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Revision of the *Urophora xanthippe* species group, with description of new species (Diptera: Tephritidae)

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Abstract

The *xanthippe* group of species of the genus *Urophora* Robineau-Desvoidy, 1830 is revised and keyed. It contains seven species with a yellow area on the scutum medial to the notopleuron: *Urophora bakhtiari* **new species** (from flowerheads of *Cousinia archibaldii*), *Urophora dirlbeki* **new species** (from flowerheads of *Onopordum acanthium*), *U. iani* Korneyev & Merz 1998, *U. impicta* (Hering 1942) (= *Urophora hermonis* Freidberg 1974, **new synonym)**, *U. kasachstanica* (Richter 1964), *U. stalker* Korneyev 1985, and *U. xanthippe* (Munro 1934). All the species are described, illustrated and keyed.

Key words: Diptera, Tephritidae, Myopitinae, *Urophora*

Introduction

The genus *Urophora* Robineau-Desvoidy 1830, with 61 species, is one of the largest genera of the family Tephritidae in the Palaearctic Region (Norrbom *et al.* 1999; Norrbom 2004). All species of known biology are associated with asteraceous plants and most of them induce galls in their flower heads or stems (White & Korneyev 1989).

Some *Urophora* species are biological control agents of asteraceous weeds; of them, *U. affinis* Frauenfeld 1857, *U. quadrifasciata* (Meigen 1826), *U. cardui* (Linnaeus 1758), *U. sylata* (Fabricius 1794), *U. sirunaseva* (Hering 1938), and *U. solstitialis* (Linnaeus 1758) have been successfully introduced into the Nearctic Region for biocontrol of weeds (Peschken & Harris 1975; Turner *et al.* 1994; Turner 1996; Wheeler & Stoops 1996).

In the Palaearctic Region, a key to species of *Urophora* was provided by Korneyev & White (1999). Since then a few additional species were described: *Urophora chakassica* Shcherbakov, *U. doganlari* Kütük, *U. hani* Kütük, *U. turkeyensis* Yaran & Kütük and *U. merzi* Mohamadzade Namin from Turkey and Iran (Shcherbakov 2001; Kütük 2006; 2009; Mohamadzade Namin & Nozari 2011; Yaran & Kütük 2014). Phylogenetic relationships within *Urophora* were analyzed by Korneyev (Korneyev *et al.* 2005).

The *xanthippe* species group was established by Korneyev & White (1993) to include species of *Urophora* with the margin of the scutum adjacent to the postpronotal lobe and notopleuron yellow: *U. impicta* Hering 1942, *U. kasachstanica* (Richter 1964), *U. stalker* Korneyev 1984, *U. xanthippe* (Munro 1934), and 2 undescribed species; also, *U. beikoi* Korneyev 1985 was suggested to be a junior synonym of *U. stalker.* Later, one of the two unnamed species was described as *U. iani* Korneyev & Merz 1998. In the key to Palaearctic *Urophora* (Korneyev & White 1999), species of the group with and without wing pattern were keyed separately; *U. hermonis* Freidberg 1974 was added to the key as similar to *U. impicta.*

Most of the species assigned to this group were hitherto known only from the Middle East and Central Asia, from Israel and Armenia to Kyrgyzstan and Tadjikistan, except *U. kasachstanica* and *U. xanthippe*, which are recorded also from southern Ukraine and associated with the invasive weed *Acroptilon repens* (L.) DC., apparently introduced from Kazakhstan (Korneyev & Kameneva 1984).

During studies on the tephritid fly fauna of Iran, two previously undescribed species superficially similar to *Urophora xanthippe* were discovered. To clarify the taxonomy and distribution of the species assigned to the *xanthippe* species group, all available material including newly collected specimens from Iran was revised.

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