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A contribution to the knowledge of fruit flies (Diptera: Tephritidae) from Iran

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Abstract

The fauna of fruit flies (Diptera: Tephritidae) from some regions of Iran is studied in this paper. Totally 20 species from 12 genera were collected and identified. The species, *Capparimyia savastani* (MARTELLI) is new country record.

Key words: Diptera, Tephritidae, Fruit flies, Fauna, Iran.

Zusammenfassung

Vorliegende Arbeit behandelt die Fauna der Bohrfliegen (=Fruchtfliegen) (Diptera: Tephritidae) des Irans. Insgesamt gelang der Nachweis von 20 Arten aus 12 Gattungen, wobei sich *Capparimyia savastani* (MARTELLI) als Erstnachweis für den Iran herausstellte.

Introduction

Tephritidae (Diptera) is a large family with more than 4400 described species over the world. Considering their damage on fruit plantations, they are important insects from the agricultural point of view as well as forest entomology (WHITE & ELSON-HARRIS 1992). Fruit flies are important widespread pests of crop fruits and vegetables, which infest a great variety of native and exotic fruits (WHITE 1988; ALUJA & NORRIBON 2001). Almost 250 species are known to be associated with plants and vegetables of economic importance, including about 100 that are pests, ranging in status from minor to very serious (WHITE & ELSON-HARRIS 1992). A few species induce the formation of galls in the upper or subterranean parts of stems of Asteraceae (FREIDBERG 1984; KORNEYEV 2003).

The fauna of Iranian Tephritidae was studied by BECKER (1913), AFSHAR (1937), HERING (1956), DIRLBEK (1980), PARCHAMI (1995), MODARRES AWAL (1997), GHARALI & MERZ (2004), GHARALI et al. (2006), KARIMPOUR & MERZ (2006), GILASIAN (2007), GILASIAN & MERZ (2008), MOHAMADZADE & RASOULIAN (2009), MOHAMADZADE et al. (2010a, b, c, 2011), HAJI GHORBANI (2010), HAJI GHORBANI et al. (2010), ZARGHANI et al. (2010a, b, c), NEMATOLLAHI (2010), GHARAJEDAGHI et al. (2011), MOHAMADZADE & NAJARPOOR (2011). In this publication new records and new distributional data of Iranian Tephritidae are presented in order to understand better the diversity of these flies in the country.

Materials and Methods

The specimens of this research were collected using Malaise traps and were swept on flowers head of Asteraceus plants by the first author and some other researchers. The samples were killed in a killing jar containing potassium cyanide. Almost the specimens were determined by Bernhard Merz (Geneva, Switzerland) and a few others with the keys available covering at least partly the fauna of Iran (HERING 1944; RICHTER 1970; FREIDBERG & KUGLER 1989; FREIDBERG & MATHIS 1986; MERZ 1994).

Results

In total 20 tephritid species from 12 genera were collected from different regions of Iran. The list of species is given below alphabetically. Their nomenclature follows MERZ (2010).

Acanthiophilus helianthi (ROSSI 1794)

Material examined: Khuzestan province: Ahwaz, 2♂♂, 2♀♀, July 2005.

Bactrocera zonata (SAUNDERS 1842)

Material examined: Golestan province: Gorgan, 1♂, June 2005. Ilam province: Ilam, 1♂, June 2005. Kermanshah province: Kermanshah, 1♂, September 2005.

***Campiglossa absinthii* (FABRICIUS 1805)**

Material examined: Mazandaran province: Savadkooh, 1♂, 1♀, September 2007.

***Capparimyia savastani* (MARTELLI 1911)**

Material examined: Semnan province: Damghan, 1♂, October 2005. **New record for Iran.**

***Chaetorellia australis* HERING 1940**

Material examined: Khuzestan province: Ahwaz, 1♀, July 2005.

***Dacus ciliatus* LOEW 1862**

Material examined: Tehran province: Karaj, 1♀, June 2005. Isfahan province: Najaf-Abad, 1♀, November 2005.

***Goniurellia tridens* (HENDEL 1910)**

Material examined: Khuzestan province: Ahwaz, 1♂, July 2005.

***Myiopardalis pardalina* (BIGOT 1891)**

Material examined: Khorasa province: Mashhad, 1♂, July 2005.

***Tephritis dioscurea* (LOEW 1856)**

Material examined: Isfahan province: Isfahan, 1♂, July 2006. Hamadan province: Hamadan, 2♂♂, August 2008.

***Tephritis hyoscyami* (LINNAEUS 1758)**

Material examined: West Azarbaijan province: Ourmieh, 1♂, September 2007.

***Tephritis nigricauda* (LOEW 1856)**

Material examined: Mazandaran province: Qaemshahr, 1♂, 1♀, May 2009.

***Terellia lappae* (CEDERHJELM 1798)**

Material examined: East Azarbaijan province: Khomarloo, 1♀, April 2008.

Note: This species is often cited as *Terellia gynaecochroma* (HERING 1937).

***Terellia nigronota* KORNEYEV 1985**

Material examined: Ardabil province: Pars-Abad, 4♂♂, 3♀♀, September 2006. Gilan province: Rasht, 2♂♂, 2♀♀, August 2007. Golestan province: Gorgan, 1♂, 3♀♀, April 2008.

***Terellia virens* (LOEW 1846)**

M a t e r i a l e x a m i n e d : West Azarbayjan province: Ourmieh, 2♂♂, 2♀♀, September 2007. Kurdistan province: Sanandaj, 3♂♂, 1♀, June 2008.

***Trupanea amoena* (FRAUENFELD 1857)**

M a t e r i a l e x a m i n e d : Mazandaran province: Sari, 1♀, July 2004. Kerman province: Kerman, 1♂, June 2005. Khuzestan province: Ahwaz, 1♂, July 2005.

***Trupanea stellata* (FUESSLIN 1775)**

M a t e r i a l e x a m i n e d : Mazandaran province: Sari, 1♂, 4♀♀, July 2004. Kerman province: Kerman, 4♂♂, 3♀♀, June 2005. Khuzestan province: Ahwaz, 3♂♂, 6♀♀, July 2005.

***Urophora affinis* (FRAUENFELD 1857)**

M a t e r i a l e x a m i n e d : Guilan province: Rasht, 2♂♂, 1♀, August 2007.

***Urophora hermonis* FREIDBERG 1974**

M a t e r i a l e x a m i n e d : Golestan province: Gorgan, 2♀♀, April 2008.

***Urophora solaris* KORNEYEV 1984**

M a t e r i a l e x a m i n e d : Kurdistan province: Sanandaj, 2♂♂, June 2008.

***Urophora solstitialis* (LINNAEUS 1758)**

M a t e r i a l e x a m i n e d : Mazandaran province: Savadkooh, 3♀♀, September 2007.

Discussion

Regarding to the publications on Iranian Tephritidae (see references), the fauna of these flies is diverse and on other hand insufficiently known in this country. Iran is a large country incorporating various geographical regions and climates and we expect that a large number of species remain to be discovered. To find new species and distributional records, more faunistic works should be conducted on this important insect group. Since some species of fruit flies are destructive agricultural pests (ALUJA & NORRIBON 2001), determining them and also faunistic surveys on their natural enemies (WHARTON 1989; DAANE & JOHNSON 2009) in different regions of Iran is very important for the pest control which must be continued by the researchers.

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