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A CHECKLIST OF THE HOVER FLIES (DIPTERA: SYRPHIDAE) OF IRAQ

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Summary. A checklist of 24 species from 13 genera of hover flies from Iraq is given. Among them, seven species, *Eristalinus megacephalus* (Rossi, 1794), *E. tabanoides* (Jaennicke, 1867), *Eupeodes nuba* (Wiedemann, 1830), *Ischiodon aegyptius* (Wiedemann, 1830), *Melanostoma mellinum* (Linnaeus, 1758), *Sphaerophoria bengalensis* Macquart, 1842, and *Syritta pipiens* (Linnaeus, 1758), are recorded from this country for the first time.

Key words: Syrphidae, fauna, new records, Middle East.

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Резюме. Приводится аннотированный список 24 видов из 13 родов мух-журчалок Ирака. Среди них впервые для фауны страны указываются семь видов: *Eristalinus megacephalus* (Rossi, 1794), *E. tabanoides* (Jaennicke, 1867), *Eupeodes nuba* (Wiedemann, 1830), *Ischiodon aegyptius* (Wiedemann, 1830), *Melanostoma mellinum* (Linnaeus, 1758), *Sphaerophoria bengalensis* Macquart, 1842 и *Syritta pipiens* (Linnaeus, 1758.

INTRODUCTION

The hover flies are one of the most abundant and conspicuous dipteran families with a worldwide distribution, comprising about 6,200 species (Pape *et al*., 2013). The larvae of Syrphinae are voracious predators, consuming large number of aphids (Sadeghi & Gilbert, 2000), besides attacking coccids, scale insects, psyllids, aleyrodids and cicadellids. However, the larvae of a few genera such as *Merodon* Meigen 1803 and *Eumerus* Meigen 1804 are harmful because they attack and destroy bulb plants such as tulips, daffodils and narcissus (Kohli *et al*., 1988). Adult hover flies are pollinators (Dolye *et al*., 2020).

The data on Syrphidae of Iraq are limited and scattered (Khalaf, 1957; Swailem *et al*., 1974; Abdul-Rassoul, 1976; Dušek & Láska, 1976; Violovitsh, 1985; Peck, 1988; Maaroof & Amin, 1989; Mohamed & Abdullah, 1989; Hussein, 2013; Abdul-Razaak, 2014; Al-Saffar & Augul, 2015; Augul, 2016; Mouhammed, 2017; Atta *et al*., 2019; Alkhafaji *et al*., 2022; Vujic *et al*., 2024). Totally, only 17 syrphid species was recorded from Iraq before the present study. The aim of this paper is to prepare a first checklist of hover flies for the country.

MATERIAL AND METHODS

The specimens were collected from six south-eastern provinces of Iraq including Babil (Babylon), Basra, Diwaniyah (Al-Qadisiyah), Dhi-Qar, Maysan and Wasit by hand-net and malaise traps in 2022–2023. Materials were identified by the fourth author of the paper. The specimens studied are deposited at the insect collection of the Department of Plant Protection, Ferdowsi University of Mashhad, Iran (FUM). Also, some specimens are kept at the Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Serbia (FSUNS). New for Iraq records are asterisked (*).

LIST OF SPECIES

Genus *Episyrphus* Matsumura et Adachi, 1917

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

MATERIAL EXAMINED. Iraq: wheat fields, Babil, 19. III 2023, 5♀, 3♂; wheat fields, Wasit (Kut), 8.IV 2022, 3♂, 2♀; tomato fields, Basra, 12.V 2023, 5♀, 2♂; wheat fields, Maysan (Ammareh), 31.IV 2023, 4♀, 3♂; wheat fields, Dhi-qar (Naseriyah), 7.IV 2023, 2♀, 3♂.

REMARK. This species has been reported already from Al-Qadisiyah (Hussein, 2013); Dhi-Qar (Abdul-Razzaq, 2014); Basra (Atta *et al*., 2019); Abu Ghraib (Alkhafaji *et al*., 2022).

Genus *Eristalinus* Rondani, 1845

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

MATERIAL EXAMINED. Iraq: wheat fields, Wasit, 7.IV 2023, 2♂, 2♀; wheat fields, Al-Qadisiyah (Farhaneh), 14.III 2023, 3♂, 2♀; barely fields, Dhi-Qar, 8.V 2023, 3♀, 1♂.

REMARK. Khalaf (1957) reported this species as *Tubifera aenea* from Sa'dia; Abdul-Rasoul (1976) as *Tubifera aenea* from Iraq; Atta *et al*. (2019) as *Eristalis aeneus* from Basra; Alkhafaji *et al*. (2022) as *Eristalis aeneus* from Abu-Ghoraib.

***Eristalinus sepulchralis* (Linnaeus, 1758)**

REMARK. This species was recorded from Abu-Ghoraib (Alkhafaji *et al*., 2022).

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

MATERIAL EXAMINED. Iraq: wheat fields, Babil, 19.III 2023, 4♂, 5♀; alfalfa fields, Wasit, 3.IV 2023; 2♀, 1♂; same locality, 12.V.2023, 2♀; wheat field, Al-Qadisiyah (Afak), 27.III 2023, 3♂; alfalfa field, Dhi-qar (Naseriyah), 11.III 2022, 3♂, 5♀; same locality, 15.III 2023 3♀, 2 ♂.

****Eristalinus tabanoides* (Jaennicke 1867)**

MATERIAL EXAMINED. Iraq: alfalfa fields, Babil (Hillah), 17.III 2023, 2♂, 3♀.

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

REMARK. Hussein (2014) reported it as *Metasyrphus taeniops* from Al-Qadisiyah.

Genus *Eristalis* Latreille, 1804

***Eristalis arbustorum* (L., 1758)**

REMARK. This species has been reported from Dhi-Qar (Abdul-Razzaq, 2014).

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

REMARK. Alkhafaji *et al*. (2022) reported this species from Abu-Ghoraib.

***Eristalis tenax* Linnaeus, 1758**

REMARK. Khalaf (1957) reported this species as *Tubifera tenax* from Khanaqin and Baqouba; Swailem *et al*. (1974) from Mosel; Atta *et al*. (2019) from Basra.

Genus *Eupeodes* Osten Sacken, 1877

***Eupeodes corollae* Fabricius, 1794**

MATERIAL EXAMINED. Iraq: wheat fields, Babil, 17.III 2022, 2 ♂, 3♀; alfalfa fields, Wasit (Shamiyah), 14.IV 2023, 5♀, 3♂; cucumber field, Basra, 21.V 2023, 1♀; cucumber field, Al-Qadisiyah (Farhaneh), 19.III 2022, 2♂, 1♀; wheat fields, Dhi-Qar (Naseriyah), 8.V 2023 2♂, 3♀.

REMARK. This species has been reported already by Khalaf (1957) as *Metasyrphus corollae* from Baqouba and Samarra; Maaroof and Amin (1989) as *Metasyrphus corollae* from Mosel; Mohamed and Abdullah (1989) as *Syrphus corollae* from Mosel; Hussein (2014) as *Metasyrphus taeniops* from Al-Qadesiyah; Abdul-Razzaq (2014) from Dhi-Qar; Atta *et al*. (2019) from Basra; Alkhafaji *et al*. (2022) from Abu-Ghoraib. This is the first record of this species from Babil and Wasit provinces of Iraq.

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

MATERIAL EXAMINED. Iraq: wheat fields, Al-Qadisiyah (Afak), 13.III 2023, 2♂, 3♀; cucumber field, Wasit (kut), 24.XI 2022, 2 ♀; tomato field, Babil (Hillah), 19.III 2022, 2♀.

Genus *Ischiodon* Sack, 1913

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

MATERIAL EXAMINED. Iraq: wheat fields, Maysan, 26.V 2023, 2♀; Wheat fields, Babil, 18.V 2023, 1♂, 2♀; tomato field, Basra, 25.XI 2022, 1 ♀.

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

REMARK. Alkhafaji *et al*. (2022) reported this species from Abu-Ghoraib.

Genus *Melanostoma* Schiner 1860

****Melanustoma mellinum* (Linnaeus 1758)**

MATERIAL EXAMINED. Iraq: wheat fields, Al-qadisiyah (Farhaneh), 13.III 2023, 3♀; wheat field, Dhi-qar, 6.V 2023, 2♂, 3♀; wheat fields, Dhi-qar (Naseriyah), 8.V 2023, 3♀.

Genus *Merodon* Meigen, 1803

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

REMARK. This species has been reported from Iraq (Vujić *et al*., 2024).

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

REMARK. Type locality of this species is “Kurdistan” (Iraq) (Peck, 1988).

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

REMARK. *Merodon pallidus* Macquart, 1842 was synonymized with *M. pruni*. The type locality of *M. pallidus* is Bagdad (Iraq) (Peck, 1988).

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

REMARK. Type locality of this species is Iraq, "Mesopotamia" (Peck, 1988).

Genus *Myathropa* Rondani, 1845

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

REMARK. This species has been reported from Iraq (Augul, 2016).

Genus *Scaeva* Fabricius, 1805

***Scaeva pyrastri* (Linnaeus, 1758)**

REMARK. This species has been reported from wheat fields in Basra (Mouhammed, 2017).

Genus *Spilomyia* Meigen, 1803

***Spilomyia graciosa* Violovitch, 1985**

REMARK. This species was described from Swaratuka in Iraq (Violovitch, 1985).

Genus *Sphaerophoria* Lepeletier et Serville, 1828

****Sphaerophoria bengalensis* Macquart, 1842**

MATERIAL EXAMINED. Iraq: wheat fields, Al-Qadisiyah (Afak), 17.III 2023, 2♂, 3♀.

***Sphaerophoria scripta* Linnaeus, 1758**

REMARK. This species has been reported from Dhi-Qar and Saffar (Abdul-Razzaq, 2014), Baghdad and Karbala (Al-Saffar & Augul, 2015), Basra (Atta *et al*., 2019), and Abu-Ghoraib (Al-Khafaji *et al*., 2022).

Genus *Syritta* Lepeletier et Serville 1828

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

MATERIAL EXAMINED. Iraq: Babil (Helleh), 17.III 2022, 4♀; tomato fields, Wasit, 23.VII 2022, 1♂; wheat fields, Wasit, 8.IV 2023, 3♀; cucumber fields, Maysan (Ammareh), 7.VII 2023, 4♂, 2♀.

Genus *Syrphus* Fabricius, 1775

REMARK. Alkhafaji *et al*. (2022) recorded *Syrphus baltitus* from Abu-Ghoraib, but this is probably a misprint for *Episyrphus balteatus*.

***Syrphus ribesii* (L., 1758)**

REMARK. This species has been reported already from Dhi-Qar in Iraq (Abdul-Razzaq, 2014).

CONCLUSION

A checklist of 24 species of hover flies is provided for Iraq for the first time. The diversity of Syrphidae in Iraq is very low in comparison with neighboring countries. For example, there are 41 hoverfly species reported from Saudi Arabia (Dawah *et al*., 2020), and nine species from Kuwait (Al-Houty, 1989). The syrphid fauna of Turkey includes 314 species and the fauna of Iran consists of 269 species (Dousti, 2023). It is very likely that more research employing a greater variety of collection methods, and particularly exploring the northern mountains, will greatly increase the number of recorded species in Iraq.

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