




## An updated checklist of Syrphidae (Diptera, Brachycera) from Iran

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**ABSTRACT.** An updated checklist of Iranian Syrphidae (Diptera: Syrphoidea) is presented based on literature records with the latest taxonomic and nomenclatural changes. A total of 269 valid species in 70 genera among four subfamilies have been known from Iran, which is approximately 4.27 percent of the world's total known Syrphidae. Among these, 145 species and 31 genera were added to the previous list. Of the 70 genera *Eumerus* Meigen (35 species, 13.01%) and *Merodon* Meigen (26 species, 9.67%), are the most speciose, whereas 30 genera are represented in Iran by only one recorded species. The majority of Iranian hoverfly species are exclusively distributed in the Palaearctic region, while 21 species are known only from Iran and possibly endemic to the country.

**Key words:** Distribution, fauna, Iran, Palaearctic region, Hoverfly

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### INTRODUCTION

Syrphidae (Diptera, Brachycera) is a speciose family of flies with more than 6300 described species worldwide (Skevington et al., 2019). The adults are important pollinators, and the larvae are biological control agents, decomposers, and bioindicators (Sommaggio, 1999). The family is worldwide in distribution, only absent in Antarctica (Mengual et al., 2020). The family is divided into four subfamilies including: Syrphinae, Eristalinae, Microdontinae and Pipizinae (Mengual et al., 2015a). The adults generally feed on pollen and nectar, but their larvae are found in very diverse habitats. Larvae of Syrphinae and Pipizinae are mostly predaceous on soft-bodied hemipterans, larvae of Eristalinae are saprophagous and immature stages of Microdontinae have been founded in ants' nests (Skevington et al., 2019).

The first Iranian checklist of Syrphidae was published by Dousti and Hayat (2006), who listed 124 species from 39 genera for Iran. The species recorded are from two subfamilies Syrphinae and Eristalinae with 59 (47.58%) and 65 (52.42%) species respectively. Since then, many taxonomic studies on Iranian Syrphidae have been appeared, and many previously identified, as well as new species, have been found in Iran (e.g. Gharali & Reemer, 2008, 2010, 2014; Gharali & van Steenis, 2008; Gharali & Vujić, 2010; Gilasian, 2007; Gilasian & Sorokina, 2011; Gilasian et al., 2015, 2016, 2017, 2020, 2022; Kazerani et al., 2012a, 2012b, 2012c, 2012d, 2013, 2014a, 2014b, 2017; Khaghaninia, 2010, 2011; Khaghaninia & Kazerani, 2014; Khaghaninia et al., 2010a, 2010b, 2010c, 2010d, 2010e, 2011a, 2011b, 2012a, 2012b, 2012c, 2014; Mengual et al., 2015b, 2020, 2021; Shakeryari & Khaghaninia, 2012; Shakeryari et al., 2012, 2014; van Steenis & Gharali, 2015; van Steenis et al., 2018; Vujić et al., 2017, 2019, 2020). The present list is intended to facilitate access to the most recent data on Iranian Syrphidae for future studies and to update the recorded species from Iran.

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## MATERIAL AND METHODS

The present checklist was prepared by reviewing published literatures up to date in order to find Iranian records and assumed that Peck (1988) summarized important works on the syrphid fauna of Iran before 1988. Attempts have been made to consider all reports related to the provinces of Iran (Fig. 1). Several corrections and synonyms are also included based on peer-reviewed papers. Valid species names are mentioned, and synonyms of each species have been avoided, except in cases where the records are listed based on synonyms. No specimen has been examined and the responsibility for correct species identification rests with the author of the articles. The genera and species are arranged in alphabetic order regardless of subfamilies. Three different categories were used in the general distribution: *a.* realms such as Palaearctic when the species has a broad distribution; *b.* regions such as Europe; and *c.* countries, when the species is only reported from those regions or countries. Peck (1988), Speight (2020) and Mengual et al. (2020) were used to show world geographical distribution of the listed species. The distribution of the species that have been reported only from Iran is checked out from the original references, as well as the species that were not found in these literatures. Since most distributions given in this current paper were summarized, see Speight (2020) for a more detailed geographic distribution.



**Figure 1.** Map of Iran with the name of provinces and the number of reported species.

## RESULTS

### Order Diptera Linnaeus, 1758

#### Superfamily Syrphoidea Latreille, 1802

#### Family Syrphidae Latreille, 1802

#### Genus *Allobaccha* Curran, 1928

Type species: *Baccha rubella* van der Wulp, 1898.

#### *Allobaccha sapphirina* (Wiedemann, 1830)

**Distribution in Iran:** Sistan & Baluchistan (Motamedinia & Wyatt, 2007).

**General distribution:** Afrotropical, Arabian Peninsula, Egypt, Oriental region.

#### Genus *Anasimyia* Schiner, 1864

Type species: *Musca transfuga* Linnaeus, 1758.

#### *Anasimyia contracta* Claussen & Trop, 1980

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010c, 2011b).

**General distribution:** Western Palaearctic.

#### *Anasimyia transfuga* (Linnaeus, 1758)

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010c, 2011b).

**General distribution:** Central and Northern Europe, Balkan Peninsula and eastwards to European Russia, and as far as central Siberia.

#### Genus *Baccha* Fabricius, 1805

Type species: *Syrphus elongatus* Fabricius, 1775.

#### *Baccha elongata* (Fabricius, 1775)

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010c, 2010d; Arbabi, 2017).

**General distribution:** Western Palaearctic, Nearctic. Also a few records from Neotropical and Oriental.

#### Genus *Brachyopa* Meigen, 1822

Type species: *Musca conica* Panzer, 1798.

#### *Brachyopa bicolor* (Fallén, 1817)

**Distribution in Iran:** Mazandaran (Babaei, 2018; Babaei et al., 2019).

**General distribution:** Palaearctic.

#### Genus *Brachypalpus* Macquart, 1834

Type species: *Brachypalpus tuberculatus* Macquart, 1834.

#### *Brachypalpus valgus* (Panzer, 1798)

**Distribution in Iran:** Fars (Gilasian et al., 2017).

**General distribution:** Europe, Also from Oriental.

#### Genus *Caliprobola* Rondani, 1845

Type species: *Syrphus speciosus* Rossi, 1790.

#### *Caliprobola aurea* (Sack, 1910)

**Distribution in Iran:** Mazandaran (Gilasian, 2004).

**General distribution:** South of the Caucasus Mountains in Georgia and Azerbaijan.

**Genus *Ceriana* Rafinesque, 1815**

Type species: *Ceria clavicornis* Fabricius, 1794. – *Ceriana caucasica* (Paramonov, 1927), Synonym of *Ceriana conopsoides* (Linnaeus, 1758).

***Ceriana conopsoides* (Linnaeus, 1758)**

**Distribution in Iran:** North Iran (Peck, 1988 as its synonym *Ceriana caucasica* (Paramonov, 1927)), East Azerbaijan (Khiaban et al., 1998).

**General distribution:** Palaearctic.

***Ceriana media* van Steenis & Ricarte [*in van Steenis et al.*], 2016**

**Distribution in Iran:** East Azerbaijan (van Steenis et al., 2016).

**General distribution:** Afghanistan and Iran (van Steenis et al., 2016).

***Ceriana skevingtoni* Steenis & Ricarte [*in van Steenis et al.*], 2016**

**Distribution in Iran:** Golestan (van Steenis et al., 2016).

**General distribution:** Armenia, Azerbaijan, Iran.

**Genus *Chalcosyrphus* Curran, 1925**

Type species: *Chalcosyrphus atra* Curran, 1925.

***Chalcosyrphus nemorum* (Fabricius, 1805)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010c; Khaghaninia, 2011), Mazandaran (Babaei, 2018).

**General distribution:** Holarctic.

**Genus *Cheilosia* Meigen, 1822**

Type species: *Eristalis scutellaris* Fallén, 1817.

***Cheilosia aerea* Dufour, 1848**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010b; Vosughian, 2013), West Azerbaijan (Khaghaninia & Kazerani, 2014; Mohammadzadeh, 2017), Kurdistan (Hoseini et al., 2014), Khorasan-e Razavi (Rastegar Moghadam & Pashaei Rad, 2016).

**General distribution:** Western Palaearctic.

***Cheilosia cumanica* Szilady, 1938**

**Distribution in Iran:** Semnan (Mehrabi & Ssymank, 2008), Tehran (Gharali & Vujić, 2010), East Azerbaijan (Khaghaninia et al., 2010b; Vosughian, 2013; Arbabi, 2017), West Azerbaijan (Khaghaninia & Kazerani, 2014), Kurdistan (Hoseini et al., 2014).

**General distribution:** Balkans and Carpathians, southern parts of European Russia.

***Cheilosia gigantea* (Zetterstedt, 1838)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004, 2005).

**General distribution:** Palaearctic, except Mediterranean Basin.

- *Cheilosia latifacies* Loew, 1857, Synonym of *Cheilosia laticornis* Rondani, 1857.

***Cheilosia laticornis* Rondani, 1857**

**Distribution in Iran:** Mazandaran (Gilasian, 2004, 2005 as its synonym *Cheilosia latifacies* Loew, 1857).

**General distribution:** Central and Western Europe, including Transcaucasia.

***Cheilosia lola* Zimina, 1970**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2012c; Vosughian, 2013), West Azerbaijan (Khaghaninia & Kazerani, 2014; Mohammadzadeh, 2017).

**General distribution:** Kyrgyzstan.

***Cheilosia melanopa* (Zetterstedt, 1843)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004, 2005; Babaei, 2018).

**General distribution:** Europe.

***Cheilosia mutabilis* (Fallén, 1817)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia & Kazerani, 2014).

**General distribution:** Central and Western Palaearctic, into western Siberia.

***Cheilosia nigripes* (Meigen, 1822)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia & Kazerani, 2014; Arbabi, 2017), Kurdistan (Hoseini et al., 2014).

**General distribution:** Palaearctic.

***Cheilosia proxima* (Zetterstedt, 1843)**

**Distribution in Iran:** West Azerbaijan (Khaghaninia et al., 2010e), East Azerbaijan (Shakeryari & Khaghaninia, 2012; Vosughian, 2013).

**General distribution:** Palaearctic.

- *Cheilosia rufipes* (Preyssler, 1793), Synonym of *Cheilosia soror* (Zetterstedt, 1843).
- *Cheilosia ruralis* (Meigen, 1822), Synonym of *Cheilosia urbana* Meigen, 1822.

***Cheilosia sahlbergi* Becker, 1894**

**Distribution in Iran:** West Azerbaijan (Khaghaninia et al., 2010e).

**General distribution:** Europe and Transcaucasia.

***Cheilosia scutellata* (Fallén, 1817)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004, 2005), East Azerbaijan (Vosughian, 2013).

**General distribution:** Palaearctic.

***Cheilosia soror* (Zetterstedt, 1843)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004, 2005 as its synonym *Cheilosia ruffipes* (Preyssler, 1793); Babaei, 2018; Babaei et al., 2019).

**General distribution:** Palaearctic.

***Cheilosia transcaucasica* Stackelberg, 1960**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2012c; Vosughian, 2013; Arbabi, 2017).

**General distribution:** Transcaucasia.

***Cheilosia urbana* Meigen, 1822**

**Distribution in Iran:** Mazandaran (Gilasian, 2004, 2005 as its synonym *Cheilosia ruralis* (Meigen, 1822)).

**General distribution:** Western Palaearctic.

***Cheilosia variabilis* (Panzer, 1798)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia & Kazerani, 2014).

**General distribution:** Western and Central Palaearctic, into western Siberia.

***Cheilosia vicina* (Zetterstedt, 1849)**

**Distribution in Iran:** East Azerbaijan, Golestan, Hamadan (Gilasian et al., 2017).

**General distribution:** Europe, Turkey, and Siberia.

***Cheilosia vulpina* (Meigen, 1822)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia & Kazerani, 2014; Arbabi, 2017).

**General distribution:** Central and Western Palaearctic, into Western Siberia.

**Genus *Chrysogaster* Meigen, 1803**

Type species: *Syrphus coemeteriorum* Fabricius, 1775.

***Chrysogaster basalis* Loew, 1857**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010b).

**General distribution:** Europe, Kazakhstan, North Africa, Tajikistan and Ukraine.

***Chrysogaster cemeteriorum* (Linnaeus, 1758)**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Khaghaninia et al., 2012b).

**General distribution:** Palaearctic.

- *Chrysogaster hirtella* Loew, 1843, Synonym of *Melanogaster hirtella* Loew, 1843.

***Chrysogaster rondanii* Maibach & Goeldlin, 1995**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Khaghaninia et al., 2012b).

**General distribution:** Central and Western Europe.

- *Chrysogaster viduata* (Linnaeus, 1758), Synonym of *Melanogaster nuda* (Macquart, 1829).

***Chrysogaster virescens* Loew, 1854**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010c, 2011a; Vosughian, 2013), Kurdistan (Hoseini et al., 2014).

**General distribution:** Europe.

**Genus *Chrysotoxum* Meigen, 1803**

Type species: *Musca bicincta* Linnaeus, 1758.

***Chrysotoxum arcuatum* (Linnaeus, 1758)**

**Distribution in Iran:** Iran (Peck, 1988).

**General distribution:** Palaearctic.

***Chrysotoxum bactrianum* Violovitsh, 1973**

**Distribution in Iran:** Fars (Gharali et al., 2000), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Ilam (Jalilian et al., 2010), Lorestan (Jafari Moqadam & Pashaei Rad, 2015), Golestan (Davaji, 2018).

**General distribution:** Middle Asia.

***Chrysotoxum baphyrum* Walker, 1849**

**Distribution in Iran:** Hormozgan (Kazerani et al., 2017).

**General distribution:** Palaearctic.

***Chrysotoxum bicinctum* (Linnaeus, 1758)**

**Distribution in Iran:** Khorasan-e Razavi (Amirimoghadam et al., 2004), Alborz (Shahir, 2021).

**General distribution:** Central and Western Palaearctic into central Siberia.

***Chrysotoxum cautum* (Harris, 1776)**

**Distribution in Iran:** Iran (Amirimoghadam & Sirjani, 2004), Sistan & Baluchistan (Hoodiani, 2010), East Azerbaijan (Shakeryari, 2012), Golestan (Davaji, 2018), Mazandaran (Babaei, 2018).

**General distribution:** Europe, Mongolia and Turkey.

***Chrysotoxum coreanum* Shiraki, 1930**

**Distribution in Iran:** Golestan (Goldasteh et al., 2002).

**General distribution:** The Far East and Korea.

***Chrysotoxum elegans* Loew, 1841**

**Distribution in Iran:** East Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Shakeryari, 2012).

**General distribution:** Western Palaearctic, including Transcaucasia and Turkey.

***Chrysotoxum festivum* (Linnaeus, 1758)**

**Distribution in Iran:** Mazandaran (Ghahari et al., 2008), East Azerbaijan (Shakeryari, 2012).

**General distribution:** Palaearctic and Oriental.

***Chrysotoxum intermedium* Meigen, 1822**

**Distribution in Iran:** Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Tehran (Ahmadian & Pashaei Rad, 2010b), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014; Alitavakoli, 2015), Lorestan (Jafari Moqadam & Pashaei Rad, 2015).

**General distribution:** Afghanistan, Algeria, Europe, Morocco, Transcaucasia and Tunisia.

***Chrysotoxum lessonae* Giglio-Tos, 1890**

**Distribution in Iran:** Iran (Amirimoghadam & Sirjani, 2004).

**General distribution:** Europe, Iran and Turkey.

***Chrysotoxum montivagum* Violovitsh 1973**

**Distribution in Iran:** Alborz (Kazerani et al., 2013 as *Chrysotoxum montivaga*).

**General distribution:** Korea, Mongolia and Russia.

***Chrysotoxum octomaculatum* Curtis, 1837**

**Distribution in Iran:** East Azerbaijan (Ehteshamnia et al., 2010), Mazandaran (Babaei, 2018).

**General distribution:** Central and Western Palaearctic.

***Chrysotoxum parmense* Rondani, 1845**

**Distribution in Iran:** Sistan & Baluchistan (Peck, 1988), Khuzestan (Dousti, 1999; Dousti et al., 2000), Fars (Gharali et al., 2000), Ilam (Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Lorestan (Bahirai, 2011), Golestan (Davaji, 2018).

**General distribution:** Central Palaearctic, Iran, Mediterranean Basin, Transcaucasia.

***Chrysotoxum persicum* Vujić, Nedeljković & Hayat, 2017**

**Distribution in Iran:** Qazvin (Vujić et al., 2017).

**General distribution:** Armenia, Azerbaijan, Turkey.

***Chrysotoxum robustum* Portschnsky, 1887**

**Distribution in Iran:** Golestan (Peck, 1988).

**General distribution:** Iran and Transcaucasia.

***Chrysotoxum verralli* Collin, 1940**

**Distribution in Iran:** East Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001).

**General distribution:** Europe, Siberia and Transcaucasia.

***Chrysotoxum vernale* Loew, 1841**

**Distribution in Iran:** Iran (Peck, 1988), East Azerbaijan (Shakeryari, 2012; Arbabi, 2017).

**General distribution:** Palaearctic.

**Genus *Criorhina* Meigen, 1822**

Type species: *Syrphus asilicus* Fallén, 1816.

***Criorhina portschnskyi* (Stackelberg, 1955)**

**Distribution in Iran:** Guilan (van Steenis & Gharali, 2015).

**General distribution:** Northern Caucasus and Transcaucasia.

***Criorhina ranunculi* (Panzer, 1804)**

**Distribution in Iran:** North Khorasan (Gilasian et al., 2017).

**General distribution:** Europe and Transcaucasia.

***Criorhina talyshensis* (Stackelberg, 1960)**

**Distribution in Iran:** Guilan (Mengual et al., 2021).

**General distribution:** Azerbaijan.

**Genus *Dasysyrphus* Enderlein, 1938**

Type Species: *Scaeva albostrata* Fallén, 1817

***Dasysyrphus albostratus* (Fallén, 1817)**

**Distribution in Iran:** East Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001), Khorasan-e Razavi (Sadeghi et al., 2002), Ilam (Jalilian et al., 2010), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014), Golestan (Davaji, 2018).

**General distribution:** Palaearctic.



***Dasysyrphus eggeri* (Schiner, 1862)**

**Distribution in Iran:** Fars (Gharali & Gilasian, 2002).

**General distribution:** Palaearctic.

***Dasysyrphus tricinctus* (Fallén, 1817)**

**Distribution in Iran:** Mazandaran (Kazerani et al., 2012a).

**General distribution:** Palaearctic.

**Genus *Dideoides* Brunetti, 1908**

Type species: *Dideoides ovatus* Brunetti, 1908.

***Dideoides annandalei* (Brunetti, 1919)**

**Distribution in Iran:** Sistan & Baluchistan (Peck, 1988).

**General distribution:** Iran.

**Genus *Epistrophe* Walker, 1852**

Type species: *Epistrophe conjungens* Walker, 1852.

***Epistrophe eligans* (Harris, 1780)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004, 2007; Babaei, 2018), Hamadan (Gilasian, 2007), Alborz (Hezarkhani, 2013), Golestan (Davaji, 2018).

**General distribution:** Europe, Transcaucasia, and Turkey.

- *Epistrophe euchroma* (Kowarz, 1885), Synonym of *Meligramma euchroma* (Kowarz, 1885).

***Epistrophe nitidicollis* (Meigen, 1822)**

**Distribution in Iran:** Mazandaran (Kazerani et al., 2014a; Babaei, 2018).

**General distribution:** Holarctic.

**Genus *Episyrphus* Matsumura et Adachi, 1917**

Type species: *Episyrphus fallaciosus* Matsumura, 1917.

***Episyrphus balteatus* (De Geer, 1776)**

**Distribution in Iran:** Fars (Modarres Awal, 1994; Alichy et al., 2000), East Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Khuzestan (Dousti, 1999; Dousti et al., 2000), Qazvin (Mohammadbeigi, 2000), Isfahan (Pourghasem, 2001), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002; Malkeshi et al., 2004; Davaji, 2018), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghdam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Semnan (Mehrabi et al., 2006), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004; Hoodiani, 2010), Ilam (Jalilian et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), West Azerbaijan (Ashrafi, 2010; Mohammadzadeh, 2017), Zanjan (Naderloo, 2010), Lorestan (Malkeshi et al., 2004; Bahirai, 2011), Alborz (Malkeshi et al., 2004; Hezarkhani, 2013; Shahir, 2021), Kerman (Khosravian, 2014; Alitavakoli, 2015), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Palaearctic, Oriental, Australia.

**Genus *Eristalinus* Rondani, 1845**

Type species: *Musca sepulchralis* Linnaeus, 1758.

***Eristalinus aeneus* (Scopoli, 1763)**

**Distribution in Iran:** East Azerbaijan (Khiaban et al., 1998; Pashaei Rad et al., 2002; Vosughian, 2013), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), West Azerbaijan (Ashrafi, 2010; Mohammadzadeh, 2017), Zanjan (Naderloo, 2010), Sistan & Baluchistan (Hoodiani, 2010), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012; Hoseini et al., 2014), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014; Alitavakoli, 2015), Mazandaran (Babaei, 2018).

**General distribution:** Cosmopolitan.

***Eristalinus megacephalus* (Rossi, 1794)**

**Distribution in Iran:** Iran (Peck, 1988 as its synonym *Eristalinus quinquelineatus*), Fars (Gharali et al., 2000 as its synonym *Eristalinus quinquelineatus*), Khuzestan (Dousti, 1999; Dousti et al., 2000), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002), East Azerbaijan (Pashaei Rad et al., 2002; Shakeryari, 2012), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Guilan (Bagheri, 2007), Ilam (Jalilian et al., 2010), West Azerbaijan (Ashrafi, 2010), Zanjan (Naderloo, 2010), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012; Hoseini et al., 2014).

**General distribution:** Afrotropical, Mediterranean Basin, Transcaucasia and Turkey.

- *Eristalinus quinquelineatus* (Fabricius, 1781), Synonym of *Eristalinus megacephalus* (Rossi, 1794).

***Eristalinus sepulchralis* (Linnaeus, 1785)**

**Distribution in Iran:** East Azerbaijan (Khiaban et al., 1998; Shakeryari, 2012; Vosughian, 2013), Khuzestan (Dousti, 1999; Dousti et al., 2000), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Kurdistan (Kamangar et al., 2004; Hoseini et al., 2014), West Azerbaijan (Ashrafi, 2010; Mohammadzadeh, 2017), Zanjan (Naderloo, 2010), Sistan & Baluchistan (Hoodiani, 2010), Ilam (Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Lorestan (Bahirai, 2011), Mazandaran (Babaei, 2018).

**General distribution:** Palaearctic and India.

***Eristalinus taeniops* (Wiedemann, 1818)**

**Distribution in Iran:** East Azerbaijan (Khiaban et al., 1998; Pashaei Rad et al., 2002), Khuzestan (Dousti, 1999; Dousti et al., 2000), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002), Semnan (Mehrabi et al., 2006), Khorasan-e Razavi (Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Zanjan (Naderloo, 2010), Lorestan (Bahirai, 2011), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014; Alitavakoli, 2015).

**General distribution:** Afrotropical, Oriental, Palaearctic, South America.

**Genus *Eristalis* Latreille, 1804**

Type species: *Musca tenax* Linnaeus, 1758.

***Eristalis alpina* (Panzer, 1798)**

**Distribution in Iran:** East Azerbaijan (Gilasian et al., 2017).

**General Distribution:** Palaearctic.

***Eristalis arbustorum* (Linnaeus, 1758)**

**Distribution in Iran:** Iran (Peck, 1988), East Azerbaijan (Khiaban et al., 1998; Pashaei Rad et al., 2002; Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Khuzestan (Dousti, 1999; Dousti et al., 2000), Isfahan (Pourghasem, 2001), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002; Davaji, 2018), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012; Hoseini et al., 2014), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), West Azerbaijan (Ashrafi, 2010; Mohammadzadeh, 2017), Zanjan (Naderloo, 2010), Lorestan (Bahirai, 2011), Alborz (Hezarkhani, 2013; Shahir, 2021), Kerman (Khosravian, 2014; Alitavakoli, 2015).

**General distribution:** Holarctic and northern India.

***Eristalis nemorum* (Linnaeus, 1758)**

**Distribution in Iran:** Iran (Amirimoghadam & Sirjani, 2004), Kerman (Alitavakoli, 2015), Alborz (Shahir, 2021).

**General distribution:** Holarctic.

***Eristalis pertinax* (Scopoli, 1763)**

**Distribution in Iran:** Mazandaran (Gilasian et al., 2017), Guilan (Bagheri, 2007).

**General distribution:** Europe, Transcaucasia, and Turkey.

***Eristalis similis* Fallén, 1817**

**Distribution in Iran:** Mazandaran (Gilasian, 2004), Guilan (Bagheri, 2007), Semnan (Mehrabi & Ssymank, 2008), Zanjan (Naderloo, 2010), Alborz (Hezarkhani, 2013; Shahir, 2021).

**General distribution:** Palaearctic.

***Eristalis tenax* (Linnaeus, 1758)**

**Distribution in Iran:** Iran (Modarres Awal, 1994), East Azerbaijan (Khiaban et al., 1998; Pashaei Rad et al., 2002; Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Fars (Alichi et al., 2000), Khuzestan (Dousti, 1999; Dousti et al., 2000), Isfahan (Pourghasem, 2001), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002; Davaji, 2018), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), West Azerbaijan (Ashrafi, 2010; Mohammadzadeh, 2017), Zanjan (Naderloo, 2010), Lorestan (Bahirai, 2011), Alborz (Hezarkhani, 2013; Shahir, 2021), Kerman (Khosravian, 2014; Alitavakoli, 2015), Kurdistan (Hoseini et al., 2014).

**General distribution:** Almost cosmopolitan, known from all regions except Antarctica.

**Genus *Eumerus* Meigen, 1822**

Type species: *Syrphus tricolor* Fabricius, 1798.

***Eumerus ahmadii* Barkalov & Gharali, 2004**

**Distribution in Iran:** Fars (Barkalov & Gharali, 2004), Ilam (Bedoreh & Ansari pour, 2012).

**General distribution:** Iran.

***Eumerus amoenus* Loew, 1848**

**Distribution in Iran:** Fars (Barkalov & Gharali, 2004).

**General distribution:** Central and Southern Europe, Central Palaearctic to Mongolia, Transcaucasia.

***Eumerus argyropus* Loew, 1848**

**Distribution in Iran:** Markazi (Gilasian et al., 2022).

**General distribution:** Mediterranean parts of Europe, Transcaucasia, Turkey.

***Eumerus atricolorus* Gilasian & van Steenis [*in* Gilasian et al.], 2020**

**Distribution in Iran:** Kerman (Gilasian et al., 2020).

**General distribution:** Iran.

***Eumerus basalis* Loew, 1848**

**Distribution in Iran:** North Iran (Peck, 1988).

**General distribution:** Iran, Mediterranean parts of Europe, Turkey.

***Eumerus brevipilosus* Gilasian & van Steenis [*in* Gilasian et al.], 2020**

**Distribution in Iran:** Fars (Gilasian et al., 2020).

**General distribution:** Iran.

***Eumerus chekabicus* Gilasian & van Steenis [*in* Gilasian et al.], 2020**

**Distribution in Iran:** Markazi (Gilasian et al., 2020).

**General distribution:** Iran.

***Eumerus coeruleus* (Becker, 1913)**

**Distribution in Iran:** Sistan & Baluchistan (Peck, 1988; Gilasian et al., 2020), Markazi and Khorasan-e Razavi (Gilasian et al., 2020).

**General distribution:** Iran and Middle Asia.

***Eumerus effossus* Gilasian & van Steenis [*in* Gilasian et al.], 2022**

**Distribution in Iran:** Sistan & Balouchestan, Kerman (Gilasian et al., 2022).

**General distribution:** Iran.

***Eumerus falsus* Becker, 1922**

**Distribution in Iran:** Lorestan (Peck, 1988 as its synonym *Eumerus zarudnyi*), Kurdistan (Hoseini et al., 2014).

**General distribution:** Central Palaearctic, Iran, Israel, Transcaucasia and Turkey.

***Eumerus funeralis* Meigen, 1822**

**Distribution in Iran:** Golestan (Goldasteh et al., 2002), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2015), all as its synonym *Eumerus tuberculatus* Rondani, 1857.

**General distribution:** Palaearctic, but introduced in North and South America, Australia, and New Zealand.

***Eumerus hissaricus* Stackelberg, 1949**

**Distribution in Iran:** Khorasan-e Razavi (Gilasian et al., 2020).

**General distribution:** Central Asia, Transcaucasia.

***Eumerus intermedius* Gilasian & van Steenis [in Gilasian et al.], 2022**

**Distribution in Iran:** Kermanshah (Gilasian et al., 2022).

**General distribution:** Iran.

***Eumerus jacobsoni* Becker, 1913**

**Distribution in Iran:** Sistan & Baluchistan (Peck, 1988; Gilasian et al., 2020), Kerman (Peck, 1988), Khorasan-e Razavi (Hosseini & Sadeghi, 2008), Markazi (Gilasian et al., 2020).

**General distribution:** Afghanistan, Iran and Middle Asia.

***Eumerus kazanovzkyae* Paramonov, 1927**

**Distribution in Iran:** Lorestan (Bahirai, 2011; Bahirai et al., 2015), Kermanshah (Gilasian et al., 2020)

**General distribution:** Transcaucasia.

***Eumerus khiabani* Gilasian & van Steenis [in Gilasian et al.], 2022**

**Distribution in Iran:** Markazi (Gilasian et al., 2022).

**General distribution:** Iran.

***Eumerus longitarsis* Peck, 1979**

**Distribution in Iran:** Fars Markazi (Gilasian et al., 2020).

**General distribution:** Central Asia.

***Eumerus lucidus* Loew, 1848**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010b).

**General distribution:** Greece, Tajikistan, Turkmenistan, Uzbekistan, Yemen.

***Eumerus nadoosheni* Gilasian & van Steenis [in Gilasian et al.], 2022**

**Distribution in Iran:** Yazd (Gilasian et al., 2022).

**General distribution:** Iran.

***Eumerus ornatus* Meigen, 1822**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2010b, 2012), Alborz (Hezarkhani, 2013), Khorasan-e Razavi (Shojaei Hesari et al., 2015; Shojaei Hesari & Pashaei Rad, 2015).

**General distribution:** Western Palaearctic.

***Eumerus ovoformus* Gilasian & van Steenis [in Gilasian et al.], 2020**

**Distribution in Iran:** Markazi (Gilasian et al., 2020).

**General distribution:** Iran.

***Eumerus persarum* Stackelberg, 1961**

**Distribution in Iran:** Sistan & Baluchistan (Stackelberg, 1961; Peck, 1988); Yazd (Gilasian et al., 2020).

**General distribution:** Iran.

***Eumerus persicus* Stackelberg, 1949**

**Distribution in Iran:** Tehran (Stackelberg, 1949; Peck, 1988).

**General distribution:** Iran and Transcaucasia (Armenia).

***Eumerus pilosipedes* Gilasian & van Steenis [*in* Gilasian et al.], 2020**

**Distribution in Iran:** Markazi (Gilasian et al., 2020).

**General distribution:** Iran.

***Eumerus pollinipedes* Gilasian & van Steenis [*in* Gilasian et al.], 2022**

**Distribution in Iran:** Khuzestan (Gilasian et al., 2022).

**General distribution:** Iran.

***Eumerus richteri* Stackelberg, 1960.**

**Distribution in Iran:** Tehran (Gilasian et al., 2020).

**General distribution:** Croatia, Greece, Montenegro, Serbia and Transcaucasia (Azerbaijan).

***Eumerus sabulonum* (Fallén, 1817)**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012).

**General distribution:** Palaearctic.

***Eumerus similis* Gilasian & van Steenis [*in* Gilasian et al.], 2022**

**Distribution in Iran:** Khuzestan (Gilasian et al., 2022).

**General distribution:** Iran.

***Eumerus sogdianus* Stackelberg, 1952**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998; Ashrafi, 2010; Mohammadzadeh, 2017), Sistan & Baluchistan (Khiaban & Adim 2002), Fars, Qazvin and Ardabil (Barkalov & Gharali, 2004); East Azerbaijan (Barkalov & Gharali, 2004; Shakeryari, 2012; Vosughian, 2013), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012; Hoseini et al., 2014), Ilam (Jalilian et al., 2010), Zanzan (Naderloo, 2010), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2015), Golestan (Davaji, 2018).

**General distribution:** Palaearctic.

***Eumerus strigatus* (Fallén, 1817)**

**Distribution in Iran:** Khorasan, Tehran, Kerman (Modarres Awal, 1994), Semnan (Mehrabi et al., 2006), Khorasan-e Razavi (Hosseini & Sadeghi, 2008), Zanzan (Naderloo, 2010), Kurdistan (Hoseini et al., 2014).

**General distribution:** Australia and New Zealand, North America, Palaearctic.

***Eumerus tadjhikorum* Stackelberg, 1949**

**Distribution in Iran:** Golestan (Gilasian & Barkalov, 2004), Kurdistan (Kamangar et al., 2004), Mazandaran (Gilasian, 2004); Markazi and Khorasan-e Razavi (Gilasian et al., 2020).

**General distribution:** Kazakhstan, Middle Asia.

***Eumerus torsicus* Grković & Vujić, 2015**

**Distribution in Iran:** Kermanshah, Lorestan, Markazi (Gilasian et al., 2022).

**General distribution:** Cyprus, Greece, Turkey.

***Eumerus transcaspicus* (Stackelberg, 1952)**

**Distribution in Iran:** Kurdistan (Hoseini et al., 2014).

**General distribution:** Asia Minor, Syria, Tajikistan and Turkmenia.

***Eumerus tricolor* (Fabricius, 1798)**

**Distribution in Iran:** Fars (Barkalov & Gharali, 2004), Kohgiluyeh & Boyer Ahmad (Gilasian & Barkalov, 2004), Khorasan-e Razavi (Hosseini & Sadeghi, 2008), East Azerbaijan (Vosughian, 2013), Kurdistan (Hoseini et al., 2014).

**General distribution:** Palaeartic.

- *Eumerus tuberculatus* Rondani, 1857, Synonym of *Eumerus funeralis* Meigen, 1822.

***Eumerus vallicolus* Gilasian & van Steenis [in Gilasian et al.], 2020**

**Distribution in Iran:** Markazi (Gilasian et al., 2020).

**General distribution:** Iran.

**Genus *Eupeodes* Osten Sacken, 1877**

Type species: *Eupeodes volucris* Osten Sacken, 1877.

***Eupeodes bucculatus* (Rondani, 1857)**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2012 as its synonym *Metasyrphus latilunulatus*), Kerman (Alitavakoli, 2015 as its synonym *Eupeodes latilunulatus*).

**General distribution:** Europe.

***Eupeodes corollae* (Fabricius, 1794)**

**Distribution in Iran:** Tehran (Farahbakhsh, 1961; Modarres Awal, 1994 as its synonym *Metasyrphus corollae*; Ahmadian & Pashaei Rad, 2010b, 2011), Iran (Peck, 1988 as its synonym *Metasyrphus corollae*), Khorasan, Markazi (Modarres Awal, 1994 as its synonym *Metasyrphus corollae*), West Azerbaijan (Khiaban et al., 1998 as its synonym *Metasyrphus corollae*; Khiaban & Parchami, 2001; Malkeshi et al., 2004; Ashrafi, 2010; Mohammadzadeh, 2017), Khuzestan (Dousti, 1999; Dousti et al., 2000), Qazvin (Mohammadbeigi, 2000), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002; Malkeshi et al., 2004; Davaji, 2018), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Lorestan (Malkeshi et al., 2004; Bahirai, 2011), Alborz (Malkeshi et al., 2004; Hezarkhani, 2013; Shahir, 2021), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Semnan (Mehrabi et al., 2006), Guilan (Bagheri, 2007), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Zanjan (Naderloo, 2010), Sistan & Baluchistan (Hoodiani, 2010), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Kerman (Khosravian, 2014; Alitavakoli, 2015), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Palaeartic, Afrotropical and Taiwan.

- *Eupeodes lapponicus* (Zetterstedt, 1838), Synonym of *Lapposyrphus lapponicus* (Zetterstedt, 1838).

***Eupeodes latifasciatus* (Macquart, 1829)**

**Distribution in Iran:** Tehran (Modarres Awal, 1994; Ahmadian & Pashaei Rad, 2010b, 2011 as its synonym *Metasyrphus latifasciatus*), Isfahan (Pourghasem, 2001 as its synonym *Metasyrphus latifasciatus*), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Alborz (Hezarkhani, 2013), East Azerbaijan (Vosughian, 2013), Kerman (Alitavakoli, 2015), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2015), Ardabil (Azimi & Pashaei Rad, 2017), Mazandaran (Babaei, 2018), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Holarctic and India.

- *Eupeodes latilumulatus* (Collin, 1931), Synonym of *Eupeodes bucculatus* (Rondani, 1857).

### *Eupeodes luniger* (Meigen, 1822)

**Distribution in Iran:** Guilan (Motamedinia et al., 2002), Mazandaran (Gilasian & Vujić, 2004), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004; Hoodiani, 2010), Semnan (Mehrabi et al., 2006), Tehran (Ahmadian & Pashaei Rad, 2011), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013), Alborz (Hezarkhani, 2013), Kerman (Alitavakoli, 2015), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2015), Ardabil (Azimi & Pashaei Rad, 2017), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Palaearctic and northern India.

### *Eupeodes nitens* (Zetterstedt, 1843)

**Distribution in Iran:** Kerman (Alitavakoli, 2015).

**General distribution:** Palaearctic.

### *Eupeodes nuba* (Wiedemann, 1830)

**Distribution in Iran:** Khuzestan (Dousti, 1999; Dousti et al., 2000), Fars (Gharali et al., 2000), Golestan (Goldasteh et al., 2002), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Guilan (Motamedinia et al., 2002 as its synonym *Metasyrphus nuba*), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004), Semnan (Mehrabi et al., 2006), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), West Azerbaijan (Ashrafi, 2010), Zanjan (Naderloo, 2010), Lorestan (Bahirai, 2011), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014), East Azerbaijan (Arbabi, 2017).

**General distribution:** Canary Isles, Central Palaearctic to Mongolia, Europe, Transcaucasia.

### Genus *Ferdinandea* Rondani, 1844

Type species: *Conops cuprea* Scopoli, 1763.

### *Ferdinandea cuprea* Scopoli, 1763

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2014), Mazandaran (Babaei, 2018).

**General distribution:** Palaearctic.

### Genus *Helophilus* Meigen, 1822

Type species: *Musca pendula* Linnaeus, 1758.

### *Helophilus continuus* Loew, 1854

**Distribution in Iran:** West Azerbaijan (Najafi, 2007), Zanjan (Naderloo, 2010).

**General distribution:** Eastern Europe, Transcaucasia and through Russia to Kamchatka.

### *Helophilus hybridus* Loew, 1846

**Distribution in Iran:** Mazandaran (Ghahari et al., 2008).

**General distribution:** Europe, Mongolia, North America, Turkey.

### *Helophilus pendulus* (Linnaeus, 1758)

**Distribution in Iran:** Guilan (Motamedinia et al., 2002; Bagheri, 2007), Sistan & Baluchistan (Hoodiani, 2010), Kurdistan (Hoseini et al., 2014).

**General distribution:** Palaearctic.



***Helophilus trivittatus* (Fabricius, 1805)**

**Distribution in Iran:** Iran (Peck, 1988), West Azerbaijan (Khiaban et al., 1998), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002; Davaji, 2018), East Azerbaijan (Pashaei Rad et al., 2002), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Khorasan-e Razavi (Hosseini & Sadeghi, 2008), Kurdistan (Hasanbeigi, 2012; Hoseini et al., 2014).

**General distribution:** Palaearctic.

**Genus *Heringia* Rondani, 1856**

Type species: *Pipiza heringi* Zetterstedt, 1843.

***Heringia heringi* (Zetterstedt, 1843)**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2010a, 2011).

**General distribution:** Palaearctic.

- *Heringia latitarsis* (Egger, 1865), Synonym of *Neocnemodon latitarsis* (Egger, 1865).

**Genus *Ischiodon* Sack, 1913**

Type Species: *Ischiodon trochanterica* Sack, 1913.

***Ischiodon aegyptius* (Wiedemann, 1830)**

**Distribution in Iran:** Khuzestan (Dousti, 1999; Dousti et al., 2000), Guilan (Motamedinia et al., 2002), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004), Semnan (Mehrabi et al., 2006), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012), Kerman (Khosravian, 2014).

**General distribution:** African continent, Arabian Peninsula, Israel, Southern Europe.

***Ischiodon scutellaris* (Fabricius, 1805)**

**Distribution in Iran:** Iran (Peck, 1988), Fars (Alichi et al., 2000; Gharali et al., 2000), Khuzestan (Dousti, 1999; Dousti et al., 2000), Semnan (Mehrabi & Ssymank, 2008), Guilan (Bagheri, 2007), Zanjan (Naderloo, 2010), Sistan & Baluchistan (Hoodiani, 2010), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012), Alborz (Hezarkhani, 2013 as its synonym *Simosyrphus scutellaris*), Kerman (Khosravian, 2014), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2015), Ardabil (Azimi & Pashaei Rad, 2017), Mazandaran (Babaei, 2018).

**General distribution:** Asiatic parts of the Palaearctic from Iran to Japan, Australasian, Crimea, Greece, Oceania, Oriental, Turkey.

**Genus *Lapposyrphus* Dusek Laska, 1967**

Type species: *Scaeva lapponica* Zetterstedt, 1838.

***Lapposyrphus lapponicus* (Zetterstedt, 1838)**

**Distribution in Iran:** Semnan (Jabbari et al., 2013) as its synonym *Eupeodes lapponicus* (Zetterstedt, 1838).

**General distribution:** Palaearctic, Alaska to California.

**Genus *Lejogaster* Rondani, 1857**

Type species: *Chrysogaster tarsata* Meigen, 1822.

***Lejogaster metallina* (Fabricius, 1776)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia, 2010; Khaghaninia et al., 2010c; Vosughian, 2013; Arbabi, 2017), Kurdistan (Hoseini et al., 2014).

**General distribution:** Palaearctic.

- *Lejogaster nigricans* (Meigen, 1822), Synonym of *Melanogaster nigricans* (Stackelberg, 1922).
- *Lejogaster splendida* (Meigen, 1822), Synonym of *Lejogaster tarsata* Meigen, 1822.

***Lejogaster tarsata* (Megerle in Meigen, 1822)**

**Distribution in Iran:** Khorasan, Sistan & Baluchistan, Kerman (Peck, 1988 as its synonym *Lejogaster splendida*), East Azerbaijan (Shakeryari & Khaghaninia, 2012; Vosughian, 2013; Arbabi, 2017), Kurdistan (Hoseini et al., 2014), Lorestan (Jafari Moqadam & Pashaei Rad, 2015), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Palaearctic.

**Genus *Leucozona* Schiner, 1860**

Type species: *Musca lucorum* Linnaeus, 1758.

***Leucozona lucorum* (Linnaeus, 1758)**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Shakeryari et al., 2014).

**General distribution:** Europe, Japan, Nearctic.

**Genus *Mallota* Meigen, 1822**

Type species: *Syrphus fuciformis* Fabricius, 1794.

- *Mallota auricoma* Sack, 1910, Synonym of *Mallota rossica* Portschinsky, 1877.

***Mallota cimbiciformis* (Fallén, 1817)**

**Distribution in Iran:** North of Iran (Stackelberg, 1950).

**General distribution:** Europe, North Africa and northern Iran.

***Mallota fuciformis* (Fabricius, 1794)**

**Distribution in Iran:** North of Iran (Stackelberg, 1950).

**General distribution:** Central and Southern Europe, Iran, Transcaucasia.

***Mallota rossica* Portschinsky, 1877**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010a as its synonym *Mallota auricoma* Sack, 1910).

**General distribution:** China, Korea, Kyrgyzstan, Mongolia, Russia.

***Mallota zarudniana* Stackelberg, 1950**

**Distribution in Iran:** Iran (Stackelberg, 1950).

**General distribution:** Iran.

**Genus *Melangyna* Verrall, 1901**

Type species: *Melanostoma quadrimaculata* Verrall, 1873.

- *Melangyna cincta* (Fallén, 1817), Synonym of *Meligramma cincta* (Fallén, 1817).

***Melangyna lasiophthalma* (Zetterstedt 1843)**

**Distribution in Iran:** Mazandaran (Kazerani et al., 2013).

**General distribution:** Holarctic.

***Melangyna umbellatarum* (Fabricius, 1794)**

**Distribution in Iran:** Mazandaran (Ghahari et al., 2008).

**General distribution:** Holarctic.

**Genus *Melanogaster* Rondani, 1857**

Type species: *Melanogaster nubilus* Rondani, 1857.

***Melanogaster hirtella* Loew, 1843**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Shakeryari et al., 2012; Vosughian, 2013), Tehran (Ahmadian & Pashaei Rad, 2010b, 2012 as its synonym *Chrysogaster hirtella* Loew, 1843).

**General distribution:** Palaearctic.

***Melanogaster nigricans* (Stackelberg, 1922)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010a) as its synonym *Lejogaster nigricans* (Meigen, 1822).

**General distribution:** Europe.

***Melanogaster nuda* (Macquart, 1829)**

**Distribution in Iran:** East Azerbaijan (Gharali & Lotfalizadeh, 2001 as its synonym *Chrysogaster viduata*, Khaghaninia et al., 2010b; Arbabi, 2017), Mazandaran (Gilasian, 2004; Babaei, 2018), Kurdistan (Hoseini et al., 2014).

**General distribution:** Western Palaearctic.

***Melanogaster parumplicata* Loew, 1840**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Shakeryari et al., 2012; Vosughian, 2013), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Europe.

**Genus *Melanostoma* Schiner, 1860**

Type species: *Musca mellina* Linnaeus, 1758.

- *Melanostoma dubium* (Zetterstedt, 1837), Synonym of *Melanostoma mellinum* (Linnaeus, 1758).

***Melanostoma mellinum* (Linnaeus, 1758)**

**Distribution in Iran:** Iran (Peck, 1988), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Ashrafi, 2010; Mohammadzadeh, 2017), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002; Davaji, 2018), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Razavi Khorasan (Amirimoghdam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Semnan (Mehrabi et al., 2006), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b 2011), Zanzan (Naderloo, 2010), Sistan & Baluchistan (Hoodiani, 2010), Lorestan (Bahirai, 2011), East Azerbaijan (Ehteshamnia et al., 2010 as its synonym *Melanostoma dubium* (Zetterstedt, 1837); Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Alborz (Hezarkhani, 2013; Shahir, 2021), Kerman (Khosravian, 2014; Alitavakoli, 2015).

**General distribution:** Holarctic.

***Melanostoma scalare* (Fabricius, 1794)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004; Babaei, 2018), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Kerman (Alitavakoli, 2015), Ardabil (Azimi & Pashaei Rad, 2017), West Azerbaijan (Mohammadzadeh, 2017), Alborz (Shahir, 2021).

**General distribution:** Eastern Afrotropical, Oriental and Palaearctic.

**Genus *Meligramma* Fery, 1946**

Type species: *Scaeva guttata* Fallén, 1817.

***Meligramma cincta* (Fallén, 1817)**

**Distribution in Iran:** Golestan (Gilasian, 2007).

**General distribution:** Europe.

***Meligramma euchroma* (Kowarz, 1885)**

**Distribution in Iran:** East Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001 as its synonym *Epistrophe euchroma*).

**General distribution:** Europe, Siberia and Transcaucasia.

**Genus *Meliscaeva* Frey, 1946**

Type species: *Scaeva cinctella* Zetterstedt, 1843.

***Meliscaeva auricollis* (Meigen, 1822)**

**Distribution in Iran:** Markazi (Modarres Awal, 1994 as its synonym *Episyrphus auricollis*), Guilan (Motamedinia et al., 2002 as its synonym *Episyrphus auricollis*), Tehran (Ahmadian & Pashaei Rad, 2010b), West Azerbaijan (Ashrafi, 2010), Zanjan (Naderloo, 2010), Mazandaran (Babaei, 2018).

**General distribution:** Western Palaearctic, including Canary Isles.

***Meliscaeva cinctella* (Zetterstedt, 1843)**

**Distribution in Iran:** Mazandaran (Gilasian & Vujić, 2004; Gilasian, 2004).

**General distribution:** Holarctic.

**Genus *Merodon* Meigen, 1803**

Type species: *Syrphus clavipes* Fabricius, 1781.

***Merodon aberrans* Egger, 1860**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010b).

**General distribution:** Western Palaearctic.

***Merodon armipes* Rondani, 1843**

**Distribution in Iran:** Iran (Peck, 1988).

**General distribution:** Iran, Israel, Europe and North Africa.

***Merodon aurifer* Loew, 1862**

**Distribution in Iran:** Ilam and Qazvin (Gharali, 2008 as its synonym *Merodon distinctus* Palma, 1863).

**General distribution:** Greece, Italy, parts of the former Yugoslavia, Spain and Turkey.

***Merodon avidus* (Rossi, 1790)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004; Babaei, 2018), Ilam and Qazvin (Gharali, 2008).

**General distribution:** Mediterranean Basin.

***Merodon brevis* Paramonov, 1925**

**Distribution in Iran:** Ardabil and Mazandaran (Gilasian et al., 2017).

**General distribution:** Armenia.

***Merodon clavipes* Fabricius, 1781**

**Distribution in Iran:** Ilam and Qazvin (Gharali, 2008).

**General distribution:** Europe, North Africa, Turkey and Ukraine.

- *Merodon distinctus* Palma, 1863, Synonym of *Merodon aurifer* Loew, 1862.
- *Merodon elegans* Hurkmans, 1993, Synonym of *Merodon femoratus* Sack, 1913.

***Merodon equestris* (Fabricius, 1794)**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Palaeartic and North America.

***Merodon femoratoides* Paramonov, 1925**

**Distribution in Iran:** Ilam and Qazvin (Gharali, 2008).

**General distribution:** Greece, North Africa (Algeria), parts of European Russia, Turkey, Ukraine (Crimea).

***Merodon femoratus* Sack, 1913**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2012 as its synonym *Merodon elegans* Hurkmans, 1993).

**General distribution:** Mediterranean Basin, Crimea and Transcaucasia.

***Merodon fulcratus* (Becker, 1913)**

**Distribution in Iran:** Khorasan (Peck, 1988), Kerman (Khosravian, 2014).

**General distribution:** Iran, Transcaucasia, Turkey.

***Merodon hirtus* (Sack, 1932)**

**Distribution in Iran:** Ilam (Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012).

**General distribution:** Cyprus, Jordan, Israel, Turkey.

***Merodon hypochrysos* Hurkmans, 1993**

**Distribution in Iran:** Ilam and Qazvin (Gharali, 2008).

**General distribution:** Iran, Turkey.

***Merodon latifemoris* Radenković & Vujić, 2011**

**Distribution in Iran:** East Azerbaijan (Poutrabi et al., 2013).

**General distribution:** Greece, Iran.

***Merodon mixtum* Vujić, Radenković et Likov, 2019**

**Distribution in Iran:** Golestan and Mazandaran (Vujić et al., 2019).

**General distribution:** Iran.

***Merodon nanus* (Sack, 1931)**

**Distribution in Iran:** Iran (Peck, 1988).

**General distribution:** Armenia, Greece, Iran, Israel, Lebanon, Palestine, Syria, Turkey.

***Merodon ortus* Šašić zorić, Ačanski & Vujić, 2020**

**Distribution in Iran:** East Azerbaijan (Vujić et al., 2020).

**General distribution:** Caucasus of Azerbaijan.

***Merodon persicus* Hurkmans, 1993**

**Distribution in Iran:** Fars (Hurkmans, 1993).

**General distribution:** Iran.

***Merodon pruni* (Rossi, 1790)**

**Distribution in Iran:** Khuzestan (Dousti, 1999; Dousti et al., 2000), Lorestan (Bahirai, 2011).

**General distribution:** Western Palaearctic.

***Merodon quadrinotatus* (Sack, 1931)**

**Distribution in Iran:** Fars (Gilasian et al., 2017).

**General distribution:** Iraq, Turkey.

***Merodon satdagensis* Hurkmans, 1993**

**Distribution in Iran:** Ilam and Qazvin (Gharali, 2008).

**General distribution:** Turkey.

***Merodon schachtii* Hurkmans, 1993**

**Distribution in Iran:** Kermanshah (Gilasian et al., 2017).

**General distribution:** Turkey.

***Merodon serrulatus* Wiedemann in Meigen, 1822**

**Distribution in Iran:** Golestan (Gilasian et al., 2017).

**General distribution:** Palaearctic.

***Merodon taniniensis* Hurkmans, 1993**

**Distribution in Iran:** East Azerbaijan (Lotfalizadeh & Gharaei, 2000), Kurdistan (Hasanbeigi, 2012).

**General distribution:** Turkey.

***Merodon vandergooti* Hurkmans, 1993**

**Distribution in Iran:** Isfahan and Fars (Gilasian et al., 2017).

**General distribution:** Turkey.

***Merodon velox* Loew, 1869**

**Distribution in Iran:** North Khorasan (Gilasian et al., 2017).

**General distribution:** Balkan Peninsula, Greece, Transcaucasia, Turkey.

***Merodon warncke* Hurkmans, 1993**

**Distribution in Iran:** Iran (Amirimoghadam & Sirjani, 2004).

**General distribution:** Turkey.

**Genus *Mesembrius* Rondani, 1857**

Type species: *Helophilus peregrinus* Loew, 1846.

***Mesembrius peregrinus* (Loew, 1846)**

**Distribution in Iran:** Fars (Gharali et al., 2000), Guilan (Bagheri, 2007).

**General distribution:** Palaearctic.

**Genus *Metadon* Reemer, 2013**

Type species: *Microdon wulp* Mik, 1899:143.

***Metadon persicus* Gilasian & Reemer [in Gilasian et al.], 2015**

**Distribution in Iran:** Lorestan (Gilasian et al., 2015).

**General distribution:** Iran.

**Genus *Milesia* Latreille, 1804**

Type species: *Syrphus crabroniformis* Fabricius, 1775.

***Milesia semiluctifera* (Villers, 1789)**

**Distribution in Iran:** Qazvin (Gharali & Reemer, 2014).

**General distribution:** Europe, Middle East, Transcaucasia, east into Turkmenistan.

**Genus *Myathropa* Rondani, 1845**

Type species: *Musca florea* Linnaeus, 1758.

***Myathropa florea* (Linnaeus, 1758)**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998), Guilan (Motamedinia et al., 2002), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Tehran (Ahmadian & Pashaei Rad, 2011), Alborz (Hezarkhani, 2013; Shahir, 2021), Kurdistan (Hoseini et al., 2014), Kerman (Alitavakoli, 2015), Lorestan (Jafari Moqadam & Pashaei Rad, 2015).

**General distribution:** Palaearctic.

**Genus *Myolepta* Newman, 1838**

Type species. *Musca luteola* Gmelin, 1790.

***Myolepta pazukii* Gilasian & Reemer [in Gilasian et al.], 2016**

**Distribution in Iran:** Fars (Gilasian et al., 2016).

**General distribution:** Iran.

***Myolepta trojana* Reemer & Hauser, 2005**

**Distribution in Iran:** Ilam (Gharali & Reemer, 2008).

**General distribution:** Azerbaijan, Greece, Turkey.

**Genus *Neoascia* Williston, 1886**

Type species: *Syrphus podagricus* Fabricius, 1775.

***Neoascia annexa* (Müller, 1776)**

**Distribution in Iran:** East Azerbaijan (Vosughian, 2013), Tehran (Gilasian et al., 2017).

**General distribution:** Europe Transcaucasia.

***Neoascia meticulosa* (Scopoli, 1763)**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012).

**General distribution:** Palaearctic.

***Neoascia obliqua* Coe, 1940**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012, Vosughian, 2013), Lorestan (Jafari Moqadam & Pashaei Rad, 2015), West Azerbaijan (Mohammadzadeh, 2017), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2019), Alborz (Shahir, 2021).

**General distribution:** Europe and Transcaucasia.

***Neoascia podagrica* (Fabricius, 1775)**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998), Guilan (Motamedinia et al., 2002), Zanzan (Naderloo, 2010), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013).

**General distribution:** Palaearctic.

***Neoascia tenur* (Harris, 1780)**

**Distribution in Iran:** East Azerbaijan (Vosughian, 2013).

**General distribution:** Europe and Turkey.

***Neoascia unifasciata* (Strobl, 1898)**

**Distribution in Iran:** East Azerbaijan (Vosughian, 2013).

**General distribution:** Europe.

**Genus *Neocnemodon* Goffe, 1944**

Type species: *Cnemodon latitarsis* Egger, 1776.

***Neocnemodon fulvimanus* (Zetterstedt, 1843)**

**Distribution in Iran:** Kurdistan (Hoseini & Khaghaninia, 2015 as its synonym *Heringia* (*Neocnemodon*) *fulvimanus*).

**General distribution:** Europe (Austria, Finland, Italy, Norway, Sweden).

***Neocnemodon latitarsis* (Egger, 1865)**

**Distribution in Iran:** Mazandaran (Babaei, 2018; Babaei et al., 2019 as its synonym *Heringia* (*Neocnemodon*) *latitarsis*).

**General distribution:** Europe, Transcaucasia and Nearctic.

**Genus *Orthonevra* Macquart, 1829**

Type species: *Chrysogaster elegans* Meigen, 1822.

***Orthonevra brevicornis* Loew, 1840**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Shakeryari et al., 2012; Vosughian, 2013), Kurdistan (Hoseini et al., 2014), West Azerbaijan (Mohammadzadeh, 2017).

**General Distribution:** Europe, Transcaucasia, eastwards into Siberia.



***Orthonevra frontalis* (Loew, 1843)**

**Distribution in Iran:** Iran (Peck, 1988), East Azerbaijan (Arbabi, 2017).

**General distribution:** Palaearctic.

- *Orthonevra longicornis* (Loew, 1843), Synonym of *Riponnensia longicornis* (Loew, 1843).

***Orthonevra nobilis* Fallén, 1817**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Shakeryari et al., 2012; Vosughian, 2013), Kurdistan (Hoseini et al., 2014).

**General distribution:** Palaearctic.

***Orthonevra plumbago* (Loew, 1840)**

**Distribution in Iran:** East Azerbaijan (Vosughian, 2013).

**General distribution:** Europe.

**Genus *Palumbia* Rondani, 1865**

Type species: *Palumbia sicula* Rondani, 1865.

***Palumbia eristaloides* (Portschinsky, 1887)**

**Distribution in Iran:** Alborz, Isfahan, Kerman, Kohgiluyeh & Boyer Ahmad (Gilasian et al., 2017).

**General distribution:** Armenia, Lebanon, Northern Turkey.

**Genus *Paragus* Latreille, 1804**

Type species: *Syrphus bicolor* Fabricius, 1794.

***Paragus abrogans* Goeldlin, 1971**

**Distribution in Iran:** Iran (Peck, 1988 as a synonym of *Paragus albipes*), West Azerbaijan (Ashrafi, 2010), Zanzan (Naderloo, 2010), Khorasan-e Razavi (Rastegar Moghadam & Pashaei Rad, 2016), Alborz (Shahir, 2021).

**General distribution:** Greece, Iran, Kyrgyzstan, Turkey, Turkmenistan.

***Paragus albifrons* (Fallén, 1817)**

**Distribution in Iran:** Iran (Peck, 1988), Isfahan (Pourghasem, 2001), Ilam (Jalilian et al., 2010), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), West Azerbaijan (Ashrafi, 2010), Zanzan (Naderloo, 2010), Kurdistan (Hasanbeigi, 2012), Kerman (Alitavakoli, 2015), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2015), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Palaearctic.

***Paragus albipes* Gimmerthal, 1842**

**Distribution in Iran:** Iran (Peck, 1988 as its synonym *Paragus abrogans*), Kerman (Khosravian, 2014)

**General distribution:** Central Europe, Middle Asia and Iran.

***Paragus antoinettae* Goeldlin De Tiefenau et Lucas, 1981**

**Distribution in Iran:** Iran (Amirimoghadam & Sirjani, 2004).

**General distribution:** Europe and Turkey.

***Paragus azureus* Hull, 1946**

**Distribution in Iran:** Khuzestan (Dousti, 1999; Dousti et al., 2000), Ilam (Jalilian et al., 2010).

**General distribution:** Turkey, Armenia, Israel, Egypt, Yemen and eastern parts of the Afrotropical.

***Paragus bicolor* (Fabricius, 1794)**

**Distribution in Iran:** Iran (Peck, 1988), Sistan & Balouchestan (Modarres Awal, 1994; Hoodiani, 2010), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Ashrafi, 2010; Mohammadzadeh, 2017), Fars (Alichi et al., 2000), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002), Guilan (Motamedinia et al., 2002), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Zanzan (Naderloo, 2010), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Alborz (Hezarkhani, 2013; Shahir, 2021), Kerman (Khosravian, 2014), Mazandaran (Babaei, 2018).

**General distribution:** Holarctic.

***Paragus cinctus* Schiner & Egger, 1853**

**Distribution in Iran:** Kurdistan (Khaghaninia & Hosseini, 2013).

**General distribution:** Europe, parts of southern Russia, Ukraine, Tajikistan and Turkmenia, North Africa (Morocco).

***Paragus compeditus* Wiedemann, 1830**

**Distribution in Iran:** Bushehr (Peck, 1988 as its synonym *Paragus luteus*), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Malkeshi et al., 2004), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Zanzan (Naderloo, 2010), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014), Khorasan-e Razavi (Entezari, 2016).

**General distribution:** Afrotropical and Palaearctic.

***Paragus finitimus* Goeldlin De Tiefenau, 1971**

**Distribution in Iran:** Iran (Peck, 1988).

**General distribution:** Palaearctic.

***Paragus gussakovskii* (Bańkowska, 2000)**

**Distribution in Iran:** Khorasan-e Razavi (Shojaei Hesari et al., 2016).

**General distribution:** Tajikistan, Uzbekistan.

***Paragus haemorrhous* (Meigen, 1822)**

**Distribution in Iran:** Guilan (Motamedinia et al., 2002, 2004; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Kurdistan (Hasanbeigi, 2012), Alborz (Hezarkhani, 2013; Shahir, 2021), East Azerbaijan (Vosughian, 2013), Kerman (Khosravian, 2014), Ardabil (Azimi & Pashaei Rad, 2017), West Azerbaijan (Mohammadzadeh, 2017), Golestan (Davaji, 2018), Mazandaran (Babaei, 2018).

**General distribution:** Afrotropical and Holarctic.

***Paragus hyalopteri* Marcos-Garcia & Rojo, 1994**

**Distribution in Iran:** Khorasan-e Razavi (Entezari 2016).

**General distribution:** Central Asia (Kyrgyzstan, Tajikistan, Uzbekistan), Europe (Spain, Italy).

***Paragus majoranae* Rondani, 1857**

**Distribution in Iran:** Iran (Amirimoghadam & Sirjani, 2004).

**General distribution:** Europe (France, Germany, Greece, Italy, North Macedonia, Montenegro, Serbia).

***Paragus pecchiolii* Rondani, 1857**

**Distribution in Iran:** West Azerbaijan (Samin et al., 2015).

**General distribution:** Western Palaearctic.

***Paragus quadrifasciatus* Meigen, 1822**

**Distribution in Iran:** Iran (Peck, 1988), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Ilam (Jalilian et al., 2010), Zanzan (Naderloo, 2010), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014), Ardabil (Azimi & Pashaei Rad, 2017), Mazandaran (Babaei, 2018).

**General distribution:** Palaearctic.

***Paragus radjabii* Gilasian & Sorokina, 2011**

**Distribution in Iran:** Tehran (Gilasian & Sorokina, 2011), Khorasan-e Razavi (Entezari 2016).

**General distribution:** Iran.

***Paragus romanicus* Stănescu, 1992**

**Distribution in Iran:** Kerman (Khosravian, 2014; Khosravian et al., 2015).

**General distribution:** Central and Southern Europe, Turkey.

***Paragus serratus* (Fabricius, 1805)**

**Distribution in Iran:** Semnan (Mehrabi & Ssymank, 2008).

**General distribution:** Afghanistan and Oriental.

***Paragus tibialis* (Fallén, 1817)**

**Distribution in Iran:** Iran (Peck, 1988), Khorasan, Markazi, Zanzan (Modarres Awal, 1994), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Ashrafi, 2010; Mohammadzadeh, 2017), Fars (Alichi et al., 2000), Khorasan-e Razavi (Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Mazandaran (Gilasian & Vujić, 2004), Semnan (Mehrabi et al., 2006), Tehran (Modarres Awal, 1994, Ahmadian & Pashaei Rad, 2010b, 2011), Lorestan (Bahirai, 2011), East Azerbaijan (Vosughian, 2013; Arbabi, 2017), Kerman (Alitavakoli, 2015), Ardabil (Azimi & Pashaei Rad, 2017), Alborz (Shahir, 2021).

**General distribution:** Western Palaearctic.

**Genus *Parasyrphus* Matsumura, 1917**

Type species: *Syrphus aeneostoma* Matsumura, 1917.

***Parasyrphus nigratarsis* (Zetterstedt, 1843)**

**Distribution in Iran:** Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Holarctic.

***Parasyrphus punctulatus* (Verrall, 1873)**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2010b).

**General distribution:** Palaearctic.

**Genus *Parhelophilus* Grischner, 1897**

Type species: *Syrphus frutetorum* Fabricius, 1775.

***Parhelophilus versicolor* (Fabricius, 1794)**

**Distribution in Iran:** Guilan (Bagheri, 2007; Pashaei Rad et al., 2008), Kurdistan (Hasanbeigi, 2012), East Azerbaijan (Vosughian, 2013).

**General distribution:** Palaearctic.

**Genus *Pelecocera* Meigen, 1822**

Type species: *Pelecocera tricincta* Meigen, 1822.

- *Pelecocera latifrons* Loew, 1856, Synonym of *Pseudopelecocera latifrons* (Loew, 1856).
- *Pelecocera persiana* Kuznetzov, 1989, Synonym of *Pseudopelecocera persiana* (Kuznetzov, 1989).

**Genus *Pipiza* Fallén, 1810**

Type species: *Musca noctiluca* Linnaeus, 1758.

***Pipiza accola* Violovitsh, 1985**

**Distribution in Iran:** Mazandaran & Guilan (Kazerani et al., 2012b).

**General distribution:** Asiatic Russia (Siberia), Europe, Ukraine.

- *Pipiza bimaculata* Meigen, 1822, Synonym of *Pipiza notata* Meigen, 1822.

***Pipiza lugubris* (Fabricius, 1775)**

**Distribution in Iran:** East Azerbaijan (Arbabi, 2017).

**General distribution:** Europe and Georgia.

***Pipiza notata* Meigen, 1822**

**Distribution in Iran:** North of Iran (Kazerani et al., 2012c as its synonym *Pipiza bimaculata* Meigen, 1822).

**General distribution:** Europe and Mongolia.

**Genus *Pipizella* Rondani, 1856**

Type species: *Mulio virens* Fabricius, 1805.

***Pipizella annulata* (Macquart, 1829)**

**Distribution in Iran:** East Azerbaijan (Arbabi, 2017).

**General distribution:** Europe.

***Pipizella caucasica* Skufjin, 1976**

**Distribution in Iran:** Mazandaran (Gilasian, 2004; van Steenis & Lucas, 2011).

**General distribution:** Caucasus (Georgia) and northeast Turkey.

***Pipizella curvitibia* Stackelberg, 1960**

**Distribution in Iran:** Kurdistan (Hoseini & Khaghaninia, 2015).

**General distribution:** Northeast Turkey and Transcaucasia.

***Pipizella divicoi* (Goeldlin de Tiefenau, 1974)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2010b; Arbabi, 2017), Zanjan (Naderloo, 2010), Kurdistan (Hoseini & Khaghaninia, 2015).

**General distribution:** Palaearctic, but not in northern Africa.

***Pipizella maculipennis* Meigen, 1822**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Khaghaninia & Shakeryari, 2012; Vosughian, 2013), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Europe and Turkey.

***Pipizella mongolorum* Stackelberg, 1952**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012).

**General distribution:** Europe, central and eastern Siberia, Mongolia.

***Pipizella ochreobasalis* van Steenis & Lucas, 2011**

**Distribution in Iran:** Fars (van Steenis & Lucas, 2011).

**General distribution:** Iran and Turkey.

***Pipizella viduata* (Linnaeus, 1758)**

**Distribution in Iran:** East Azerbaijan (Shakeryari, 2012; Khaghaninia & Shakeryari, 2012; Vosughian, 2013), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Europe, North Africa, Transcaucasia, European parts of Russia into Siberia.

***Pipizella virens* (Fabricius, 1805)**

**Distribution in Iran:** Iran (Peck, 1988), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013), Khorasan-e Razavi (Shojaei Hesari et al., 2015), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Palaearctic.

**Genus *Platycheirus* Lepeletier & Serville, 1828**

Type species: *Syrphus scutatus* Meigen, 1822.

***Platycheirus albimanus* (Fabricius, 1781)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004), Ilam (Jalilian et al., 2010), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), West Azerbaijan (Mohammadzadeh, 2017), Alborz (Shahir, 2021).

**General distribution:** Holarctic and Philippines.

***Platycheirus ambiguus* (Fallén, 1817)**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2010a, 2011).

**General Distribution.** Nearctic, Oriental, Palaearctic.

***Platycheirus fulviventris* (Macquart, 1829)**

**Distribution in Iran:** Guilan (Motamedinia et al., 2002, 2004), Khorasan-e Razavi (Shojaei Hesari et al., 2015), Mazandaran (Babaei, 2018).

**General distribution:** Palaearctic, but not in northern Africa.

***Platycheirus immarginatus* (Zetterstedt, 1849)**

**Distribution in Iran:** Khorasan-e Razavi (Shojaei Hesari et al., 2016).

**General distribution:** Europe and Nearctic.

***Platycheirus jaerensis* Nielsen, 1971**

**Distribution in Iran:** Mazandaran (Zamani et al., 2018).

**General distribution:** Alaska and Canada, Europe.

***Platycheirus manicatus* (Meigen, 1822)**

**Distribution in Iran:** East Azerbaijan (Ehteshamnia et al., 2010).

**General distribution:** Alaska and Greenland, Palaearctic.

***Platycheirus occultus* Goeldlin, Maibach & Speight, 1990**

**Distribution in Iran:** East Azerbaijan (Vosughian, 2013; Vosughian et al., 2013), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Palaearctic.

***Platycheirus scutatus* (Meigen, 1822)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004), East Azerbaijan (Shakeryari, 2012).

**General distribution:** Palaearctic and western North America.

***Platycheirus sticticus* (Meigen, 1822)**

**Distribution in Iran:** Tehran (Ahmadian & Pashaei Rad, 2010a, 2011).

**General distribution:** Europe, into Russia and on to eastern Siberia.

**Genus *Pocota* Le Peletier & Serville, 1828**

Type species: *Milesia apicata* Meigen, 1822.

***Pocota hyrcanica* Gilasian & Hauser [*in* Gilasian et al.], 2017**

**Distribution in Iran:** Golestan (Gilasian et al., 2017).

**General distribution:** Azerbaijan.

**Genus *Pseudodoros* Becker, 1903**

Type species: *Pseudodoros nigricollis* Becker, 1903.

***Pseudodoros nigricollis* Becker, 1903**

**Distribution in Iran:** Khuzestan (Gilasian et al., 2017).

**General distribution:** Afrotropical and Palaearctic.

**Genus *Pseudopelecocera* Vujić & Radenković, 2018**

Type: *Pelecocera latifrons* Loew, 1856.

***Pseudopelecocera latifrons* (Loew, 1856)**

**Distribution in Iran:** Kurdistan (Kamangar et al., 2006 as its synonym *Pelecocera latifrons* Loew, 1856).

**General distribution:** Central Europe and Balkan Peninsula into European parts of Russia and the near East.

***Pseudopelecocera persiana* (Kuznetsov, 1989)**

**Distribution in Iran:** East Azerbaijan (Kuznetsov, 1989), Qazvin (Mengual et al., 2015b), Alborz (Shahir, 2021) all as its synonym *Pelecocera persiana* Kuznetsov, 1989.

**General distribution:** Iran.

**Genus *Rhingia* Scopoli, 1763**

Type species: *Conops rostrata* Linnaeus, 1758.

***Rhingia rostrata* (Linnaeus, 1758)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004).

**General distribution:** Europe, Transcaucasia and European parts of Russia into Siberia.

**Genus *Riponnensia* Maibach et al., 1994**

Type species: *Orthonevra splendens* (Meigen, 1822).

***Riponnensia longicornis* (Loew, 1843)**

**Distribution in Iran:** Iran (Peck, 1988 as its synonym *Orthonevra longicornis* (Loew, 1843)), East Azerbaijan (Arbabi, 2017).

**General distribution:** Mediterranean Basin.

**Genus *Scaeva* Fabricius, 1850**

Type species: *Musca pyrastris* Linnaeus, 1758.

***Scaeva albomaculata* (Macquart, 1842)**

**Distribution in Iran:** Iran (Kuznetsov, 1985), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Malkeshi et al., 2004; Ashrafi, 2010), Chaharmahal & Bakhtiari (Noorbakhsh, 2000), Fars (Alichi et al., 2000), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Shojaei Hesari & Pashaei Rad, 2015), Sistan & Baluchistan (Malkeshi et al., 2004; Hoodiani, 2010), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b), Zanjan (Naderloo, 2010), Lorestan (Malkeshi et al., 2004; Bahirai, 2011), Alborz (Malkeshi et al., 2004; Hezarkhani, 2013), Kerman (Khosravian, 2014; Alitavakoli, 2015), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Palaearctic, but not in Central and Northern Europe.

***Scaeva dignota* (Rondani, 1857)**

**Distribution in Iran:** Khuzestan (Dousti, 1999; Dousti et al., 2000), Mazandaran (Gilasian & Vujić, 2004), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014).

**General distribution:** Western Palaearctic.

***Scaeva latimaculata* (Brunetti, 1923)**

**Distribution in Iran:** Iran (Peck, 1988), Golestan (Goldasteh et al., 2002; Davaji, 2018), Khorasan-e Razavi (Amirimoghadam et al., 2004; Shojaei Hesari & Pashaei Rad, 2015), Semnan (Mehrabi et al., 2006), Ilam (Jalilian et al., 2010).

**General distribution:** Afghanistan, Iran, Middle Asia, Oriental.

***Scaeva pyrastris* (Linnaeus, 1758)**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001), Golestan (Goldasteh et al., 2002; Malkeshi et al., 2004; Davaji, 2018), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Hosseini & Sadeghi, 2008), Lorestan (Malkeshi et al., 2004), Alborz (Malkeshi et al., 2004; Hezarkhani, 2013), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Zanjan (Naderloo, 2010), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Palaearctic, India, and western North America.

***Scaeva rossica* Kuznetsov, 1985**

**Distribution in Iran:** Tehran (Kuznetsov, 1985), Golestan (Goldasteh et al., 2002).

**General distribution:** Europe and Iran.

***Scaeva selenitica* (Meigen, 1822)**

**Distribution in Iran:** Fars (Alichi et al., 2000), Mazandaran (Gilasian & Vujić, 2004), Ardabil (Azimi & Pashaei Rad, 2017), Golestan (Davaji, 2018).

**General distribution:** Palaearctic.

**Genus *Sericomyia* Meigen, 1803**

Type species: *Musca lappona* Linnaeus, 1758.

***Sericomyia silentis* (Harris, 1776)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004).

**General distribution:** Palaearctic, but not in northern Africa.

**Genus *Spazigaster* Rondani, 1843**

Type species: *Spazigaster apennini* Rondani, 1843.

***Spazigaster ambulans* (Fabricius, 1798)**

**Distribution in Iran:** Qazvin (Gharali & Reemer, 2010), East Azerbaijan (Khaghaninia et al., 2010c; Shakeryari, 2012), Zanjan (Naderloo, 2010, Naderloo et al., 2013), Lorestan (Jafari Moqadam & Pashaei Rad, 2015), Mazandaran (Babaei, 2018).

**General distribution:** Balkans, Carpathians, Caucasus, Central Europe, Turkey.

**Genus *Sphaerophoria* Le Peletier et Serville, 1828**

Type species: *Musca scripta* Linnaeus, 1758.

***Sphaerophoria bengalensis* Macquart, 1842**

**Distribution in Iran:** Iran (Peck, 1988), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002), Kurdistan (Kamangar et al., 2004 as its synonym *S. turkmenica*, Hasanbeigi, 2012 as its synonym *S. turkmenica*), Mazandaran (Gilasian & Vujić, 2004 as its synonym *S. turkmenica*), Ilam (Jalilian et al., 2010 as its synonym *S. turkmenica*, Bedoreh et al., 2010 as its synonym *S. turkmenica*, Bedoreh & Ansari pour, 2012 as its synonym *S. turkmenica*), West Azerbaijan (Ashrafi, 2010 as its synonym *S. turkmenica*), Zanjan (Naderloo, 2010 as its synonym *S. turkmenica*), Lorestan (Bahirai, 2011 as its synonym *S. turkmenica*), Alborz (Hezarkhani, 2013 as its synonym *S. turkmenica*), Kerman (Khosravian, 2014), Khorasan-e Razavi (Shojaei Hesari & Pashaei Rad, 2015 as its synonym *S. turkmenica*).

**General distribution:** Arabian Peninsula, Central and Eastern Palaearctic, Middle East, northern India, Pakistan, Transcaucasia.

***Sphaerophoria chongjini* Bankowska, 1964**

**Distribution in Iran:** Alborz (Shahir, 2021).

**General distribution:** Europe, Japan, Korea, Ukraine and Asiatic parts of Russia.

***Sphaerophoria philanthus* (Meigen, 1822)**

**Distribution in Iran:** West Azerbaijan (Ashrafi, 2010; Ashrafi & Pashaei Rad, 2010).

**General distribution:** Central and Northern Europe and North America.



***Sphaerophoria rueppelli* (Wiedemann, 1830)**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Ashrafi, 2010), Khuzestan (Dousti, 1999; Dousti et al., 2000), Golestan (Goldasteh et al., 2002; Malkeshi et al., 2004; Davaji, 2018), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Shojaei Hesari & Pashaei Rad, 2015), Sistan & Baluchistan (Malkeshi et al., 2004; Golmohammadi & Khiaban, 2004), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Semnan (Mehrabi et al., 2006), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b), Zanjan (Naderloo, 2010), Lorestan (Bahirai, 2011), Alborz (Hezarkhani, 2013), Kerman (Khosravian, 2014; Alitavakoli, 2015), Ardabil (Azimi & Pashaei Rad, 2017), East Azerbaijan (Arbabi, 2017).

**General distribution:** Afrotropical, Palaearctic.

***Sphaerophoria scripta* (Linnaeus, 1758)**

**Distribution in Iran:** Khorasan (Modarres Awal, 1994), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Ashrafi, 2010; Mohammadzadeh, 2017), Fars (Alichi et al., 2000), Khuzestan (Dousti, 1999; Dousti et al., 2000), Qazvin (Mohammadbeigi, 2000), Isfahan (Pourghasem, 2001), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002; Davaji, 2018), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004; Hoodiani, 2010), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), Zanjan (Naderloo, 2010), Lorestan (Bahirai, 2011), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Alborz (Hezarkhani, 2013; Shahir, 2021), Kerman (Khosravian, 2014; Alitavakoli, 2015), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Greenland, Kashmir, Nepal, Palaearctic.

- *Sphaerophoria turkmenica* Bankowska, 1964, Synonym of *Sphaerophoria bengalensis* Macquart, 1842.

**Genus *Sphegina* Meigen, 1822**

Type species: *Milesia clunipes* Fallén, 1816.

***Sphegina clunipes* Fallén 1816**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2014).

**General distribution:** Palaearctic, but not in northern Africa.

**Genus *Sphiximorpha* Rondani, 1850**

Type species: *Ceria subsessilis* Illiger in Rossi, 1807.

***Sphiximorpha zieglerei* Gilasian & Vujić, 2017**

**Distribution in Iran:** Kerman (Gilasian et al., 2017).

**General distribution:** Iran.

**Genus *Spilomyia* Meigen, 1803**

Type species: *Musca diophthalma* Linnaeus, 1758.

***Spilomyia graciosa* Virolvitsh, 1985**

**Distribution in Iran:** Ilam (Gharali & van Steenis, 2008).

**General distribution:** Greece, Iraq, Turkey.

***Spilomyia triangulata* van Steenis, 2000**

**Distribution in Iran:** Qazvin (Kazerani et al., 2012d).

**General distribution:** France, Greece, North Macedonia and Turkey.

**Genus *Syritta* Le Peletier & Serville, 1828**

Type species: *Musca pipiens* Linnaeus, 1758.

***Syritta fasciata* Wiedemann 1830**

**Distribution in Iran:** East Azerbaijan (Shakeryari & Khaghaninia, 2012).

**General distribution:** Most of the Palaearctic, most of North America, South America and Oriental.

***Syritta flaviventris* Macquart, 1842**

**Distribution in Iran:** Khuzestan (Dousti, 1999; Dousti et al., 2000), Fars (Gharali et al., 2000), Golestan (Goldasteh et al., 2002), Khorasan-e Razavi (Amirimoghadam et al., 2004), East Azerbaijan (Vosughian, 2013), Kerman (Khosravian, 2014), West Azerbaijan (Mohammadzadeh, 2017).

**General distribution:** Afrotropical, Nearctic, Neotropical, Oceania and Western Palaearctic.

***Syritta pipiens* (Linnaeus, 1758)**

**Distribution in Iran:** Iran (Peck, 1988), West Azerbaijan (Khiaban et al., 1998; Ashrafi, 2010; Mohammadzadeh, 2017), Khuzestan (Dousti, 1999; Dousti et al., 2000), Isfahan (Pourghasem, 2001), Golestan (Goldasteh et al., 2002; Davaji, 2018), Guilan (Motamedinia et al., 2002; Bagheri, 2007), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008; Shojaei Hesari & Pashaei Rad, 2015), Kurdistan (Kamangar et al., 2004; Hasanbeigi, 2012; Hoseini et al., 2014), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Semnan (Mehrabi et al., 2006; Mehrabi & Ssymank, 2008), Ilam (Jalilian et al., 2010; Bedoreh et al., 2010; Bedoreh & Ansari pour, 2012), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), Zanjan (Naderloo, 2010), Sistan & Baluchistan (Hoodiani, 2010), Lorestan (Bahirai, 2011), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013; Arbabi, 2017), Alborz (Hezarkhani, 2013; Shahir, 2021), Kerman (Khosravian, 2014; Alitavakoli, 2015).

**General distribution:** Cosmopolitan.

***Syritta vittata* Portschinsky, 1875**

**Distribution in Iran:** Khuzestan (Dousti, 1999; Dousti et al., 2000), Iran (Amirimoghadam & Sirjani, 2004).

**General distribution:** Iran, Pakistan, Southern parts of European and Asiatic Russia.

**Genus *Syrphus* Fabricius, 1775**

Type species: *Musca ribesii* Linnaeus, 1758.

***Syrphus ribesii* (Linnaeus, 1758)**

**Distribution in Iran:** Fars, Isfahan, Tehran, Markazi (Modarres Awal, 1994), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Mohammadzadeh, 2017), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Shojaei Hesari & Pashaei Rad, 2015), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Sistan & Baluchistan (Golmohammadi & Khiaban, 2004; Hoodiani, 2010), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), Kurdistan (Hasanbeigi, 2012), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013), Kerman (Khosravian, 2014).

**General distribution:** Holarctic.

***Syrphus torvus* (Osten Sacken, 1875)**

**Distribution in Iran:** Markazi (Modarres Awal, 1994).

**General distribution:** Nepal, northern India, Palaearctic, Taiwan, Thailand, Western North America.

***Syrphus vitripennis* Meigen, 1822**

**Distribution in Iran:** Iran (Peck, 1988), West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001; Mohammadzadeh, 2017), Golestan (Goldasteh et al., 2002), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004; Hosseini & Sadeghi, 2008), Mazandaran (Gilasian & Vujić, 2004; Babaei, 2018), Guilan (Bagheri, 2007), Sistan & Baluchistan (Hoodiani, 2010), Lorestan (Bahirai, 2011), Kurdistan (Hasanbeigi, 2012), East Azerbaijan (Shakeryari, 2012; Vosughian, 2013), Kerman (Khosravian, 2014), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Palaearctic, Taiwan, Western North America.

**Genus *Temnostoma* Le Peletier & Serville, 1828**

Type species: *Milesia bombylans* Fabricius, 1805.

***Temnostoma vespiforme* (Linnaeus, 1758)**

**Distribution in Iran:** Mazandaran (Kazerani et al., 2014b).

**General distribution:** Holarctic.

**Genus *Trichopsomyia* Williston, 1888**

Type species: *Trichopsomyia polita* Williston, 1888.

***Trichopsomyia flavitarsis* (Meigen, 1822)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2012b), Kurdistan (Hoseini & Khaghaninia, 2015).

**General distribution:** Palaearctic.

***Trichopsomyia lucida* (Meigen, 1822)**

**Distribution in Iran:** East Azerbaijan (Khaghaninia et al., 2012b).

**General distribution:** Central Europe and Turkey.

**Remark:** Specimens of *Trichopsomyia* collected in Iran, and initially thought to belong to *T. lucida*, proved to differ from *T. lucida* in several characters, so the presence of *T. lucida* in Iran is in doubt (van Steenis et al., 2018).

***Trichopsomyia ochrozona* (Stackelberg, 1952)**

**Distribution in Iran:** Qazvin, Alborz, Kerman, Tehran, Zanjan (van Steenis et al., 2018).

**General distribution:** Tajikistan.

**Genus *Tropidia* Meigen, 1822**

Type species: *Eristalis milesiformis* Fallén, 1817.

***Tropidia scita* (Harris, 1780)**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998).

**General distribution:** Palaearctic, but not in northern Africa.

**Genus *Volucella* Geoffroy, 1762**

Type species: *Musca pellucens* Linnaeus, 1758.

***Volucella bombylans* (Linnaeus, 1758)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004), Kurdistan (Hoseini et al., 2014).

**General distribution:** Holarctic.

***Volucella inanis* (Linnaeus, 1758)**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998), Kurdistan (Hoseini et al., 2014).

**General distribution:** Palaearctic.

***Volucella zonaria* (Poda, 1761)**

**Distribution in Iran:** North Khorasan (Farahbakhsh, 1961), Iran (Peck, 1988), Lorestan (Modarres Awal, 1994; Bahirai, 2011), West Azerbaijan (Khiaban et al., 1998; Ashrafi, 2010), Hamadan (Gilasian & Gharali, 2002), Golestan (Goldasteh et al., 2002; Davaji, 2018), Guilan (Motamedinia et al., 2002), Khorasan-e Razavi (Sadeghi et al., 2002; Amirimoghadam et al., 2004), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), Kerman (Khosravian, 2014).

**General distribution:** Palaearctic, but not in Northern Europe.

**Genus *Xanthandrus* Verrall, 1901**

Type species: *Musca comtus* Harris, [1780]

***Xanthandrus comtus* (Harris, 1780)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004; Babaei, 2018), Tehran (Ahmadian & Pashaei Rad, 2010b, 2011), Ardabil (Azimi & Pashaei Rad, 2017).

**General distribution:** Palaearctic.

**Genus *Xanthogramma* Schiner, 1860**

Type species: *Syrphus ornatus* Meigen, 1822.

***Xanthogramma laetum* (Fabricius, 1794)**

**Distribution in Iran:** Mazandaran (Gilasian, 2004).

**General distribution:** Europe.

***Xanthogramma maculipenne* Mik, 1887**

**Distribution in Iran:** Iran (Peck, 1988), Fars (Gharali et al., 2000), Khorasan-e Razavi (Amirimoghadam et al., 2004), Guilan (Bagheri, 2007), Ilam (Jalilian et al., 2010), Kurdistan (Hasanbeigi, 2012), Lorestan (Bahirai, 2011).

**General distribution:** Former Yugoslavia, Iran, Transcaucasia.

***Xanthogramma pedissequum* (Harris, 1776)**

**Distribution in Iran:** West Azerbaijan (Khiaban et al., 1998; Khiaban & Parchami, 2001), Isfahan (Pourghasem, 2001), Ardabil (Azimi & Pashaei Rad, 2017), East Azerbaijan (Arbabi, 2017), Golestan (Davaji, 2018).

**General distribution:** Europe.

**Genus *Xylota* Meigen, 1822**

Type species: *Musca sylvarum* Linnaeus, 1758.

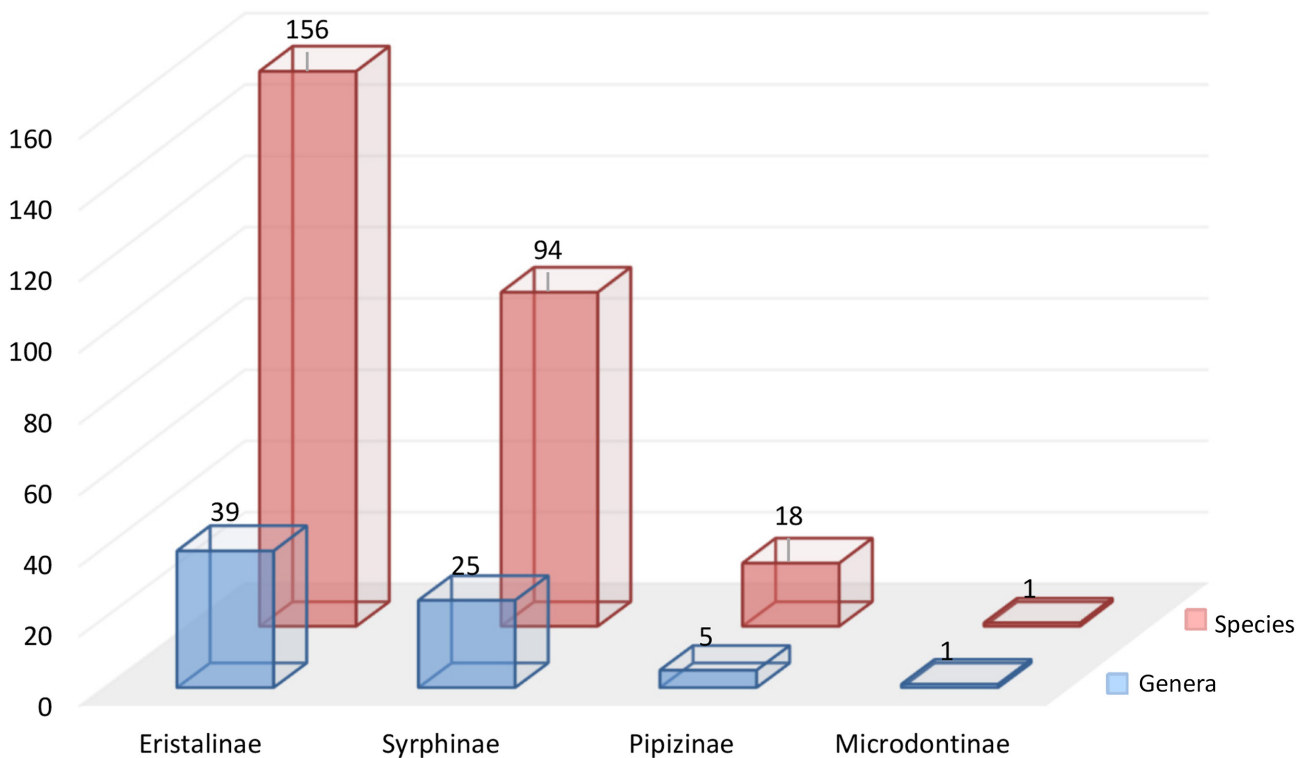
***Xylota segnis* (Linnaeus, 1758)**

**Distribution in Iran:** Fars (Gharali et al., 2000), East Azerbaijan (Arbabi, 2017).

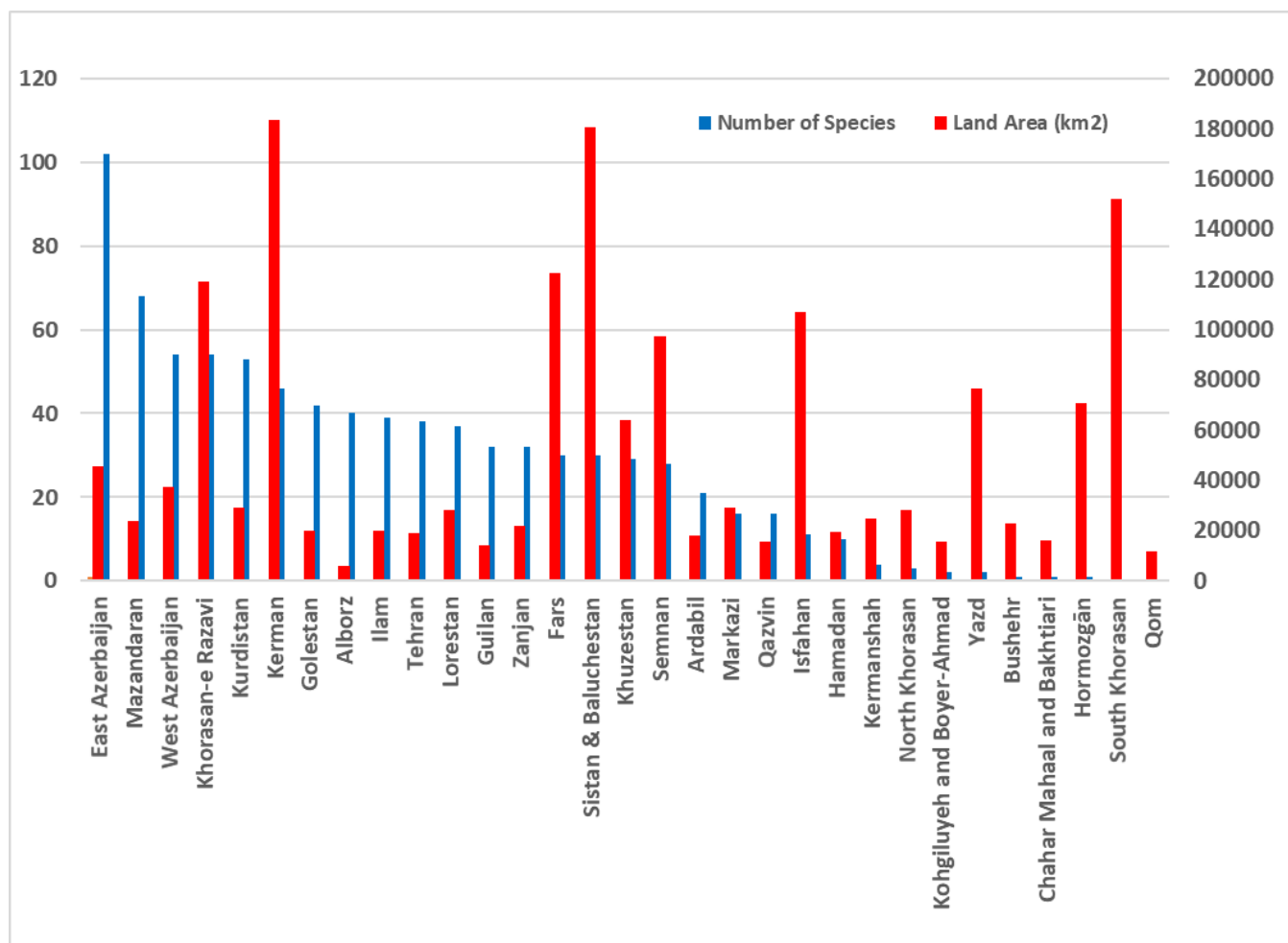
**General distribution:** Palaearctic and eastern North America

## DISCUSSION

The Iranian flower fly species updated to 269 in 70 genera, including 156, 94, 18 and 1 species and 39, 25, 5 and 1 genera in four subfamilies Eristalinae (57.99%, 55.72%), Syrphinae (34.94%, 35.71%), Pipizinae (6.70%, 7.14%) and Microdontinae (0.37%, 1.43%), respectively (Fig. 2). Among these, 145 species and 31 genera were added to the previous list. Of the 70 genera, *Eumerus* Meigen (35 species, 13.01%) and *Merodon* Meigen (26 species, 9.67%) are the most specious, whereas 30 genera each have only one recorded species. The hoverfly fauna in some provinces has been studied more intensively than others. East Azerbaijan, with 102 recorded species, has the highest diversity, followed by Mazandaran, West Azerbaijan, Khorasan-e Razavi, Kordistan, Kerman, Golestan and Alborz provinces with 68, 54, 53, 52, 46, 42 and 40 species, respectively. Bushehr, Chaharmahal & Bakhtiari and Hormozgan each have only one recorded species. The number of reported hoverflies species in Yazd, Kohgiluyeh & Boyer Ahmad, North Khorasan and Kermanshah were 2, 2, 3 and, 4 respectively, while in two provinces (Qom and South Khorasan), no species have been recorded (Fig. 1). No detailed study has been done in recent nine provinces. Few species were reported from other provinces. The number of species in each province was not related to its area size (Fig. 3) but depended on more studies that have been conducted. The climates of Iran's provinces are very different and some provinces such as Qom, South Khorasan and Yazd have a desert climate in most areas, but Kermanshah, North Khorasan, Kohgiluyeh & Boyer Ahmad, and Chaharmahal & Bakhtiari are mountainous regions and have a more diverse wild vegetation and pastures and more species are expected to be found in these areas. However many species have been reported from desert provinces such as Kerman and Sistan & Baluchistan. Therefore, the study of the fauna of hoverflies in the last two groups of provinces will lead to the identification of more species as well as other provinces.



**Figure 2.** Number of genera and species in syrphid subfamilies.



**Figure 3.** The provincial area (Km<sup>2</sup>) and the number of reported species (in order).

Some common species such as *Episyrphus balteatus*, *Sphaerophoria scripta* and *Eupeodes corollae* are widespread in Iran and reported from 21 provinces. *Eristalis arbustorum*, *E. tenax*, *Syrirta pipiens*, *Paragus bicolor*, *Melanostoma mellinum* and *Eristalinus aeneus* are also widely distributed. About 140 species (52% of Iranian Syrphidae) were reported from only one province, 53 species (19.7%) from two provinces and 15 species (5.57%) from three provinces. 62 species (23.04%) were founded in four or more provinces (Appendix 1). Ten species i.e. *Chrysotoxum arcuatum*, *Ch. robustum*, *Dideoides annandalei*, *Eumerus basalis*, *Mallota cimbiciformis*, *M. fuciformis*, *M. zarudniana*, *Merodon armipes*, *M. nanus* and *Paragus finitimus* which were listed by Peck (1988) from Iran, and have not been recorded thereafter. Twenty one species i.e. *Dideoides annandalei*, *Eumerus ahmadii*, *E. atricolorus*, *E. brevopilosus*, *E. chekabicus*, *E. effossus*, *E. intermedius*, *E. khiabani*, *E. nadoosheni*, *E. ovoformus*, *E. persarum*, *E. pilosipedes*, *E. pollinipedes*, *E. similis*, *E. vallicolus*, *Mallota zarudniana*, *Merodon mixtum*, *M. persicus*, *Metadon persicus*, *Myolepta pazukii*, *Paragus radjabii*, *Pseudopelecocera persiana* and *Sphiximorpha zieglerei* are only known from Iran and are possibly endemic to the country, whereas the highest number of species is restricted to the Palaearctic region. Most of these 21 species belong to *Eumerus*, because this genus is much studied, recently (Gliasian et al., 2020, 2022).

Comparison of the syrphid fauna of Iran with adjacent countries and some other countries in the Palaearctic region indicates that the fauna of Iran (269 species) is the most known, followed by Turkey (113 species: Demirözer et al., 2020), Pakistan (71 species: Shehzad et al., 2017), Afghanistan (71 species: Popov et al., 2020), Egypt (51 species: El-Hawagry & Gilbert, 2019) and Saudi Arabia (40 species:

Dawah et al., 2020). However, compared to other countries such as Georgia (350 species: Mengual et al., 2020) and Serbia (400 species: Vujić et al., 2021), which have a much smaller area, and due to the more climate diversity of Iran compared to these countries and the fact that syrphid fauna of some provinces of Iran has not been well studied, it seems that Iran must have a much richer fauna of hoverflies and much more research is needed in this field.

#### AUTHOR'S CONTRIBUTION

The author confirms his contribution in the whole processing steps in the research, preparation and revising the manuscript. The author read and approved the final version of the manuscript.

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#### AVAILABILITY OF DATA AND MATERIAL

Not applicable.

#### ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

#### CONSENT FOR PUBLICATION

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#### CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this paper.

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**Appendix 1.** Checklist of the Syrphidae of Iran.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Species	<i>Allobaccha sapphirine</i>	<i>Anasimyia contracta</i>	<i>Anasimyia transfuga</i>	<i>Baccha elongata</i>	<i>Brachyopa bicolor</i>	<i>Brachypalpus valgus</i>	<i>Caliprobola aurea</i>	<i>Ceriana conopsoides</i>	<i>Ceriana medis</i>	<i>Ceriana skevingtoni</i>	<i>Chalcosyrphus nemorum</i>	<i>Cheilosis aerea</i>	<i>Cheilosis cumanica</i>	<i>Cheilosis gigantea</i>	<i>Cheilosis laticornis</i>	<i>Cheilosis lola</i>	<i>Cheilosis melanopa</i>	<i>Cheilosis mutabilis</i>	<i>Cheilosis nigripes</i>	<i>Cheilosis proxima</i>	<i>Cheilosis sahlbergi</i>	<i>Cheilosis scutellata</i>	<i>Cheilosis soror</i>	<i>Cheilosis transcaucasia</i>	<i>Cheilosis urbana</i>
Provinces																									
Alborz																									
Ardabil																									
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan		*	*	*				*	*		*	*	*			*		*	*	*		*		*	
Fars						*																			
Golestan										*															
Guilan																									
Hamadan																									
Hormozgān																									
Ilam																									
Isfahan																									
Kerman																									
Kermanshah																									
Khorasan-e Razavi												*													
Khuzestan																									
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan												*	*						*						
Lorestan																									
Markazi																									
Mazandaran					*		*				*			*	*		*					*	*		*
North Khorasan																									
Qazvin																									
Qom																									
Semnan													*												
Sistan & Baluchistan	*																								
South Khorasan																									
Tehran													*												
West Azerbaijan												*	*			*			*	*					
Yazd																									
Zanjan																									
IRAN								*																	
Total	1	1	1	1	1	1	1	2	1	1	2	4	5	1	1	2	1	1	2	2	1	2	1	1	1

## Appendix 1. Continued.

	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Species	<i>Cheilisia variabilis</i>	<i>Cheilisia vicina</i>	<i>Cheilisia vulpina</i>	<i>Chrysogaster basalis</i>	<i>Chrysogaster cemitertorum</i>	<i>Chrysogaster rondanii</i>	<i>Chrysogaster virescens</i>	<i>Chrysotoxum arcuatum</i>	<i>Chrysotoxum bacterianum</i>	<i>Chrysotoxum baphyrum</i>	<i>Chrysotoxum bicinctum</i>	<i>Chrysotoxum cautum</i>	<i>Chrysotoxum coreanum</i>	<i>Chrysotoxum elegans</i>	<i>Chrysotoxum festivum</i>	<i>Chrysotoxum intermedium</i>	<i>Chrysotoxum lessonae</i>	<i>Chrysotoxum montivagum</i>	<i>Chrysotoxum octomaculatum</i>	<i>Chrysotoxum parmense</i>	<i>Chrysotoxum persicum</i>	<i>Chrysotoxum robustum</i>	<i>Chrysotoxum veralli</i>	<i>Chrysotoxum vernale</i>	<i>Criorhina portschinskiji</i>
Provinces																									
Alborz											*					*		*							
Ardabil																									
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan	*	*	*	*	*	*	*					*		*	*				*				*	*	
Fars									*											*					
Golestan		*							*		*	*								*		*			
Guilan																									*
Hamadan		*																							
Hormozgān										*															
Ilam									*											*					
Isfahan																									
Kerman																*									
Kermanshah																									
Khorasan-e Razavi											*					*									
Khuzestan																				*					
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan							*		*																
Lorestan									*						*					*					
Markazi																									
Mazandaran												*			*				*						
North Khorasan																									
Qazvin																					*				
Qom																									
Semnan																*									
Sistan & Baluchistan												*								*					
South Khorasan																									
Tehran																*									
West Azerbaijan																									
Yazd																									
Zanjan																									
IRAN								*			*					*							*		
Total	1	3	1	1	1	1	2	1	5	1	2	5	1	1	2	6	1	1	2	6	1	1	1	2	1



Appendix 1. Continued.

	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Species	<i>Criorhina ranunculi</i>	<i>Criorhina talysensis</i>	<i>Dasytyrphus albostrigatus</i>	<i>Dasytyrphus eggeri</i>	<i>Dasytyrphus trilineatus</i>	<i>Dideoides amandalei</i>	<i>Epistrophe eligans</i>	<i>Epistrophe nitidicollis</i>	<i>Episyrrhus balteatus</i>	<i>Eristalinus aeneus</i>	<i>Eristalinus megalcephalus</i>	<i>Eristalinus sepulchralis</i>	<i>Eristalinus taeniops</i>	<i>Eristalis alpina</i>	<i>Eristalis arbustorum</i>	<i>Eristalis nemorum</i>	<i>Eristalis pertinax</i>	<i>Eristalis similis</i>	<i>Eristalis tenax</i>	<i>Eumerus almadii</i>	<i>Eumerus amoenus</i>	<i>Eumerus argyropus</i>	<i>Eumerus atricoloris</i>	<i>Eumerus basalis</i>	<i>Eumerus brevipilosus</i>
Provinces																									
Alborz			*				*		*	*			*		*	*		*	*						
Ardabil									*																
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan			*						*	*	*	*	*	*	*				*						
Fars				*					*		*								*	*	*				*
Golestan			*				*		*	*	*	*	*		*				*						
Guilan		*							*	*	*	*			*		*	*	*						
Hamadan							*		*		*		*		*				*						
Hormozgān																									
Ilam			*						*	*	*	*	*		*				*	*					
Isfahan									*						*				*						
Kerman			*						*	*			*		*	*			*				*		
Kermanshah																									
Khorasan-e Razavi			*						*	*			*		*				*						
Khuzestan									*	*	*	*	*		*				*						
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan									*	*	*	*			*				*						
Lorestan									*	*	*	*	*		*				*						
Markazi																						*			
Mazandaran					*		*	*	*	*	*	*			*		*	*	*						
North Khorasan	*																								
Qazvin									*																
Qom																									
Semnan									*	*	*		*		*			*	*						
Sistan & Baluchistan						*			*	*		*			*				*						
South Khorasan																									
Tehran									*	*					*				*						
West Azerbaijan									*	*	*	*			*				*						
Yazd																									
Zanjan									*	*	*	*	*		*			*	*						
IRAN											*				*	*			*						*
Total	1	1	6	1	1	1	4	1	21	16	14	10	11	1	19	3	2	5	20	2	1	1	1	1	1

## Appendix 1. Continued.

Provinces	Species																								
	<i>Eumerus chekabicus</i>	<i>Eumerus coeruleus</i>	<i>Eumerus effossus</i>	<i>Eumerus falsus</i>	<i>Eumerus funeralis</i>	<i>Eumerus hissaricus</i>	<i>Eumerus intermedius</i>	<i>Eumerus jacobsoni</i>	<i>Eumerus kazanoovzkyaee</i>	<i>Eumerus khiabani</i>	<i>Eumerus longitarsis</i>	<i>Eumerus lucidus</i>	<i>Eumerus nadoosheni</i>	<i>Eumerus ornatus</i>	<i>Eumerus ovoformus</i>	<i>Eumerus persarum</i>	<i>Eumerus persicus</i>	<i>Eumerus pilosipedes</i>	<i>Eumerus pollinipedes</i>	<i>Eumerus richteri</i>	<i>Eumerus sabulorum</i>	<i>Eumerus similis</i>	<i>Eumerus sogdianus</i>	<i>Eumerus strigatus</i>	<i>Eumerus tadzhhikorum</i>
Alborz														*											
Ardabil																							*		
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan												*									*		*		
Fars											*												*		
Golestan					*																		*		*
Guilan																									
Hamadan																									
Hormozgān																									
Ilam																							*		
Isfahan																									
Kerman			*					*																*	
Kermanshah							*		*																
Khorasan-e Razavi		*			*	*		*						*									*	*	*
Khuzestan																			*			*			
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan					*																		*	*	*
Lorestan				*					*																
Markazi	*	*						*		*	*				*			*							*
Mazandaran																									*
North Khorasan																									
Qazvin																							*		
Qom																									
Semnan																								*	
Sistan & Baluchistan		*	*					*								*							*		
South Khorasan																									
Tehran														*		*			*					*	
West Azerbaijan																							*		
Yazd													*		*										
Zanjan																							*	*	
IRAN																							*	*	
Total	1	3	2	2	2	1	1	4	2	1	2	1	1	3	1	2	1	1	1	1	1	1	11	6	5

Appendix 1. Continued.

	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
Species	<i>Eumerus torsicus</i>	<i>Eumerus transcaspicus</i>	<i>Eumerus tricolor</i>	<i>Eumerus vallicolus</i>	<i>Eupeodes bucculatus</i>	<i>Eupeodes corollae</i>	<i>Eupeodes latifasciatus</i>	<i>Eupeodes luniger</i>	<i>Eupeodes nitens</i>	<i>Eupeodes nuba</i>	<i>Ferdinandea cuprea</i>	<i>Helopholus continuum</i>	<i>Helophilus hybridus</i>	<i>Helophilus pendulus</i>	<i>Helophilus tricittatus</i>	<i>Heringia heringi</i>	<i>Ischidon aegyptius</i>	<i>Ischidon scutellaris</i>	<i>Lapossyrphus lapponicus</i>	<i>Lejogaster metallina</i>	<i>Lejogaster tarsata</i>	<i>Leucozona lucorum</i>	<i>Mallota cimbiciformis</i>	<i>Mallota fuciformis</i>	<i>Mallota rossica</i>
Provinces																									
Alborz						*	*	*		*								*							
Ardabil						*	*	*										*							
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan			*			*	*	*		*	*				*					*	*	*			*
Fars			*							*								*							
Golestan						*				*					*										
Guilan						*		*		*			*				*	*							
Hamadan						*																			
Hormozgān																									
Ilam						*				*							*								
Isfahan							*																		
Kerman					*	*	*	*	*	*							*	*			*				
Kermanshah	*																								
Khorasan-e Razavi			*			*	*	*		*					*		*	*			*				
Khuzestan						*				*					*		*	*							
Kohgiluyeh & Boyer-Ahmad			*																						
Kurdistan		*	*			*				*			*	*		*	*		*	*		*	*		
Lorestan	*					*				*							*	*			*				
Markazi	*			*		*																			
Mazandaran						*	*	*		*		*						*							
North Khorasan																									
Qazvin						*																			
Qom																									
Semnan						*	*	*		*					*		*	*	*						
Sistan & Baluchistan						*		*		*			*			*	*				*				
South Khorasan																									
Tehran					*	*	*	*							*										
West Azerbaijan						*	*	*		*		*		*							*				
Yazd																									
Zanjan						*				*		*						*							
IRAN						*									*		*			*		*	*	*	
Total	3	1	5	1	2	21	10	11	1	15	2	2	1	3	8	1	9	14	1	2	8	1	1	1	1

## Appendix 1. Continued.

	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
Species	<i>Mallota zarudniana</i>	<i>Melangyna lasiophthalma</i>	<i>Melangyna umbellatorum</i>	<i>Melanogaster hirtella</i>	<i>Melanogaster nigricans</i>	<i>Melanogaster nuda</i>	<i>Melanogaster parumplicata</i>	<i>Melanostoma mellinum</i>	<i>Melanostoma scalare</i>	<i>Meligrama cincta</i>	<i>Meligrama euchroma</i>	<i>Meliscaeva auricollis</i>	<i>Meliscaeva cinctella</i>	<i>Merodon aberrans</i>	<i>Merodon armipes</i>	<i>Merodon aurifer</i>	<i>Merodon avidus</i>	<i>Merodon brevis</i>	<i>Merodon clavipes</i>	<i>Merodon equestris</i>	<i>Merodon femoratooides</i>	<i>Merodon femoratus</i>	<i>Merodon fulcratus</i>	<i>Merodon hirtus</i>	<i>Merodon hypochrysus</i>
Provinces																									
Alborz								*	*																
Ardabil									*									*							
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan				*	*	*	*	*	*		*			*						*					
Fars																									
Golestan								*		*															
Guilan								*				*													
Hamadan																									
Hormozgān																									
Ilam								*								*	*		*		*			*	*
Isfahan																									
Kerman								*	*														*		
Kermanshah																									
Khorasan-e Razavi								*																	
Khuzestan								*																	
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan						*		*																	
Lorestan								*																	
Markazi												*													
Mazandaran		*	*			*		*	*			*	*				*	*							
North Khorasan																									
Qazvin																*	*		*		*				*
Qom																									
Semnan								*																	
Sistan & Baluchistan								*																	
South Khorasan																									
Tehran				*				*				*							*		*				
West Azerbaijan							*	*	*			*							*						
Yazd																									
Zanjan								*				*													
IRAN	*							*							*								*		
Total	1	1	1	2	1	3	2	17	6	1	1	6	1	1	1	2	3	2	2	3	2	1	2	1	2

Appendix 1. Continued.

	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Species	<i>Merodon latifemoris</i>	<i>Merodon mixtum</i>	<i>Merodon nuus</i>	<i>Merodon ortus</i>	<i>Merodon persicus</i>	<i>Merodon pruni</i>	<i>Merodon quadrinotatus</i>	<i>Merodon satdagensis</i>	<i>Merodon schachti</i>	<i>Merodon serrulatus</i>	<i>Merodon tamiensis</i>	<i>Merodon vandergooti</i>	<i>Merodon velox</i>	<i>Merodon waruckei</i>	<i>Mesembrius peregrinus</i>	<i>Metadon persicus</i>	<i>Milesia semiluctifera</i>	<i>Myathropa florea</i>	<i>Myolepta pazukii</i>	<i>Myolepta trojana</i>	<i>Neoascia annexa</i>	<i>Neoascia meticulosa</i>	<i>Neoascia obliqua</i>	<i>Neoascia podagrica</i>	<i>Neoascia tenur</i>
Provinces																									
Alborz																		*					*		
Ardabil																									
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan	*			*							*										*	*	*	*	*
Fars					*		*					*			*				*						
Golestan		*								*															
Guilan															*			*						*	
Hamadan																									
Hormozgān																									
Ilam								*												*					
Isfahan												*													
Kerman																		*							
Kermanshah									*																
Khorasan-e Razavi																		*					*		
Khuzestan						*																			
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan											*							*							
Lorestan						*										*		*					*		
Markazi																									
Mazandaran		*																*							
North Khorasan													*												
Qazvin								*									*								
Qom																									
Semnan																									
Sistan & Baluchistan																									
South Khorasan																									
Tehran																		*			*				
West Azerbaijan																		*					*	*	
Yazd																									
Zanjan																								*	
IRAN			*											*											
Total	1	2	1	1	1	2	1	2	1	1	2	2	1	1	2	1	1	9	1	1	2	1	5	4	1

## Appendix 1. Continued.

	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Species	<i>Neoscia unifasciata</i>	<i>Neocnemodon fulvimanus</i>	<i>Neocnemodon latitarsis</i>	<i>Orthonevra brevicornis</i>	<i>Orthonevra frontalis</i>	<i>Orthonevra nobilis</i>	<i>Orthonevra plumbago</i>	<i>Palumbia eristaloides</i>	<i>Paragus abrogans</i>	<i>Paragus albifrons</i>	<i>Paragus albipes</i>	<i>Paragus antoinettae</i>	<i>Paragus azureus</i>	<i>Paragus bicolor</i>	<i>Paragus cinctus</i>	<i>Paragus compeditus</i>	<i>Paragus finitimus</i>	<i>Paragus gussakovskii</i>	<i>Paragus haemorrhous</i>	<i>Paragus hyalopteri</i>	<i>Paragus majoranae</i>	<i>Paragus pecchioli</i>	<i>Paragus quadrifasciatus</i>	<i>Paragus radjabii</i>	<i>Paragus romanicus</i>
Provinces																									
Alborz								*	*					*	*				*				*		
Ardabil										*									*				*		
Bushehr																*									
Chaharmahal & Bakhtiari																									
East Azerbaijan	*			*	*	*	*							*					*						
Fars														*											
Golestan														*	*				*						
Guilan														*					*						
Hamadan																									
Hormozgān																									
Ilam										*			*	*	*								*		
Isfahan								*	*					*											
Kerman								*	*	*				*	*				*				*	*	*
Kermanshah																									
Khorasan-e Razavi									*	*				*	*			*	*	*			*	*	
Khuzestan													*	*	*										
Kohgiluyeh & Boyer-Ahmad								*																	
Kurdistan		*		*		*				*				*	*	*			*						
Lorestan														*		*									
Markazi																									
Mazandaran			*											*					*				*		
North Khorasan																									
Qazvin																									
Qom																									
Semnan														*									*		
Sistan & Baluchistan														*											
South Khorasan																									
Tehran										*														*	
West Azerbaijan				*					*	*				*	*				*			*			
Yazd																									
Zanjan									*	*				*	*								*		
IRAN					*				*	*	*	*		*			*				*		*		
Total	1	1	1	3	2	2	1	4	5	10	2	1	2	17	1	11	1	1	10	1	1	1	9	2	1

Appendix 1. Continued.

	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225
Species	<i>Paragus serratus</i>	<i>Paragus tibialis</i>	<i>Parasyrphus nigritarsis</i>	<i>Parasyrphus punctulatus</i>	<i>Parhelophilus versicolor</i>	<i>Pipiza accola</i>	<i>Pipiza lugubris</i>	<i>Pipiza notata</i>	<i>Pipizella annulata</i>	<i>Pipizella caucasica</i>	<i>Pipizella curviflora</i>	<i>Pipizella divicoi</i>	<i>Pipizella maculipennis</i>	<i>Pipizella mongolorum</i>	<i>Pipizella ochreobasalis</i>	<i>Pipizella viduata</i>	<i>Pipizella virens</i>	<i>Platycheirus albinus</i>	<i>Platycheirus ambiguus</i>	<i>Platycheirus fulviventris</i>	<i>Platycheirus immarginatus</i>	<i>Platycheirus jaerensis</i>	<i>Platycheirus manicatus</i>	<i>Platycheirus occultus</i>	<i>Platycheirus scutatus</i>
Provinces																									
Alborz		*																*							
Ardabil		*	*																						
Bushehr																									
Chaharmahal & Bakhtiari																									
East Azerbaijan		*			*		*		*			*	*	*		*	*	*					*	*	*
Fars		*													*										
Golestan																									
Guilan					*	*														*					
Hamadan																									
Hormozgān																									
Ilam																		*							
Isfahan																									
Kerman		*																							
Kermanshah																									
Khorasan-e Razavi		*															*		*	*					
Khuzestan																									
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan					*						*	*													
Lorestan		*																							
Markazi		*																							
Mazandaran		*				*				*								*		*		*			*
North Khorasan																									
Qazvin																									
Qom																									
Semnan	*	*																							
Sistan & Baluchistan																									
South Khorasan																									
Tehran		*		*														*	*						
West Azerbaijan		*											*			*	*	*						*	
Yazd																									
Zanjan		*										*													
IRAN		*						*									*								
Total	1	14	1	1	3	2	1	1	1	1	1	3	2	1	1	2	4	6	1	3	1	1	1	2	2

## Appendix 1. Continued.

	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250
Species	<i>Platycheirus sticticus</i>	<i>Pocota hyrcanica</i>	<i>Pseudodoros nigricollis</i>	<i>Pseudopelecocera latifrons</i>	<i>Pseudopelecocera persiana</i>	<i>Rhingia rostrata</i>	<i>Riponnensia longicornis</i>	<i>Scaeva albomaculata</i>	<i>Scaeva dignota</i>	<i>Scaeva latimaculata</i>	<i>Scaeva pyrastris</i>	<i>Scaeva rossica</i>	<i>Scaeva selenitica</i>	<i>Sericomyia silentis</i>	<i>Spazigaster ambulans</i>	<i>Sphaerophoria bengalensis</i>	<i>Sphaerophoria chongjini</i>	<i>Sphaerophoria philanthus</i>	<i>Sphaerophoria rueppelli</i>	<i>Sphaerophoria scripta</i>	<i>Sphegina clumpes</i>	<i>Sphiximorpha ziegleri</i>	<i>Spilomyia graciosa</i>	<i>Spilomyia triangulata</i>	<i>Syrretta fasciata</i>
Provinces																									
Alborz					*			*	*		*					*	*		*	*					
Ardabil								*			*		*						*	*					
Bushehr																									
Chaharmahal & Bakhtiari								*																	
East Azerbaijan					*		*								*				*	*	*				*
Fars								*					*						*						
Golestan		*						*		*	*	*	*			*			*	*					
Guilan											*								*						
Hamadan																			*						
Hormozgān																									
Ilam								*	*	*						*			*	*			*		
Isfahan																			*						
Kerman								*	*							*			*	*		*			
Kermanshah																									
Khorasan-e Razavi								*		*	*					*			*	*					
Khuzestan			*					*	*							*			*	*					
Kohgiluyeh & Boyer-Ahmad																									
Kurdistan				*				*	*							*			*	*					
Lorestan								*	*		*				*	*			*	*					
Markazi																									
Mazandaran						*			*		*		*	*	*	*			*	*					
North Khorasan																									
Qazvin					*										*				*					*	
Qom																									
Semnan										*	*								*	*					
Sistan & Baluchistan								*			*								*	*					
South Khorasan																									
Tehran	*							*				*							*	*					
West Azerbaijan								*			*					*		*	*	*					
Yazd																									
Zanjan								*			*				*	*			*	*					
IRAN							*	*		*						*			*	*					
Total	1	1	1	1	3	1	2	16	7	5	11	2	4	1	5	12	1	1	16	21	1	1	1	1	1



Appendix 1. Continued.

	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	
Species	<i>Syritta flaviventris</i>	<i>Syritta pipiens</i>	<i>Syritta vittata</i>	<i>Syrphus ribesii</i>	<i>Syrphus torvus</i>	<i>Syrphus vitripennis</i>	<i>Tennostoma vespiforme</i>	<i>Trichopsomyia flavitarsis</i>	<i>Trichopsomyia lucida</i>	<i>Trichopsomyia ochrozona</i>	<i>Tropidia scita</i>	<i>Volucella bombylans</i>	<i>Volucella inanis</i>	<i>Volucella zonaria</i>	<i>Xanthandrus comtus</i>	<i>Xanthogramma laetum</i>	<i>Xanthogramma maculipenne</i>	<i>Xanthogramma pedissequum</i>	<i>Xylota segnis</i>	Total
Provinces																				
Alborz		*								*										40
Ardabil						*									*			*		21
Bushehr																				1
Chaharmahal & Bakhtiari																				1
East Azerbaijan	*	*		*		*		*	*									*	*	102
Fars	*			*													*		*	30
Golestan	*	*				*								*				*		42
Guilan		*				*								*			*			32
Hamadan														*						10
Hormozgān																				1
Ilam		*															*			39
Isfahan		*		*														*		11
Kerman	*	*		*		*				*				*						46
Kermanshah																				4
Khorasan-e Razavi	*	*		*		*								*			*			54
Khuzestan	*	*	*																	29
Kohgiluyeh & Boyer-Ahmad																				2
Kurdistan		*		*		*		*				*	*				*			53
Lorestan		*				*								*			*			37
Markazi				*	*															16
Mazandaran		*		*		*	*					*			*	*				68
North Khorasan														*						3
Qazvin										*										16
Qom																				0
Semnan		*																		28
Sistan & Baluchistan		*		*		*														30
South Khorasan																				0
Tehran		*		*						*			*	*						38
West Azerbaijan	*	*		*		*					*		*	*				*		54
Yazd																				2
Zanjan		*								*										32
IRAN		*				*							*			*				42
Total	7	18	1	11	1	12	1	2	1	5	1	2	2	10	3	1	7	5	2	

## چک لیست به روز شده سیرفیدهای ایران (Diptera, Brachycera)

ابوفاضل دوستی

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**چکیده:** چک لیست به روز شده سیرفیدهای ایران (Diptera: Syrphoidea) براساس بررسی منابع با آخرین تغییرات طبقه‌بندی و نامگذاری ارایه شده است. در مجموع ۲۶۹ گونه معتبر از ۷۰ جنس و ۴ زیرخانواده از ایران شناخته شده که تقریباً ۴/۲۷ درصد از کل سیرفیدهای شناخته شده دنیا را تشکیل می‌دهد. از این میان ۱۴۵ گونه و ۳۱ جنس به فهرست قبلی اضافه شده‌اند. جنس‌های *Eumerus* Meigen (۳۵ گونه، ۱۳/۰۱ درصد) و *Merodon* Meigen (۲۶ گونه، ۹/۶۷ درصد)، دارای بیشترین تعداد گونه گزارش شده در ایران هستند، در حالی که از ۳۰ جنس فقط یک گونه شناسایی شده است. اکثر گونه‌های مگس‌های گل در ایران در منطقه Palaearctic پراکنده هستند، در حالی که ۲۱ گونه تنها از ایران گزارش شده و احتمالاً بومی کشور هستند.

**واژگان کلیدی:** پراکنش، فون، ایران، منطقه پالئآرکتیک، مگس گل