahandi*, and *T. truncata* (Loew, 1844)] are illustrated in colour photos. It is shown that some Armenian specimens of *T. ruralis* have two hyaline spots in the pterostigma (as does *T. truncata*), unlike the European specimens of *T. ruralis*. The glans of the phallus of *T. truncata* is illustrated for the first time. *Scorzonera rigida* Auch. ex DC. is recorded for the first time as a host plant of *T. araileri*.

Резюме. *Tephritis ruralis* (Loew, 1844) и *T. sahandi* Mohamadzade, Korneyev et Khaghaninia, 2011 впервые найдены в Армении. Детали строения пяти видов рода *Tephritis* Latreille, 1804 – *T. araileri* Evstigneev, 2020, *T. conaraileri* Evstigneev, 2020, *T. ruralis*, *T. sahandi* и *T. truncata* (Loew, 1844) – проиллюстрированы цветными фотографиями. Показано, что у некоторых экземпляров *T. ruralis* из Армении есть два прозрачных пятна в птеростигме подобно *T. truncata* и в отличие от европейских экземпляров *T. ruralis*. Впервые приведено изображение гланса фаллуса *T. truncata*. Козелец *Scorzonera rigida* Auch. ex DC. впервые приводится в качестве кормового растения *T. araileri*.

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

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

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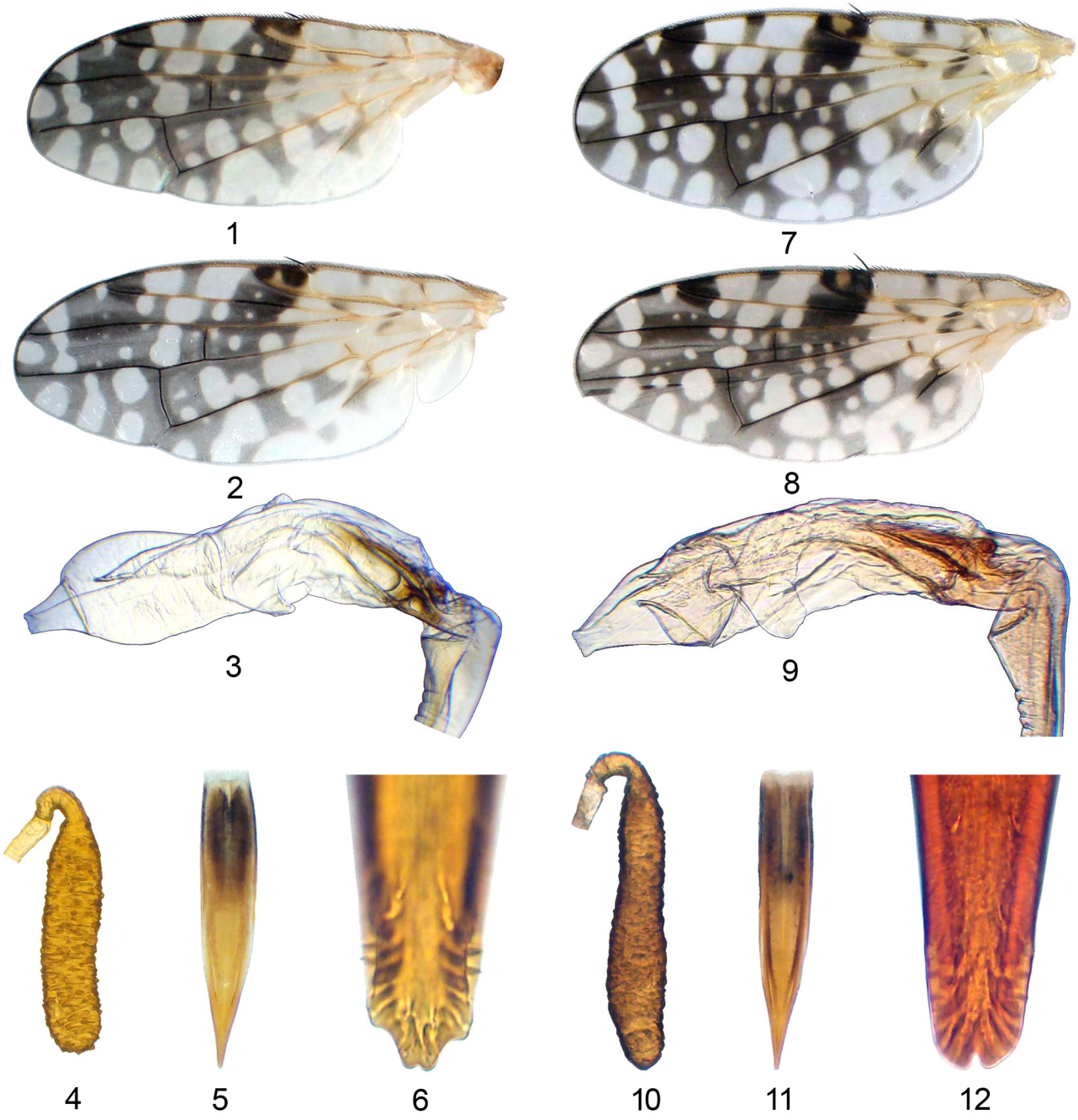
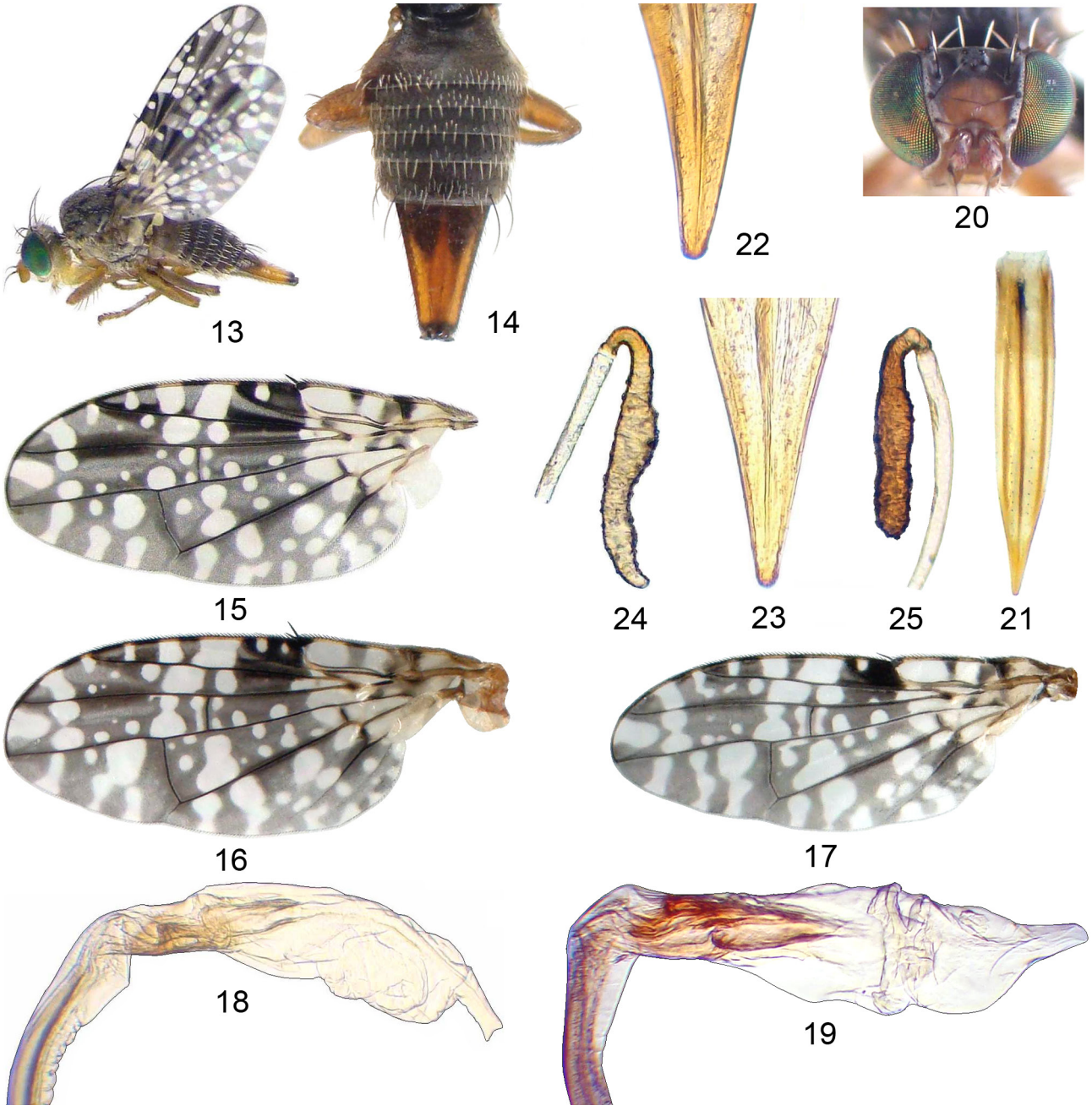
This paper continues the series of publications on the tephritid fauna in the Caucasus and Transcaucasia (Evstigneev & S. Korneyev, 2018; S. Korneyev & Evstigneev, 2019; Evstigneev, 2020a, 2020b, 2022, 2023; Evstigneev & Glukhova, 2020, 2021, 2022; Evstigneev & Przhiboro, 2021). During studies on the tephritid fauna of Armenia, two species of *Tephritis* Latreille, 1804 previously unknown from this country were discovered, namely *T. ruralis* (Loew, 1844) and *T. sahandi* Mohamadzade, Korneyev et Khaghaninia, 2011. In addition, we illustrate and discuss



Figs 1–12. *Tephritis araileri* Evstigneev, 2020 (1–6) and *T. conaraileri* Evstigneev, 2020 (7–12). **1**, female wing; **2**, male wing; **3**, glans of phallus; **4**, spermatheca; **5**, aculeus; **6**, apex of aculeus; **7**, female wing; **8**, male wing; **9**, glans of phallus; **10**, spermatheca; **11**, aculeus; **12**, aculeus tip. Female reared from *Scorzonera rigida* (1, 4–6); male reared from *S. latifolia* (2, 3); female reared from *S. latifolia* (7, 10–12); male reared from *S. latifolia* (8, 9).

the morphological details of these and three other species of *Tephritis* [*T. araileri* Evstigneev, 2020, *T. conaraileri* Evstigneev, 2020 and *T. truncata* (Loew, 1844)], and provide the new data on host plants of *Tephritis*.

The material was collected in 2018–2022 by the first author and stored in his private collection. The methods generally follow Evstigneev & Glukhova (2020), Evstigneev (2021), and Evstigneev & Przhiboro (2021).



Figs 13–25. *Tephritis ruralis* (Loew, 1844). **13**, female habitus (lateral view); **14**, female abdomen (dorsal view); **15**, **16**, female wing; **17**, male wing; **18**, **19**, glans of phallus; **20**, female head (dorsal view); **21**, aculeus; **22**, **23**, aculeus tip; **24**, **25**, spermathecae. Female from Ul'yanovsk Province, European Russia (13, 15, 23, 24); male from the same province (18); female from Armenia (14, 16, 20–22, 25); male from Armenia (17, 19).

Tephritis araileri Evstigneev, 2020
(Figs 1–6)

Material examined. **Armenia**, *Vayots Dzor Prov.*, nr. Martiros Vill., mountain steppe, 1 female reared on 31.VII.2022 from capitulum of *Scorzonera rigida* collected on 23.VII.2022; *Aragatsotn Prov.*: Mt. Ara (= Arailer), mountain side facing Egward Town, mountain meadow, 1 female reared on 1.VIII.2018 from capitulum of *Scorzonera latifolia* collected on 31.VII.2018; same locality and habitat, 6 females and 4 males reared on 17–21.VIII.2018 from capitula of *S. latifolia* collected on 24–31.VII.2018; Mt. Ara, nr. Tsaghkevank Monastery, mountain meadow, 11 fe-

Figs 26–31. *Tephritis sahandi* Mohamadzade, Korneyev et Khaghaninia, 2011. **26**, male wing; **27**, epandrium; **28**, spermatheca; **29**, aculeus; **30**, aculeus tip; **31**, glans of phallus.

males and 7 males reared on 26–31.VII.2019 from capitula of *S. latifolia* collected on 18.VII.2019.

Comments. *Scorzonera rigida* Auch. ex DC. is recorded for the first time as a host plant of *T. araileri*. Previously, *S. latifolia* (Fisch. et C.A. Mey.) DC. was recorded as a host plant of this species (Evstigneev, 2020b). Both host plants grow together near the village of Martiros. Larvae develop in capitula of *S. latifolia* along with *T. conaraileri* (see below).

Tephritis araileri differs from *T. conaraileri* in minor details of the wing pattern (small spot in anal lobe in *T. araileri* and distinct spot in the shape of a ring or semi-ring in *T. conaraileri*) and the shape of apex of the aculeus (apex of the aculeus with distinct steps in *T. araileri* and without steps in *T. conaraileri*). Thus, two species display small differences in wing markings and strong differences in the shape of the female genitalia. The shape of the aculeus is a major distinguishing character between the two species.

Distribution. Armenia: Aragatsotn Province (Evstigneev, 2020b) and Vayots Dzor Province (this paper).

Tephritis conaraileri Evstigneev, 2020
(Figs 7–12)

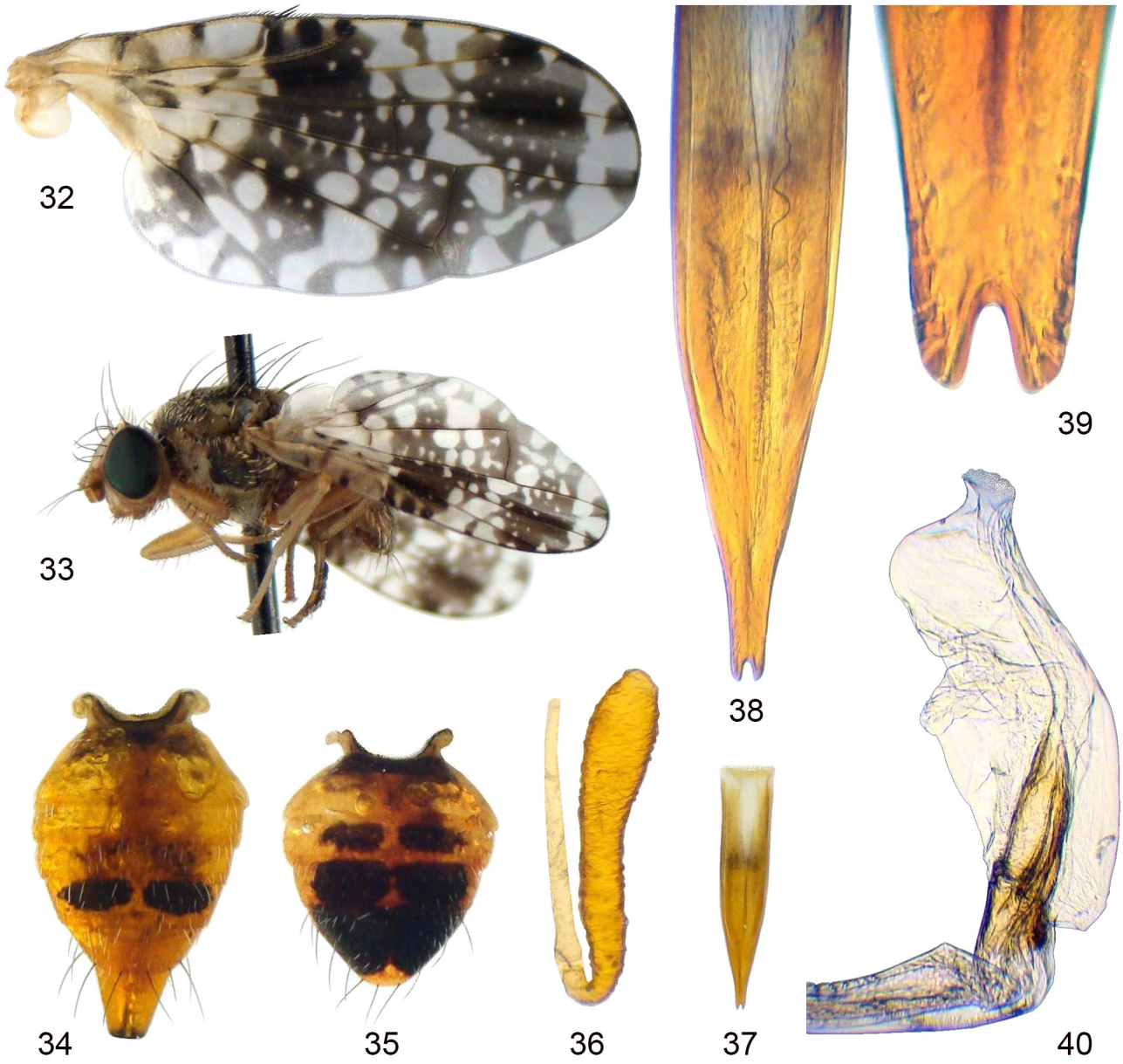
Material examined. **Armenia**, *Aragatsotn Prov.*, Mt. Ara (= Arailer): nr. Tsaghkevank Monastery, mountain meadow, 1 female reared on 26.VII.2019 from capitulum of *Scorzonera latifolia* collected on 18.VII.2019; same locality, 5 females and 6 males reared on 26–31.VII.2019 from capitula of *S. latifolia* collected on 18.VII.2019; mountain side facing Egward Town, mountain meadow, 3 females and 3 males reared on 26.VII–1.VIII.2018 from capitula of *S. latifolia* collected on 24.VII.2018.

Tephritis ruralis (Loew, 1844)
(Figs 13–25)

Material examined. **Armenia**, *Gegharkunik Prov.*, Jil Vill., mountain meadow, 3 females and 3 males reared on 12–13.VII.2022 from capitula of *Pilosella* sp. collected on 10.VII.2022. **Russia**, *Ul'yanovsk Prov.*, Mayna Distr., nr. Abramovka Vill., 1 female and 1 male reared on 20.VI.2016 from capitula of *P. officinarum* collected on 16.VI.2016.

Comments. This species is recorded from Armenia for the first time. Larvae of *T. ruralis* develop in capitula of the genus *Pilosella*: *P. officinarum* F.W. Schultz et Sch. Bip. (as *Hieracium pilosella* L.) (Hendel, 1927; Mihályi, 1960; White, 1988; Merz, 1994; Baugnée, 2006; Evstigneev, 2016) and *P. lactucella* (Wallr.) P.D. Sell et C. West (as *Hieracium lactucella* Wallr.) (Merz, 1994).

Some Armenian specimens of *T. ruralis* have two hyaline spots in the pterostigma (Fig. 16), as does *T. truncata* (Loew, 1844) (see below). The specimens of *T. ruralis* from European Russia



Figs 32–40. *Tephritis truncata* (Loew, 1844). **32**, female wing; **33**, male habitus (lateral view); **34**, female abdomen (dorsal view, in glycerin solution); **35**, male abdomen (dorsal view, in glycerin solution); **36**, spermatheca; **37**, aculeus; **38**, medium and distal parts of aculeus; **39**, aculeus tip; **40**, glans of phallus.

(Ul'yanovsk Province) display a classic wing pattern (Figs 13, 15).

Distribution. Armenia (new record), Georgia (Korneyev, 2016), Russia (Rozkov, 1956; Stackelberg, 1958), Ukraine (Korneyev, 1985), throughout Europe (Merz, 1994). Korneyev (2016) reported this species from Iran, but it was not listed in the checklist of tephritid flies of Iran published later (Mohamadzade Namin & Korneyev, 2018).

Tephritis sahandi Mohamadzade, Korneyev et Khaghaninia, 2011
(Figs 26–31)

Material examined. **Armenia**: *Gegharkunik Prov.*, Geghhovit Vill., 2 males reared on VII.2021 from capitula of *Tanacetum* sp. collected on 25.VII.2021; *Vayots Dzor Prov.*, nr. Martiros Vill., 1 female and 1 male reared on 21–23.VII.2022 from capitula of *Tanacetum* sp. collected on 9.VII.2022.

Comment. Previously *T. sahandi* was not recorded from Armenia, but it was known from bordering Iran.

Distribution. Iran (Khaghaninia et al., 2011; Korneyev, 2016), Armenia (new record).

Tephritis truncata (Loew, 1844)
(Figs 32–40)

Material examined. **Armenia**, *Shirak Prov*., nr. Bagravan Vill., mountain steppe, 2 females and 6 males reared on 14.VII.2018 from capitula of *Leontodon asperrimus* (Willd.) Endl. collected 10.VII.2018.

Comment. The glans of the phallus of *T. truncata* (Fig. 40) is illustrated for the first time.

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References

Baugnée J-Y. 2006. Contribution à la connaissance des Tephritidae de Belgique (Diptera: Brachycera). *Notes fauniques de Gembloux*, **59**(2): 63–113.

Evstigneev D.A. 2016. Tephritid flies of the "higher tephritines" group (Diptera, Tephritidae, Tephritinae) of Ul'yanovsk and Samara provinces (Russia). *Ukrainska Entomofaunistyka*, **7**(1): 1–29. (In Russian).

Evstigneev D.A. 2020a. Description of males and redescription of females of Terellia babaki V. Korneyev (Diptera: Tephritidae) on specimens from Armenia. *In*: **Evstigneev D.A.** (Ed.). *Psikhologicheskie i estestvennonauchnye issledovaniya v Ul'yanovskom institute grazhdanskoy aviatsii: sbornik nauchnykh statey* [Psychological and natural science research in the Ul'yanovsk Institute of Civil Aviation: collection of scientific papers]: 20–29. Ul'yanovsk: Publisher Alexander Vasilievich Kachalin. (In Russian).

Evstigneev D.A. 2020b. Tephritis araileri sp. nov. and Tephritis conaraileri sp. nov. – new species of tephritid flies (Diptera: Tephritidae) from Armenia. *In*: **Evstigneev D.A.** (Ed.). *Psikhologicheskie i estestvennonauchnye issledovaniya v Ul'yanovskom institute grazhdanskoy aviatsii: sbornik nauchnykh statey* [Psychological and natural science research in the Ul'yanovsk Institute of Civil Aviation: collection of scientific papers]: 30–42. Ul'yanovsk: Publisher Alexander Vasilievich Kachalin. (In Russian).

Evstigneev D.A. 2021. Terellia arailerica sp. n. – a new species of tephritid flies (Diptera: Tephritidae) from Armenia. *Caucasian entomological Bulletin*, **17**(1): 105–108. (In Russian). https://doi.org/10.23885/181433262021171-105108

Evstigneev D.A. 2022. Terellia hajastanica, a new species of tephritid flies (Diptera: Tephritidae) associated with Centaurea pseudoscabiosa subsp. glehnii (Asteraceae) in Armenia. *Zoosystematica Rossica*, **31**(2): 258–263. https://doi.org/10.31610/zsr/2022.31.2.258

Evstigneev D.A. 2023. A second species of the genus Urophora (Diptera: Tephritidae) attacking capitula of the genus Psephellus (Asteraceae). *Zoosystematica Rossica*, **32**(1): 16–22. https://doi.org/10.31610/zsr/2023.32.1.16

Evstigneev D.A. & Glukhova N.V. 2020. First records of two species of Tephritidae and one species of Platystomatidae (Diptera) from Transcaucasia. *Zoosystematica Rossica*, **29**(1): 155–161. https://doi.org/10.31610/zsr/2020.29.1.155

Evstigneev D.A. & Glukhova N.V. 2021. New records of Tephritidae (Diptera) from Armenia and Russia, with new data on the host plants. *Caucasian entomological Bulletin*, **17**(2): 341–344. (In Russian). https://doi.org/10.23885/181433262021172-341344

Evstigneev D.A. & Glukhova N.V. 2022. Tephritid flies (Diptera: Tephritidae) of the Caucasus and Transcaucasia: new records and new host plants. *Zoosystematica Rossica*, **31**(1): 118–129. https://doi.org/10.31610/zsr/2022.31.1.118

Evstigneev D.A. & Korneyev S.V. 2018. New and little-known species of the genus Tephritis Latreille (Diptera, Tephritidae) from Kabardino-Balkaria and Adygea (Russia). *Ukrainska Entomofaunistyka*, **9**(4): 5–15.

Evstigneev D.A. & Przhiboro A.A. 2021. New records of flies of the genus Tephritis (Diptera: Tephritidae) from the Caucasus and Transcaucasia, with notes on other tephritid species. *Zoosystematica Rossica*, **30**(1): 13–24. https://doi.org/10.31610/zsr/2021.30.1.13

Hendel F. 1927. 49. Trypetidae. *In*: **Lindner E.** (Ed.). *Die Fliegen der paläarktischen Region*, **5**: 1–221. Stuttgart: E. Schweizerbart'sche Verlagsbuchhandlung.

Khaghaninia S., Zarghani E., Mohamadzade Namin S. & Korneyev V.A. 2011. A new species of Tephritis Latreille (Diptera, Tephritidae) with an unusual wing pattern from Iran and its taxonomic implications. *Zootaxa*, **3047**(1): 54–62. https://doi.org/10.11646/zootaxa.3047.1.3

Korneyev S.V. 2016. *Reviziya rodu Tephritis (Diptera, Tephritidae) Zakhidnoy Palearktyky* [A revision of the genus Tephritis (Diptera, Tephritidae) of the

Western Palaearctic]. Candidate of sciences (biology) dissertation. Kyiv: I.I. Schmalhausen Institute of Zoology of the National Academy of Sciences of Ukraine. 387 p. (In Ukrainian).

Korneyev S.V. & Evstigneev D.A. 2019. Review of the Tephritis hyoscyami–conura group of species (Diptera: Tephritidae) with description of a new species. *Annales zoologici*, **69**(4): 719–736. https://doi.org/10.3161/00034541ANZ2019.69.4.007

Korneyev V.A. 1985. *Mukhi-pestrokrylki (Diptera, Tephritidae) Srednego Pridneprov'ya (s obzorom sistemy semeystva v tselom)* [Tephritid flies (Diptera, Tephritidae) of the Middle Dnieper (with a review of the family classification in general)]. Candidate of sciences (biology) dissertation. Kyiv: Kyiv Order of Lenin State University named after T.G. Shevchenko. 470 p. (In Russian).

Merz B. 1994. Diptera Tephritidae. *Insecta Helvetica*, *Fauna*, **10**: 1–198. Genève: Schweizerischen entomologischen Gesellschaft.

Mihályi F. 1960. Fúrólegyek Trypetidae. *Magyarország Állatvilága*, **15**(3), *Diptera II* (*Fauna Hungariae*, **56**): 1–76. Budapest: Akadémiai Kiadó. (In Hungarian).

Mohamadzade Namin S. & Korneyev V.A. 2018. An annotated checklist of fruit flies (Diptera: Tephritidae) of Iran. *Zootaxa*, **4369**(3): 377–405. https://doi.org/10.11646/zootaxa.4369.3.5

Rozkov A.S. 1956. Materials on the fauna and ecology of fruit flies (Diptera, Trypetidae) of Moscow Province. *Trudy Vsesoyuznogo entomologicheskogo obshchestva*, **45**: 193–217. (In Russian).

Stackelberg A.A. 1958. Materials on the fauna of Diptera of Leningrad Province. III. Diptera Acalyptrata. Part 1. *Trudy Zoologicheskogo instituta Akademii nauk SSSR*, **24**: 103–191. (In Russian).

White I.M. 1988. Tephritid flies. Diptera: Tephritidae. *Handbooks for the Identification of British Insects*, **10**(5a): 1–134. London: Royal Entomological Society.

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