


A second species of the genus *Urophora* (Diptera: Tephritidae) attacking capitula of the genus *Psephellus* (Asteraceae)

Второй вид рода *Urophora* (Diptera: Tephritidae), заселяющий соцветия рода *Psephellus* (Asteraceae)

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Abstract. *Urophora sevanensis* sp. nov. is described from Armenia and a key is provided for separation of the new species from *U. aprica* (Fallén, 1820) and *U. trinervii* Korneyev et White, 1996. The new species was reared from capitula of *Psephellus* sp. in Armenia together with the already known *Terellia ermolenkoi* Korneyev, 1985. Along with *U. trinervii* Korneyev et White, 1996, this is the second species of the genus *Urophora* Robineau-Desvoidy, 1830 known to attack capitula of the genus *Psephellus* Cassini. The new species is characterised by separated subbasal and discal crossbands, separated discal and preapical crossbands, anteriorly connected preapical and apical crossbands and the aculeus with distinct preapical primary and small secondary steps. The morphological details of *T. ermolenkoi* in colour photos are also presented.

Резюме. Новый вид мух-пестрокрылок *Urophora sevanensis* sp. nov. описан из Армении. Дан ключ для отделения нового вида от *U. aprica* (Fallén, 1820) и *U. trinervii* Korneyev et White, 1996. Новый вид был выведен из соцветий *Psephellus* sp. вместе с уже известной пестрокрылкой *Terellia ermolenkoi* Korneyev, 1985. Это второй после *U. trinervii* Korneyev et White, 1996 вид рода *Urophora* Robineau-Desvoidy, 1830, который заселяет соцветия рода *Psephellus* Cassini. Новый вид характеризуется четырьмя хорошо выраженными перевязями: разделёнными между собой суббазальной и дискальной перевязями, не соединяющимися дискальной и преапикальной перевязями, слитыми возле переднего края крыла преапикальной и апикальной перевязями, а также выраженными первичными и небольшими вторичными предвершинными уступами акулеуса. Также представлены цветные иллюстрации деталей морфологии *T. ermolenkoi*.

Key words: Armenia, host plants, Asteraceae, Tephritidae, *Urophora*, new species

Ключевые слова: Армения, кормовые растения, Asteraceae, Tephritidae, *Urophora*, новый вид

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Introduction

This paper continues the series of publications on the tephritid flies of the Caucasus and Transcaucasia (Evstigneev & S. Korneyev, 2018; S. Korneyev &

Evstigneev, 2019; Evstigneev, 2020a, 2020b, 2021, 2022; Evstigneev & Glukhova, 2020, 2021, 2022; Evstigneev & Przhiboro, 2021). During studies on the tephritid fauna of Armenia, one previously

undescribed species was discovered. The species described below as new was reared from capitula of *Psephellus* sp. (Asteraceae). The new species belongs to the genus *Urophora* Robineau-Desvoidy, 1830. All *Urophora* species with known biology develop in various genera of the family Asteraceae (White & V. Korneyev, 1989; Merz & White, 1991; V. Korneyev & White, 1999), including the genus *Psephellus* Cassini, 1826. *Urophora trinervii* Korneyev et White, 1996 is the only *Urophora* species previously reported to attack the genus *Psephellus*.

Material and methods

The material was collected in 2021 and stored in the private collection of the author. Full description of methods is presented in our previous articles (Evstigneev & Glukhova, 2020; Evstigneev, 2021; Evstigneev & Przhiboro, 2021).

The holotype is deposited at the Zoological Institute of the Russian Academy of Sciences (St Petersburg, Russia). The paratypes are deposited in the private collection of the author. The morphological terminology used in this paper follows White et al. (1999).

Results

Family Tephritidae

Subfamily Myopitinae

Tribe Myopitini

Urophora Robineau-Desvoidy, 1830

Urophora sevanensis sp. nov.

(Figs 1–9)

Holotype. Female, **Armenia**, *Gegharkunik Prov.*, western coast of Sevan Lake, between Noratus Vill. and Eranos Vill., among rocks, reared on 11.IV.2022 from capitulum of *Psephellus* sp. collected on 25.VII.2021, D. Evstigneev leg.

Paratypes. 3 males and 1 female, with same data as in holotype.

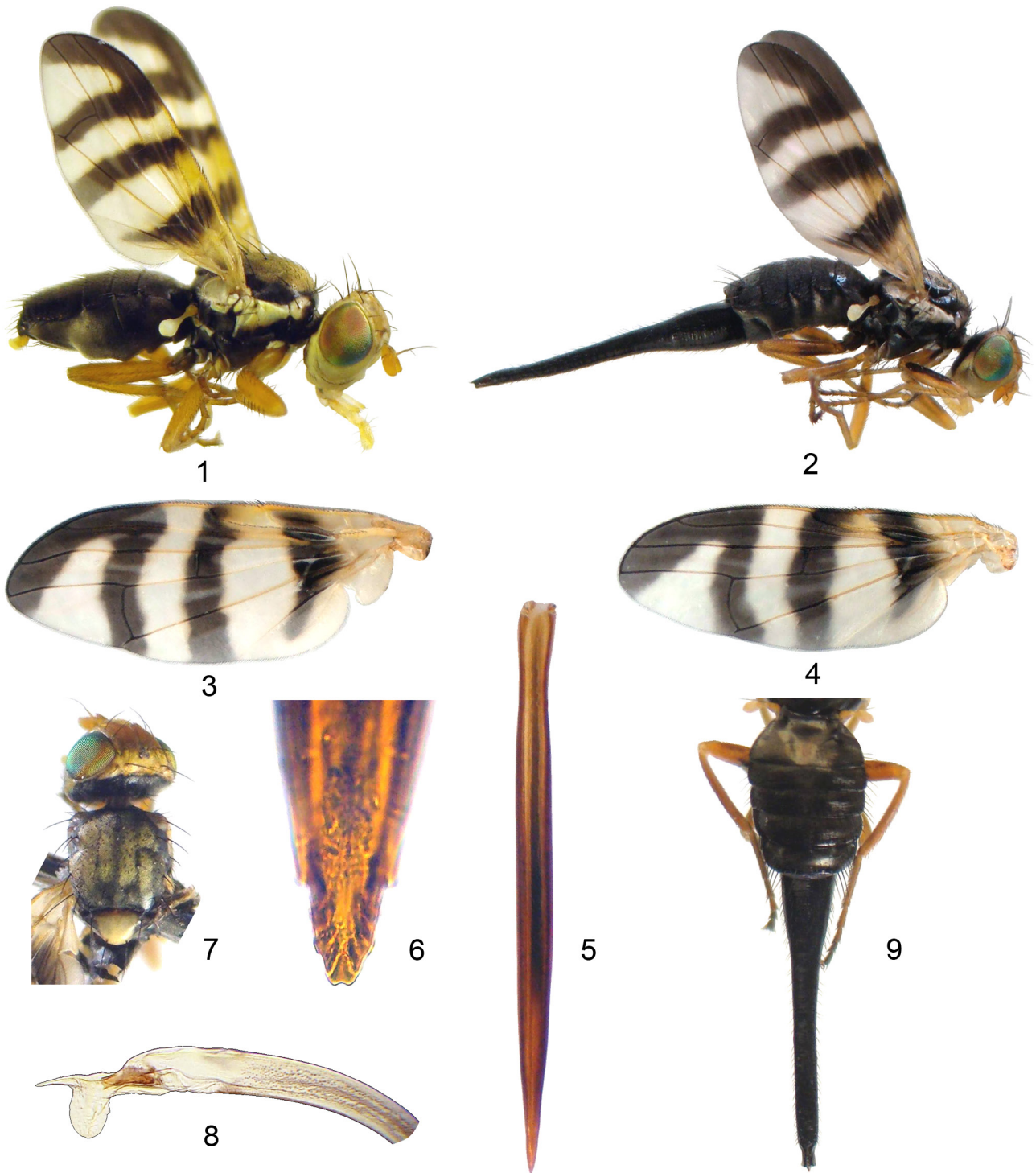
Description. Medium-sized fly: female body length (including oviscape) 7.0–7.8 mm, male body length 4.6–5.3 mm, wing length 3.7–4.0 mm. General body colour black. All setae black. Ratios of head length to its height and width 1 : 1.4 : 1.5. Frons predominantly orange, with some areas pale brown. Palpus whitish, darkening to orange api-

cally. Proboscis yellowish or whitish, with yellowish areas. First flagellomere orange. Pedicel yellow or orange. Scape yellow. Lunule whitish.

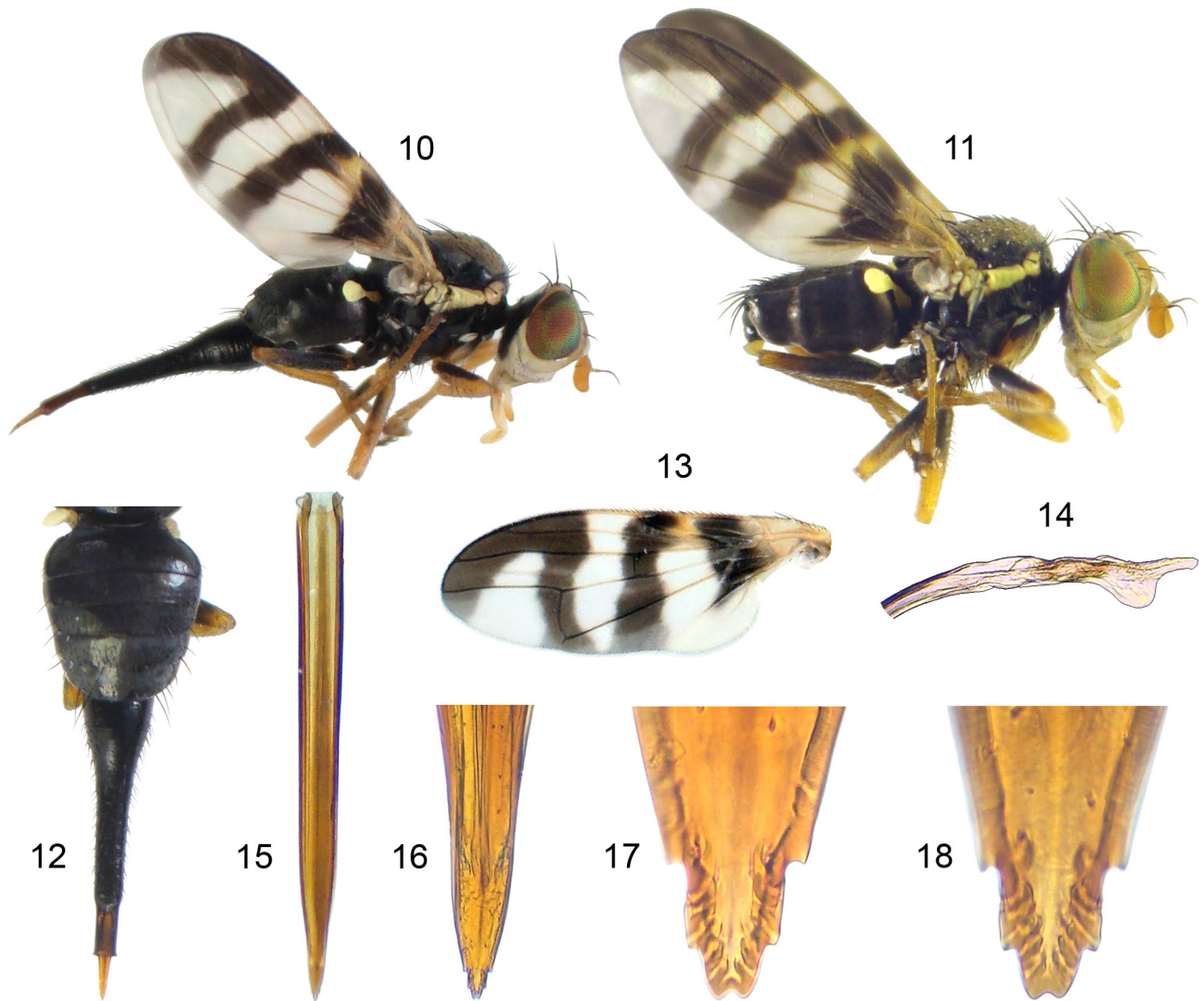
Thorax predominantly black; its length 1.6–1.8 mm. Postpronotal lobe largely yellow or whitish. Upper part of anepisternum yellowish or whitish. Postpronotal seta based in yellowish area. Upper anepisternal seta based in yellowish area (Fig. 1). Anterior notopleural seta based in black area (on margin of black and yellow areas). Posterior notopleural seta based in black area. Scutellum yellow centrally, black laterally, with two pairs of setae (Fig. 7); basal scutellar setae based in black lateral area; apical scutellar setae based in yellow central area. Wing with distinct black subbasal, discal, preapical and apical crossbands (crossbands listed from wing base to wing apex). Subbasal and discal crossbands separate (Figs 1–4). Discal and preapical crossbands separate. Preapical and apical crossbands joined anteriorly between veins *C* and *R*₄₊₅ [black area extends from one-third (Fig. 3) to three-fourths (Fig. 4) of width of cell *r*₂₊₃]. Subbasal crossband narrowed posteriorly, forming a process (Figs 1–4). Posterior process is more prominent in males. Scutum with dense microtrichial pattern, similar in colour to pollen, with or without stripes and marks (Fig. 7). Male femora usually entirely orange (Fig. 1). Female fore and hind femora orange, with black longitudinal stripe; middle femora predominantly orange, with small mark on basal half (Fig. 2). Two apical segments of tarsi often brown or black.

Abdomen black. Male abdomen length 2 mm. Female abdomen (including oviscape) length 4.8–5.3 mm. Oviscape (= syntergosternite 7, = seventh tergosternite, = tergosternum 7) shiny black, 1.6–1.7 times as long as all tergites combined. Oviscape length 3.0–3.3 mm. Aculeus with two pairs of preapical steps including strong primary (proximal) and weaker secondary (distal) steps (Fig. 6). Aculeus with weak apical notch. Aculeus length 2.7 mm.

Comparison. The only other *Urophora* species known to attack the genus *Psephellus* is *U. trinervii* Korneyev et White, 1996, which has an entirely different wing pattern characterised by reduced, faint crossbands, with the subbasal crossband absent or rarely represented by only a grey spot located between veins *R*₁ and *A*₁, the



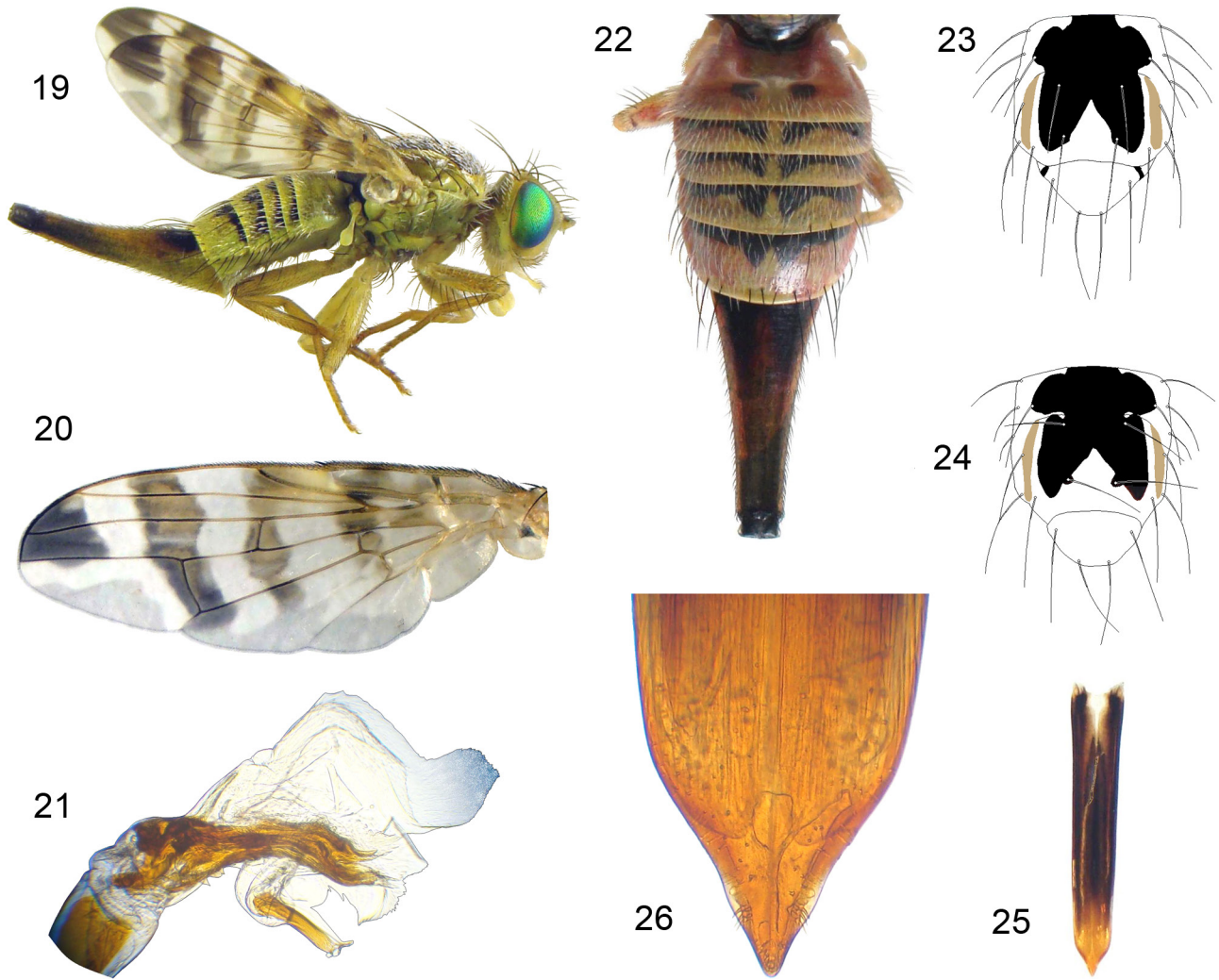
Figs 1–9. *Urophora sevanensis* sp. nov., paratypes (1–8) and holotype (9). 1, male habitus (in lateral view); 2, female habitus (in lateral view); 3, male wing; 4, female wing; 5, aculeus; 6, apex of aculeus; 7, female thorax (in dorsal view); 8, glans of phallus; 9, female abdomen (in dorsal view).



Figs 10–18. *Urophora aprica* (Fallén, 1820) from European Russia (Ulyanovsk Province; reared from *Centaurea cyanus*), females (10, 12, 15–18) and males (11, 13, 14). **10**, female habitus (in lateral view); **11**, male habitus (in lateral view); **12**, female abdomen (in dorsal view); **13**, male wing; **14**, glans of phallus; **15**, aculeus; **16**, distal part of aculeus; **17**, **18**, apex of aculeus.

discal crossband obscure, represented in females by a weak, diffuse spot bordering *r-m* (= *ta*), and usually more or less expressed between *R*₁ and *r-m* in males, and the preapical and apical crossbands separated in females, and joined in 65% males. The basal scutellar seta in *U. trinervii* is on the margin of the yellow and black areas (Korneyev & White, 1996) versus within the black area in *U. sevanensis* sp. nov. Korneyev & White (1996) reared *U. trinervii* from capitulum galls on *Psephellus trinervius* (Willd.) Wagenitz [as *Odonto-*

lophus trinervius in Korneyev & White (1996) and as *Centaurea (Odontolophus) trinervius* in Korneyev & White (1999)]. *Urophora sevanensis* sp. nov. resembles *U. aprica* (Fallén, 1820), which is associated with *Centaurea cyanus* L. A latter fly species located in couplet 54 in a key for the identification of the eastern Palaearctic *Urophora* species provided by Korneyev & White (1999). Here, the morphological details *U. aprica* are illustrated based on the original material from the Ulyanovsk Province of Russia (Figs 10–18).



Figs 19–26. *Terellia ermolenkoi* Korneyev, 1985, females (19, 20, 22, 25, 26) and males (20, 21, 23, 24). 19, female habitus (in lateral view); 20, male wing; 21, glans of phallus; 22, female abdomen (in dorsal view); 23, 24, male thorax (in dorsal view); 25, aculeus; 26, apex of aculeus.

The following key may be used to differentiate *U. sevanensis* **sp. nov.** from *U. trinervii* and *U. aprica*:

1. Wing pattern characterised by reduced, faint crossbands. Larvae develop in the capitula of *Psephellus trinervius* ***U. trinervii***
- Wing with four distinct crossbands: separated subbasal and discal crossbands, separated discal and preapical crossbands, anteriorly connected preapical and apical crossbands 2
2. Male posterior process of subbasal crossband long (Fig. 3). Usually male femora entirely orange. Aculeus with distinct preapical primary and small se-

- condary steps (Fig. 6). Apical notch small (Fig. 6). Aculeus length 2.7 mm. Larvae develop in the capitula of *Psephellus* sp.
- ***U. sevanensis* sp. nov.**
- Male posterior process of subbasal crossband short (Figs 11, 13). Male femora with extensive black marks up to predominantly black, orange apically (Fig. 11). Aculeus with two pairs of very prominent preapical steps (Figs 17, 18). Apical notch deeper (Figs 17, 18). Aculeus length 1.7–1.9 mm. Larvae develop in the capitula of *Centaurea cyanus*
- ***U. aprica***

Host plant. Larvae of the new species develop in the capitula of *Psephellus* sp. (Fig. 27, see Addenda). *Terellia ermolenkoi* Korneyev, 1985 was reared from the capitula of the same species of *Psephellus*. Information about this fly species is presented below.

Etymology. The species name is an adjective derived from Lake Sevan (Uluuü in Armenian), on the coast of which the type locality is situated.

Distribution. The new species is known from the Gegharkunik Province of Armenia.

***Terellia ermolenkoi* Korneyev, 1985** (Figs 19–26)

Material examined. Armenia, Gegharkunik Prov., western coast of Sevan Lake, between Noratus Vill. and Eranos Vill., among rocks, 4 females and 4 males reared on 10.IV.2022 from capitula of *Psephellus* sp. collected on 25.VII.2021, D. Evstigneev leg.

Comments. Larvae of this species develop on the same *Psephellus* sp. as larvae of *Urophora sevanensis* sp. nov. *Terellia ermolenkoi* was originally described by V. Korneyev (1985) from Azerbaijan, based on one male collected by Ermolenko. This species was reported from Armenia (Zarghani et al., 2016) and from the Caucasus in Russia: the Beshtau Mountain in the Stavropol' Territory, the Jamagat Valley near Teberda in the Republic of Karachay-Cherkessia (Zarghani et al., 2016), and the Lagonaki Plateau in the Republic of Adygea (Shcherbakov, 2017). A description of females and redescription of males of this species was provided in the paper cited above (Zarghani et al., 2016). These authors found that larvae of *T. ermolenkoi* develop in the capitula of various species of the genus *Psephellus*. The morphological details of *T. ermolenkoi* are illustrated in Figs 19–26. The shape, position and colour elements of the scutal pattern (= scutal marks) are illustrated for the first time (Figs 23, 24).

Distribution. Armenia (Zarghani et al., 2016), Azerbaijan (Korneyev, 1985), Iran (Zarghani et al., 2016), and the Caucasus in Russia (Zarghani et al., 2016; Shcherbakov, 2017).

Addenda

Electronic supplementary material. Fig. 27. *Psephellus* sp., the host plant of *Urophora sevanensis*

sp. nov. in its type locality (Armenia, Gegharkunik Province, western coast of Sevan Lake, between the villages Noratus and Eranos, among rocks, 1 August 2021). File format: JPEG. Available from: <https://doi.org/10.31610/zsr/2023.32.1.16>

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