INTRODUCTION TO HOVER FLIES (DIPTERA: SYRPHIDAE) OF SUNFLOWER AND PUMPKIN FIELDS IN WEST AZERBAYJAN PROVINCE- IRAN

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ABSTRACT: In order to study hover flies in sunflower and pumpkin fields as well as grasslands of Khoy region in Iran, this study was carried out during 2008- 2009. The specimens were collected using malaise trap and hand net in fourteen localities. Among of 653 collected specimens, 44 species belonged to 25 genera and two subfamilies were verified that all of them are as new records for studied area and two species, *Cheilosia proxima* and *Cheilosia Sahlbergi*, are new records for Iran fauna.

KEY WORDS: Fauna, Khoy region, hover flies, flower flies, pollinator, Syrphidae.

Khoy region, with an area of 5548 Square kilometers, located in north west of Iran, is the most important center for roasted seed including sunflower seed and pumpkin seed as well as honey production in terms of quality and quantities in Iran. Syrphidae is one of the largest families of the order Diptera, which comprises the popularly called hover flies or flower flies. Among many interesting attributes is their famous precision at hovering. They have the ability to keep the body motionless in the air for quite a period of time during flight. This is the most significant character of these flies, coupled usually with their yellow banded abdomens. The adults commonly visit flowers (Kevan & Baker 1983) and use the nectar for energy and/or pollen for proteins, lipids and vitamins (Faegri & van der Pijl, 1979 and Saribiyik, 2003). These floral resources enhance the longevity and fecundity of adult flies (Topham and Beardsley, 1975). These flies are common pollinators almost wherever flowers are found, being absent only in truly arid areas and the Polar Regions. For this reason, it can be predictable that these pollinator species have a striking role in producing seed and honey in this area. Recently, the fauna of syrphid has been studied by the related taxonomists as well in Iran (Modarres Awal, 1997, Khiaban et al. 1998, Dousti, 1999, Gharali et al. 2000, Alichi et al. 2002, Gharali et al. 2002, Goldasteh et al. 2002, Sadeghi et al. 2002, Golmohammadi & Khiaban, 2004, Gilasian, 2005). Checklists of Iranian hover flies were listed by Peck (1988) and Dousti & Hayat (2006). Unfortunately, so far the syrphid fauna of this region has not been well known thus it is the subject of the present study.

MATERIAL AND METHODS

Studied specimens were collected once a week, during 2008- 2009. Flies were caught using sweeping entomological net and malaise trap in fourteen localities which are situated near the sunflower and pumpkin fields as well as grasslands (Fig. 1). The collected specimens were placed in ordinary paper envelopes after killing them in cyanid bottle in order to bring them to the laboratory. The

collection thus brought was placed in a desiccator (having water at its bottom) for about 24 h in order to soak and soften them. Thereafter, they were pinned using 000, 00, 0, 1 and 2 mounted pins and their wings and legs set on appropriate setting boards to facilitate morphological studies and the others were put into tubes filled with 70% alcohol. For identification, the materials were examined under a Nikon (SMZ 1000) binocular microscope manufactured in Japan. The identification was made up to the specific level with the help of relevant literature such as Bezzi (1966), Vockeroth & Tompson (1987), Bei- Bienko (1988), Stubbs & Falk (2002) and Lyneborg & Barkemeyer (2005).

RESULTS

The present investigation has richly yielded 44 species, which are arranged in 25 genera and two subfamilies. All of the verified species are as new records for the studied region and two species (marked by an asterisk) are newly introduced to Iran fauna that are totally listed as follows:

Subfamily Syrphinae

***Dasysyrphus albostriatus* (Fallén, 1817):** Syrphici Sveciae: 42 (*Scaeva*). Type locality: Scania = prov. Skane] (Sweden).
Material examined: 5 specimens (3♂♂, 2♀♀).
Distribution: From Fennoscandia south to Iberia; from Ireland eastwards through central and southern Europe (Italy, the former Yugoslavia) to Crete, Turkey and European parts of Russia (from the north to the Crimea and the Caucasus); into central Asia to Tuva; north Africa; Japan, Iran.
***Epistrophe euchroma* (Kowarz, 1885):** Wien. Ent. Ztg, 4: 135 and 167 (*Syrphus*). Type locality: "Bohmen; Asch" [=Czechoslovakia: As].
Material examined: 9 specimens (5♂♂, 4♀♀).
Distribution: Northern Fennoscandia south to the Pyrenees and central Spain; from Britain (southern England) eastwards through central Europe into Russia, reaching the Caucasus in the south and eastern Siberia (Yakut) in Asia. Iran.
***Episyrphus balteatus* (De Geer, 1776):** Mém. Ins., 6: 116 (*Musca*). Type locality: not given (Sweden).
Material examined: 13 specimens (4♂♂, 9♀♀).
Distribution: Fennoscandia to the Mediterranean; Canary Isles, Azores and N Africa; Ireland through Eurasia to the Pacific coast; south through the Oriental region to Sri Lanka;Australia. This is an extremely migratory species with records from offshore islands of northern Europe. Iran.
***Scaeva albomaculata* (Macquart, 1842):** Mém. Soc. Sci. Agric. Lille, 1841(1): 146 and Dipt. exot., 2(2): 86 (*Syrphus*). Type localities:"Mont-sinai" (Egypt)."Alger" (Algeria).
Material examined: 8 specimens (2♂♂, 6♀♀).
Distribution: Iberian peninsula and round the Mediterranean basin to Morocco; Canary Islands; eastward through southern Russia, the Caucasus and southern Siberia to the far east and northern China; Afghanistan, Mongolia; highly migratory and occasionally reaches as far north as Britain. Iran.
***Scaeva pyrastri* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 594 (*Musca*). Type locality: Svecia (Sweden).
Material examined: 13 specimens (5♂♂, 8♀♀).
Distribution: Fennoscandia south to Iberia, the Mediterranean, Canary Isles and North Africa; from Ireland east through much of Europe and Asia Minor into European Russia; through Siberia from the Urals to the Pacific coast (Kuril Isles); India; China; North America from Alaska to California and New Mexico. Iran.
***Eupeodes corollae* (Fabricius, 1794):** Entom. Syst., 4: 306 (*Syrphus*). Type locality: Kilia [=Kiel] [Germany].
Material examined: 10 specimens (4♂♂, 6♀♀).

Distribution: From Iceland, Fennoscandia and the Faroes south to Iberia, the Mediterranean, Madeira, the Canary Isles and N Africa; coastal States of Africa down to and including S Africa; Mauritius; from Ireland eastwards through most of Europe into European parts of Russia; through Siberia from the Urals to the Pacific coast; Japan; China; Formosa. Iran.

***Eupeodes luniger* (Meigen, 1822):** Syst. Beschr., 3: 300 (*Syrphus*). Type locality: not given (aus der Baumhauerischen Sammlung) (Europe).
Material examined: 8 specimens (4♂♂, 4♀♀).
Distribution: From Fennoscandia south to Iberia, the Mediterranean, Madeira and N Africa; from Ireland eastwards through most of Europe into European parts of Russia and Asia Minor (including Turkey); in Siberia from the Urals to the Pacific coast (Kuril Isles); Japan; India; Iran.

***Eupeodes nuba* (Wiedemann, 1830):** Aussereurop. Zweifl. Insekt., 2: 136 (*Syrphus*). Type locality: ''Nubien" (Sudan).
Material examined: 14 specimens (8♂♂, 6♀♀).
Distribution: Canary Isles, Mediterranean basin, from southern France to Italy (Sicily) and parts of the former Yugoslavia, Crete, Cyprus, Lebanon, Israel, Egypt and Morocco; Switzerland in central Europe, Roumania; Transcausasus and south-western parts of Asia (Uzbekistan, Kirghizistan, Tajikistan) to Afghanistan and Mongolia. In eastern parts of the Afrotropical region from Ethiopia south to South Africa (inclusive), Iran.

***Epistrophe euchroma* (Kowarz, 1885):** Wien. Ent. Ztg, 4: 135 and 167 (*Syrphus*) .Type locality: "Bohmen; Asch" [=Czechoslovakia: As].
Material examined: 3 specimens (1♂, 2♀♀).
Distribution: Northern Fennoscandia south to the Pyrenees and central Spain; from Britain (southern England) eastwards through central Europe into Russia, reaching the Caucasus in the south and eastern Siberia (Yakut) in Asia, Iran.

***Ischidon aegyptius* (Wiedemann, 1830):** Aussereurop. Zweifl. Insekt, 2: 133 (*Syrphus*). Type localities: "Egypten und Nubin" (Egypt and Sudan).
Material examined: 1 specimen (1♂).
Distribution: Throughout the Afrotropical region and into N Africa to the coast of the Mediterranean and Yemen; southern Spain, southern Italy, the Balearic Islands and the Canaries, Iran.

***Sphaerophoria rueppelli* (Wiedemann, 1830):** Aussereurop. zweifl. Insekt., 2: 141 (*Syrphus*). Type locality: Nubien; Abyssinia (lectotype des. Vockeroth, 1971:1633).
Material examined: 18 specimens (8♂♂, 10♀♀).
Distribution: From southern Norway and Sweden south to North Africa and the Canary Isles; from Ireland east through central and southern Europe, including Greece, Turkey and Mediterranean islands into Asia Minor, Russia and Afghanistan and on to the Pacific coast , China and Korea; in eastern parts of the Afrotropical region south to Kenya, Iran.

***Sphaerophoria scripta* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 594 (*Musca*).Type locality: ''Svecia" (Sweden); ''Uppsala, Sweden" (lectoype des. Vockeroth, 1971: 1633).
Material examined: 25 specimens (12♂♂, 13♀♀).
Distribution: A highly migratory species; southwest Greenland, Iceland and Fennoscandia south to the Mediterranean, the Canary Isles and N Africa; from Ireland eastwards through much of the Palaearctic to the Pacific coast of Asia; Kashmir and Nepal, Iran.

***Sphaerophoria turkmenica* Bankowska, 1964:** Annls zool., Warsz., 22(15): 345 (*Sphaerophoria*). Type locality: ''Turkmenische SSR, West Kopet Dag, Berg Siunt".
Material examined: 11 specimens (3♂♂, 8♀♀).
Distribution: Romania, USSR-South European territory, Transcaucasus, Soviet Middle Asia, Afghanistan (Peck, 1988) and Turkey (Hayat & Alaoglu, 1990), Iran.

***Syrphus ribesii* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 593 (*Musca*). Type locality: Svecia. (Sweden).
Material examined: 15 specimens (6♂♂, 9♀♀).
Distribution: From Iceland and Fennoscandia south to Iberia and the Mediterranean; Canary Isles; from Ireland eastwards through most of Europe into Turkey, European parts of Russia and Afghanistan; from the Urals to the Pacific coast (Kuril Isles); Japan; North America from Alaska south to central parts of the USA, Iran.

***Syrphus vitripennis* Meigen, 1822:** Syst. Beschr., 3: 308 (*Syrphus*). Type locality: not given (Europe).

Material examined: 17 specimens (8♂♂, 9♀♀).
Distribution: Throughout most of the Palaearctic region, including N Africa; in North America from Alaska to California; Formosa, Iran.

***Xanthogramma pedissequum* (Harris, 1776):** Expos. Eng. Ins.: 61, tab. XV, fig. 19 (*Musca*). Type locality: not given (England).
Material examined: 5 specimens (4♂♂, 1♀♀).
Distribution: Uncertain, due to confusion with related species, but from from Britain and Atlantic seabord countries south to the Paris basin and into central Europe to the Alps (France, Switzerland), Iran.

***Chrysotoxum elegans* Loew, 1841:** Stettin. ent. Ztg, 2: 140 (*Chrysotoxum*). Type locality: "Wien" (Austria).
Material examined: 8 specimens (4♂♂, 4♀♀).
Distribution: Fennoscandia south to Iberia and the Mediterranean; through central and southern Europe into European parts of Russia as far as the Caucasus Mountains and into Turkey, Iran.

***Chrysotoxum veralli* Collin, 1940:** Entomologist's mon. Mag., 76: 155 (*Chrysotoxum*, for *Chrysotoxum octomaculatum*: Verrall, 1901: British flies, 8: 647, not Curtis, 1837; misidentiflcation). Type localities "at Harpenden (Herts.), from Timworth (Suffolk), Chippenham Fen and Fleam Dyke (Cambs.), and Fowl Mere near Wretham (Norfolk)" (Great Britain).
Material examined: 6 specimens (2♂♂, 4♀♀).
Distribution: Denmark south to central France; Britain (Wales and central/southern England) eastwards through central Europe into European parts of Russia to the Caucasus and on into eastern Siberia, Iran.

***Melanostoma mellinum* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 593 (*Musca*). Type-locality: Svecia (Sweden).
Material examined: 19 specimens (8♂♂, 11♀♀).
Distribution: From Iceland and Fennoscandia south to Iberia, the Mediterranean and North Africa; from Ireland eastwards through most of Europe into European parts of Russia; Siberia from the Urals to the Pacific coast; North America from Alaska to Quebec and south to Washington, Iran.

***Paragus tibialis* (Fallén, 1817):** Syrphici Sveciae: 60 (*Pipiza*). Type locality: in Vestrogothia; in arvis montosis Scaniae [=prov. Vastergotland and prov. Skane] (Sweden).
Material examined: 9 specimens (5♂♂, 4♀♀).
Distribution: Uncertain at present, due to confusion with other species until recently; apparently occurs from southern Norway, Sweden and Denmark south to the Mediterranean coast of Europe, North Africa and the Canary Isles; from Britain (southern England) eastwards through central and southern Europe to the former Yugoslavia, Turkey, Israel, Nearctic and Oriental Regions, Iran.

***Paragus albifrons* (Fallén, 1817):** Syrphici Sveciae: 60 (*Pipiza*). Type locality: "prope Stenshufvud Scaniae" (Sweden).
Material examined: 6 specimens (2♂♂, 4♀♀).
Distribution: From southern Norway and Denmark south to the Mediterranean; from Britain (southern England) eastwards through central and southern Europe (Italy, the former Yugoslavia, Bulgaria) into European parts of Russia and the Caucasus and on to the Pacific; Iran, Afghanistan and Mongolia (Speight, 2005) and Turkey (Düzgüneş et al., 1982), Iran.

***Paragus bicolor* (Fabricius, 1794):** Entom. Syst., 4: 297 (*Syrphus*). Type locality: "Barbariae" [= NW Africa].
Material examined: 22 specimens (8♂♂, 14♀♀).
Distribution: From Belgium (extinct) south to the Mediterranean and North Africa; from France eastwards through central and southern Europe to Mongolia; Iran and Afghanistan; North America, Iran.

***Paragus compeditus* Wiedemann, 1830:** Aussereurop. Zweifl. Insekt., 2:89 (*Paragus*). Type locality: "Egypten" (Egypt).
Material examined: 18 specimens (7♂♂, 11♀♀).
Distribution: USSR-South European territory, Transcaucasus, Kazakhstan, Soviet Middle Asia, Iran, Afghanistan, North China, Egypt (Peck, 1988) and Turkey (Hayat & Clauusen, 1997), Iran.

***Paragus quadrifasciatus* Meigen, 1822:** Syst. Beschr., 3: 181 (*Paragus*). Type locality: Frankreich (France).
Material examined: 21 specimens (9♂♂, 12♀♀).
Distribution: From northern France (Brittany) south to the Mediterranean and North Africa; from Portugal eastwards through southern and central Europe to Roumania, Greece (including Crete and Rhodes), Turkey, Iran and the Caucasus; European parts of Russia eastwards through Kazakhstan, Tadjikistan etc. to the far east; northern China, Korea, Japan, Iran.

Subfamily Milesiinae
***Cheilosia scutellata* (Fallén, 1817):** Syrphici Sveciae: 55 (*Eristalis*). Type localities: "Esperod Scaniae, Aras Wermlandiae" (Sweden).
Material examined: 25 specimens (9♂♂, 16♀♀).
Distribution: Fennoscandia south to Iberia and round the Mediterranean to Greece, Turkey and North Africa; from Ireland eastwards through Eurasia to the Pacific coast, Iran.
***Cheilosia latifacies* Loew, 1857:** Verh. zool. –bot. Ver. Wien, 7: 593 (*Cheilosia*). Type locality: "Brussa" [=Bursa] (Turkey).
Material examined: 16 specimens (7♂♂, 9♀♀).
Distribution: Poland, Czech Republic and Slovakia, France, Switzerland, Spain, Italy, The former Yugoslavia, Roumania, USSR-South European territory, Transcaucasus, Soviet Middle Asia, Turkey, Afghanistan and Algeria.
***Cheilosia proxima* (Zetterstedt, 1843):** Dipt. Scand., 2:792 (Eristalis). Type- locality: "in Ostrogothia ...; ad Haradshammar" (Sweden)
Material examined: 12 specimens (4♂♂, 8♀♀).
Distribution: Europe: from Scandinavia to Italy, Yugoslavia, Bulgaria, USSR: from Leningrad to Transcaucasia, West Siberia, Far East.
***New record for the fauna of Iran.**
***Cheilosia Sahlbergi* (Becker, 1894):** Nova Acta Acad. Caesar. Leop. Carol., 62 (3): 354 (Chilosia). Type localities: "Bergun, Schweiz, Finnland" (Switzerland, Finland).
Material examined: 3 specimens (1♂, 2♀♀).
Distribution: Europe: Norway, Finland, Great Britain, Poland, Czechoslovakia, Switzerland, Romania, Bulgaria, USSR: North European territory (Kola peninsula), Central European territory (Latvian, Lithuanian), Transcaucasia.
***New record for the fauna of Iran.**
***Volucella inanis* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 595 (*Musca*). Type locality: "Europa".
Material examined: 11 specimens (5♂♂, 6♀♀).
Distribution: From southern Fennoscandia south to Spain and the Mediterranean (including islands, e.g. Crete), north Africa and Asia Minor (Syria); from Britain (southern England) eastwards through central and southern Europe into Turkey and European parts of Russia and on through Siberia to the Pacific; Afghanistan, Mongolia, China, Iran.
***Volucella zonaria* (Poda, 1761):** Insect. Mus. Graecensis: 118 (*Conops*). Type locality: not given ("ad Graecium") [= environs of Graz] (Austria).
Material examined: 17 specimens (10♂♂, 7♀♀).
Distribution: From Poland south to the Mediterranean (including islands, e.g. Crete) and North Africa; from Britain (southern England) eastwards through central and southern Europe (Italy, the former Yugoslavia, Greece) into Turkey and European parts of Russia and on through Siberia to the Pacific; Mongolia, Iran.
***Eumerus sogdianus* Stackelberg, 1952:** Trudy zoll Inst., 12: 390 (*Eumerus*) Type–locality: Tajikistan: Stalinabad [=Dushanbe] calley of the r. Kafernighan.
Material examined: 23 specimens (9♂♂, 14♀♀).
Distribution: Denmark south to southern Spain; from Belgium eastwards through central and southern Europe into European parts of Russia and on into central Asia (Kazakhstan, Tajikistan, Uzbekistan, Mongolia); China, Iran.
***Merodon nanus* (Sack, 1931):** 31. Syrphidae, Fliegen pal. Reg., 4(4): 322 (*Lampetia*). Type locality: Kurdistan [=on borders of Iran, Iraq and Turkey].
Material examined: 16 specimens (9♂♂, 7♀♀).
Distribution: The former Yugoslavia, Bulgaria, USSR-Transcaucasus (Georgia and Armenia), Iraq and Turkey, Iran.

***Ceriana conopsoides* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 590 (*Musca*). Type locality: Europa.
Material examined: 3 specimens (1♂, 2♀♀).
Distribution: Finland south to the Mediterranean and North Africa; France east through central Europe and on into Asiatic parts of Russia to the Pacific; China, Iran.
***Neoascia podagrica* (Fabricius, 1775):** Syst. entom.: 768 (*Syrphus*). Type locality: "Dania".
Material examined: 9 specimens (6♂♂, 3♀♀).
Distribution: From Fennoscandia south to Iberia and the Mediterranean, including Madeira, Cyprus and Crete; N Africa; from Ireland eastwards through northern, central and southern Europe (Italy, the former Yugoslavia, Greece) to Turkey and Israel; European parts of Russia and on into western Siberia as far as Cis-Baikal, Iran.
***Eristalinus sepulchralis* (Linnaeus, 1785):** Syst. Nat., Ed.10, 1: 596 (*Musca).* Type locality: "Europa".
Material examined: 26 specimens (11♂♂, 15♀♀).
Distribution: Fennoscandia south to Iberia and the Mediterranean, including North Africa; from Ireland through most of Europe into Turkey and European parts of Russia; through Siberia to the Pacific coast; Japan; China; India, Iran.
***Eristalinus taeniops* (Wiedemann, 1818):** Zool. Meg., Kiel, 1(2): 42 (*Eristalis).* Type-locality: "Vorgebirge der Guten Hoffnung" [=Cape] (South Africa).
Material examined: 19 specimens (10♂♂, 9♀♀).
Distribution: Portugal, Spain and round the Mediterranean basin (southern France including Corsica, Italy including Sardinia and Sicily, parts of the former Yugoslavia, Albania, Roumania, Cyprus, Greece (including Crete and Rhodes), Turkey, Lebanon, Israel, North Africa (Syria, Egypt, Libya, Tunisia, Morocco), Canary Islands, Transcaucasus; in eastern parts of the Afrotropical region down to South Africa (inclusive) and in Nepal and parts of Pakistan and northern India in the Oriental region , Iran.
***Eristalinus aeneus* (Scopoli, 1763):** Ent. Carniolica: 356 sex?; (*Conops*).Type locality: Idria (Yugoslavia)
Material examined: 25 specimens (16♂♂, 9♀♀).
Distribution: Cosmopolitan; southern Sweden south to N Africa and the Canary Isles; on into the Afrotropical region south to Kenya and Tanzania; from Ireland eastwards through central and southern Europe and on through Russia and China to the Pacific and south into the Oriental region; Mauritius; in North America from Minnesota and Ontario south to California and Texas; Hawaii, Australia and the Gilbert and Ellis islands in Australasia; Bermuda, Iran.
***Eristalinus megacephalus* (Rossi, 1794):** Mantissa insectorum, 2: 63 (*Syrphus).* Type locality: not given ("Etruria") [=Toscana] (Italy).
Material examined: 28 specimens (15♂♂, 13♀♀).
Distribution: Southern Spain and coastal parts of Italy round the Mediterranean basin (including islands, e.g. Corsica, Malta, Sicily, Crete) to Turkey and on into Egypt and North Africa; southwards through the Afrotropical region to South Africa, Iran.
***Eristalis arbustorum* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 591 (*Musca*).Type locality: Europa.
Material examined: 37 specimens (18♂♂, 19♀♀).
Distribution: Throughout the Palaearctic region, including North Africa; North America from Wisconsin to Labrador and south to Kansas and South Carolina; reaches the Oriental region in northern India, Iran.
***Eristalis tenax* (Linnaeus, 1758):** Syst. Nat., Ed. 10, 1: 591 (*Musca*).Type locality: Svecia (Sweden).
Material examined: 29 specimens (12♂♂, 17♀♀).
Distribution: Highly migratory; cosmopolitan; the most widely distributed syrphid species in the world, known from all regions except the Antarctic; found throughout Europe except in the far north, Iran.
***Helophilus trivittatus* (Fabricius, 1805):** Syst. Antl.: 235 (*Eristalis*). Type locality: "Austria"
Material examined: 24 specimens (14♂♂, 10♀♀).
Distribution: From Fennoscandia south to the Mediterranean and from Ireland eastwards through Eurasia to the Pacific, Afghanistan, Iran.

***Myathropa florea* (Linnaeus, 1758):** Syst. Nat. Ed. 10, 1: 591 (*Musca*). Type locality: Europa.
Material examined: 8 specimens (3♂♂, 5♀♀).
Distribution: From Fennoscandia south to Iberia and the Mediterranean, the Canary Isles and North Africa; from Ireland eastwards through Eurasia to the Pacific coast, Iran.
***Syritta pipiens* (Linnaeus, 1758):** Syst. Nat., Ed.10, 1: 594 (*Musca*).Type locality: Europa.
Material examined: 35 specimens (22♂♂, 13♀♀).
Distribution: Becoming cosmopolitan; known from most of the Palaearctic, including North Africa, most of North America, South America and the Oriental region. But records from the Afrotropical region are apparently erroneous, Iran.
***Tropidia scita* (Harris, 1780)**: Expos. Eng. Ins.: 107 (*Musca*). Type locality: not given (England).
Material examined: 3 specimens (2♂♂, 1♀).
Distribution: From Fennoscandia south to central France; from Ireland eastwards through central Europe and on through Russia to the Caucasus and in Asia as far as the Pacific coast and Japan, Iran.

CONCLUSION

Our study indicated that species belonged to subfamily Eristaline were the most common and conspicuous flower flies at the working area. The most abundant pollinators in sunflower and pumpkin fields belonged to *Eristalinus*, *Eristalis*, *Syritta*, *Eumerus* and *Helophilus* whereas the ones at grasslands related *to Eristalis*, *Eristalinus*, *Cheilosia* and *Merodon*. The samples showed that the density of *Volucella* genera get rise at the end of growth season. Among the studied predators, the members of genera *Episyrphus*, *Scaeva*, *Eupodes* and *Syrphus* and the individuals of genera *Paragus* and *Sphaerophoria* were conspicuous in studied fields and grasslands respectively. The specimens caught by malaise traps were female biased which is in agreement with the findings of Hagvar and Nilson (2007) indicating that female flight behavior makes females more vulnerable to Malaise traps than males.

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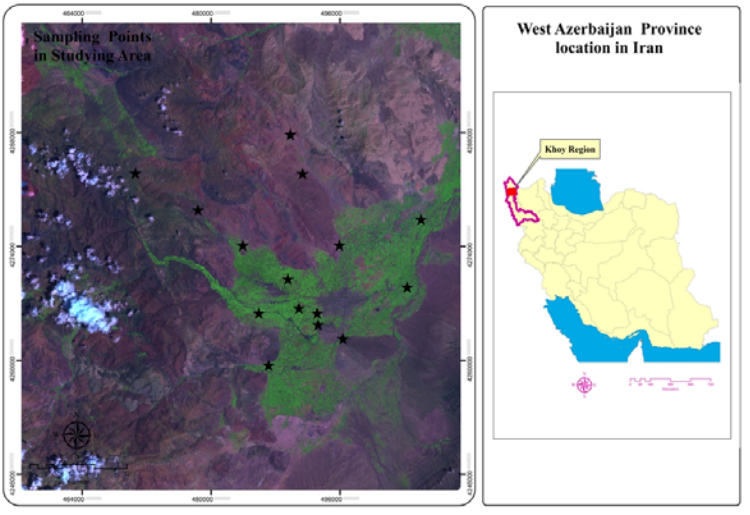

Figure 1. Location of sampling points on satellite image (SPOT) of Khoy region.