Faunistic work on the Hover flies (Diptera: Syrphidae) of district Narowal, Pakistan

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Abstract

The present study was conducted to initiate the faunistic work on the family Syrphidae from District Narowal, Punjab. The specimens were collected from the different sites of study area during January to September 2016 and collections were done from the following host; grasses, flowers of Raphanus sativus, Brassica campestris, Eruca sativa, Trifolium alexandrinum, Parthenium hysterophorus and Capsicum annuum by using common entomological net. Twenty species from 12 genera of two sub-families were identified and all of them are new records to the study area. Mesembris quadriovittatus Wiedemann (1819) is recorded for the first time from Pakistan.

Keywords: Faunistic, Syrphidae, District Narowal, Pakistan

Introduction

Hover flies (Syrphidae: Diptera) are one of the most diverse and worldwide distributed group of true flies, comprising about 6107 species under 209 genera [1-2]. Hover flies (Diptera: Syrphidae) are popularly known as syrphid flies or flower flies. They can be found in a diverse habitat ranges from forest to residential areas [3]. Due to its friendly behavior with human being and on our ecosystem both larvae and adults have an economic importance. Larvae of subfamily Syrphinae are zoophagous while subfamily Er Istalinae has a diverse mode of feeding habitats [4].

Various taxonomic studies have been conducted with time in order to explore the Syrphid fauna of Pakistan [5-13]. Later, based on previous studied, Ghorpade and Shehzad, [14] reported 84 species in the check-list on the Syrphidae of Pakistan. After that, Abdul Haq et al., [15]; Arif et al., [16]; Irshad, [17]; Khan et al., [18]; Turk et al., [19] and Turk et al., [20] contributed in the systematic and importance of this group.

Ghorpade, [21] presented a great work on the Syrphidae of North-west Frontier of sub-continent, reporting 340 species under 96 genera in 15 tribes and 3 sub-families; and discuss briefly about the synonyms, taxonomic remarks and geographical distribution of all species. Khan and Hanif, [22] worked on the faunal diversity of Syrphidae form Chakwal and reported sixteen species under 13 genera of two subfamilies. Subhan and Shah, [23] worked on the taxonomy of genus Sphaerophoria Le Peletier et Serville, 1828 from the Northern Dry Mountains Region and reported 3 species viz; S. bengalensis Macquart, 1842, S. Indiana Bigot, 1884 and S. scripta (Linnaeus, 1758) along with their diagnostic characters, distribution, synonymy and male genitalia of the species are provided from Pakistan. Hassan et al., [24] studied the Syrphid fauna of Poonch District Azad Kashmir and reported 36 species under 18 genera of two subfamilies of Syrphidae with new country records.

Currently three subfamilies, Syrphinae, Er Istalinae and Microdon tinae and 14 tribes are included in this family [25]. The present study was conducted to initiate the work on this important group from district Narowal, Pakistan.

Material and Method

The adult specimens were collected from the Raphanus sativus, Brassica campestris, Trifolium alexandrinum, Eruca sativa, Parthenium hysterophorus, Capsicum annuum and from the grasses during the different timing of the year. The collections were done during the different months of the year 2015. The specimens were collected during 11:00 A.M to 1:00 P.M and 3:00 P.M to 4:00 P.M having an average temperature of 20-33 °C by using common entomological net.
The collection areas were selected from tehsil Shakargarh including; Shakargarh City, Dhudo Chak, Mangrai, Pindi Bohri, Essa, Noor Kot, Mir Poor, Sola, Sahgta, etc. The specimens were killed in a killing jar and then placed in an envelope to reach at laboratory. The specimens were pinned and set according to the scientific way. The specimens were identified with the help of Brunetti, (1923) [8] and by the help of Dr. Kumar Ghorpade. The specimens have been deposited in the National Insect Museum, Islamabad Pakistan.

**Result and Discussion**

The current study yielded 20 species under 12 genera of two subfamilies of family Syrphidae, all of them are new record to the study area. *Mesembrius quadrivittatus* Wiedemann (1819) is new record to the Syrphid fauna of Pakistan. The rich biodiversity in the Punjab province of Pakistan are due to its surrounding areas as, Indian states of Punjab and Rajasthan in east, Azad Kashmir and Indian held Jammu and Kashmir in north-east, province of Sindh to the south. Balochistan province to southwest, province of Khyber Pakhunkhwa to west and Capital Territory (Islamabad) in north. Tehsil Shakargarh lies in north-east of Narowal district of Punjab province. It is located at west bank of River Ravi and has coordinates of 32.2643° N, 75.1599° E.

**Family Syrphidae**

**Subfamily Eristalinae**

**Tribe Eristalini**

*Genus Eristalis* Latreille, 1804

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


2. **Eristalis taeniops** (Wiedemann, 1818)


3. **Eristalis tarsalis** (Macquart, 1855)


4. **Eristalis arvorum** (Fabricius, 1787)


5. **Eristalis aeneus** (Scopoli, 1763)


6. **Eristalis megacephalus** (Rossi, 1794)


7. **Eristalis obliquus** (Wiedemann, 1824)


8. **Mesembrius quadrivittatus** (Wiedemann, 1819)

Tribe Milesini
Genus *Syrrita* Lepeletier and Serville, 1828

9. *Syrrita orientalis* Macquart, 1842
Remarks: Hassan et al., [24] found this species from the flowers of *Brassica campestris*, *Coriandrum sativum*, mint (Lamiaceae), and grasses.

Remarks: This species mostly preferred the grassy fields and Hassan et al., [24] collected this species from Azad Kashmir flies from the following host plants mint (Lamiaceae), *Brassica campestris* and *Coriandrum sativum*. Sajjad and Saeed, [27] observed the same species from the four host plants.

Subfamily Syrphinae
Tribe Bacchini
Genus *Melanostoma* Schiner, 1860


Tribe Paragini
Genus *Paragus* Latreille, 1804

Remarks: Thompson and Ghorpade, [33] differentiated this species by the presence of serratite on posterior margin of scutellum, first abdominal tergite being medially reddish and hind femora yellow with narrow dark brownish annulus, mesonotal pile short, wing hyaline. Sajjad and Saeed, [28] observed thirty eight host plants for this species.

Tribe Syrphini
Genus *Betasyrphus* Matsumura, 1917


Remarks: Sajjad and Saeed, [28] observed thirty five host plants for this species. Ali et al., [32] reported this species from the canola flowers at Multan.

Remarks: Hassan et al., [24] collected this species from the flowers of *Brassica campestris*, grasses and wild flowers. Sajjad and Saeed, [28] observed thirty seven host plants for this species. Ali et al., [32] reported this species from the canola flowers at Multan. Genus *Eupeodes* Osten Sacken, 1877

Remarks: Hassan et al., [24] collected this species from the flowers of *Brassica campestris*, grasses and wild flowers. Sajjad and Saeed, [28] observed thirty seven host plants for this species. Ali et al., [32] reported this species from the canola flowers at Multan.

Remarks: Hassan et al., [24] reported this species from *Brassica campestris* flowers and hovering under pine trees (Pinus wallichiana).

Remarks: Hassan et al., [24] reported this species from the flowers of *Brassica campestris*, *Coriandrum sativum*, wild flowers, grasses, and hovering under pine trees (Pinus wallichiana). Sajjad and Saeed, [28] observed thirty twenty four host plant for this species. Ali et al., [32] reported this species from the canola flowers at Multan.

Afghanistan, India, Nepal [29, 30, 21]. Remarks: Hassan et al., [24] reported this species from the flowers of Brassica campestris, wild flowers and while hovering under pine trees (Pinus wallichiana). Genus Scaeva Fabricius, 1805

20. Scaeva latimaculata (Brunetti, 1923)

21. Sphaerophoria scripta (Linnaeus, 1758)

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References


