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First record of two genera of Hoverflies (Diptera: Syrphidae) from East Azerbaijan Province, Iran

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Summary

Based on collected specimens of hover flies (Diptera: Syrphidae) from East Azerbaijan province located in the northern west of Iran during 2010-2011, two species and genera, *Ferdinandea cuprea* SCOPOLI 1763 and *Sphegina clunipes* FALLÉN 1816, belonging to subfamily Milesiinae were determined as new records for the Iranian insect fauna. The photographs of the specimens are provided.

Key words: Fauna, Diptera, Syrphidae, New records, Hover flies, Iran.

Zusammenfassung

Bei Durchsicht der in den Jahren 2010-2011 gesammelter Schwebfliegen (Diptera: Syrphidae) aus der Provinz Ost-Aserbaidschan, stellten sich *Ferdinandea cuprea* SCOPOLI 1763 und *Sphegina clunipes* FALLÉN 1816, beide der Unterfamilie Milesiinae angehörig, als neu für den Iran heraus.

Introduction

Hoverflies is one of the largest and most diverse families of the order Diptera which include about 200 genera and more than 6.000 described species over the world. These flies are common pollinators which is present wherever flowers are found, being absent only in truly arid areas and the Polar Regions. This group consists of small to medium flies 6-18 mm long which can be distinguished by the special venation of the wing (spurious vein) (KEVAN & BAKER 1983).

The species of the subfamily Milesiinae are the most common and conspicuous which contain about two thirds of hoverflies. Many species, being regular visitors of flowers, are important pollinators of various plants including vegetables, fruit trees (Asteraceae, Brassicaceae, and Rosaceae) and flowering plants (FAEGRI & van der PIJL 1979). In this subfamily humeri is hairy and head naturally sits well forward so that the humeri is clearly visible (MAIBACH et al. 1994).

One of the significant characters of these flies is the ability of them to keep the body motionless in the air for quite a period of time during flight. The adults mainly feed on nectar or pollen for proteins, lipids and vitamins (STUBBS & FALK 2002). Nearly most of Milesiinae members are generally seen around ponds, marshes and wet lands where there is a large amount of decaying vegetation, wood and rotting seaweeds. The larvae contribute to the purification of water by filtering out microorganisms as well as organic products. Some of them feed on plant materials and decaying organic matters (GILBERT 1981).

In the tribe Cheilosini the wide eye rim (zygoma) is not found in other Milesiinae, the rim consisting of a narrow strip bounded by the eye on one side and a groove on the other. In this tribe the face is fairly normal (with a knob) and very hairy species in *Cheilosia* and *Ferdinandea* (BEI-BIENKO 1988). In the tribe Chrysogasterini the presence of a concave face, smoothly leading to a projecting mouth margin, is characteristic of the tribe. The genus *Sphegina* is small, almost glabrous and slender flies. Larvae live in dead wood, in sap runs, in aquatic or subaquatic situations or in decaying vegetable matter (STUBBS & FALK 2002).

Recently the hoverflies fauna of Iran were studied by some taxonomists (DOUSTI 1999; GOLDASTEH et al. 2002; GOLMOHAMMADI & KHIABAN 2004; GILASIAN 2005; DOUSTI & HAYAT 2006; GHARALI & REEMER 2008, 2010; KHAGHANINIA & BASHIRI 2011; KHAGHANINIA et al., 2012; KHAGHANINIA and SHAKERYARI 2012; SHAKERYARI et al., 2012) who shows no records of the *Ferdinandea* RONDANI 1844 and *Sphegina* (MEIGEN 1822) genera from Iran.

Material and methods

Studied specimens were collected from wetlands having long reed beds near to wood lands from Isperekhan and Mekidi valleys located in south and northern east of East Azerbaijan province, respectively, using common entomological sweep-net during 2010 and 2011 (Fig. 1). The samples were killed in a killing jar containing potassium cyanide and the voucher specimens were deposited at Insect Museum of Tabriz University. The

specimens were identified based on valid keys such as STUBBS & FALK (2002) and SPEIGHT (2008). The range and visited flowers of the recorded species are provided mostly from SPEIGHT (2010).

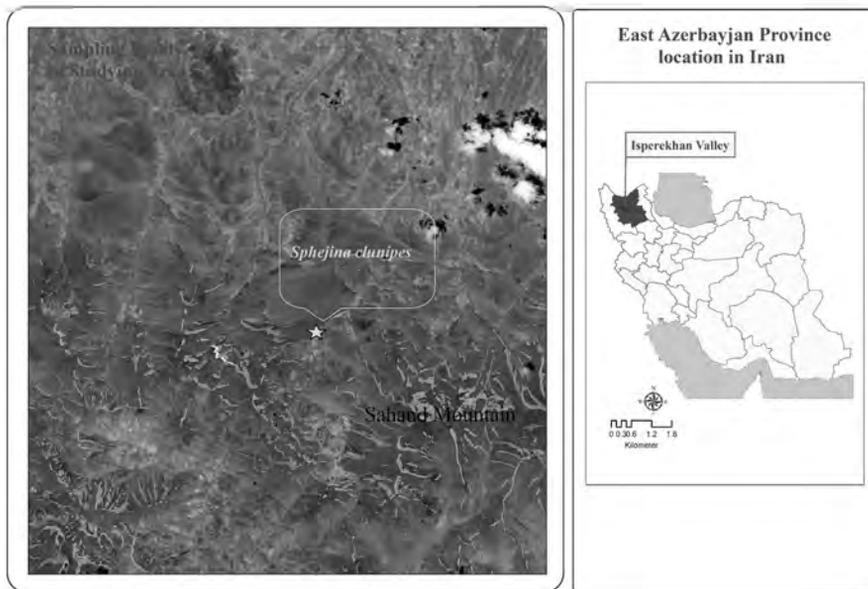


Fig. 1: Location of sampling points in Mekidi and Isperekhan valleys based on satellite images (SPOT).

Results

Two genera belonging to subfamily Milesiinae were determined as new records for the Iranian insect fauna, were obtained by present study.

Family: Syrphidae

Subfamily: Milesiinae

Tribe: Cheilosini

Genus *Ferdinandea* RONDANI 1844

Diagnostic characters: The black thoracic dorsum has grayish longitudinal stripes, rather like *Helophilus* MEIGEN 1822, but there are stout bristles along the lateral edges. The abdomen is brassy colored or bluish black. The wings have clouded inner cross-veins (SPEIGHT 2008).

***Ferdinandea cuprea* (SCOPOLI 1763) (Fig. 2)**

Nuovi Ann. Sci. nat. Ist. Bologna, (2) 2: 196. Type- species: *Conops cuprea* SCOPOLI 1763: Entom. Carniolica 355 (PECK 1988).

M a t e r i a l e x a m i n e d : 1♂: Mekidi valley; 3850.111 N 4653.890 E, 1666 m, 12 July 2010.

D i a g n o s t i c c h a r a c t e r s : There are distinct small but thick spines on all the hind tibiae, these being black or sometimes yellow. Thorax with grey stripes and long side bristles. Hind legs yellow except for last 2 tarsal segments. Abdomen mostly has shining brassy color. Tibiae with black bristles. The wings have clouded inner cross-veins. Wing length 7.5-11.25 mm (STUBBS & FALK 2002).

F l o w e r s v i s i t e d : *Convolvulus*, *Crataegus*, *Hieracium*, *Leontodon*, *Lonicera*, *Mentha*, *Oenothera*, *Prunus cerasus*, *Ranunculus*, *Rosa*, *Rubus fruticosus*, *Sonchus*, *Taraxacum*, *Ulmus*.

D i s t r i b u t i o n : Fennoscandia south to southern Spain and north Africa (Algeria) and round the Mediterranean through southern Europe to Turkey; from Ireland eastwards through central/northern parts of Eurasia to the Pacific coast of Siberia and Japan. **New for the Iranian insect fauna.**

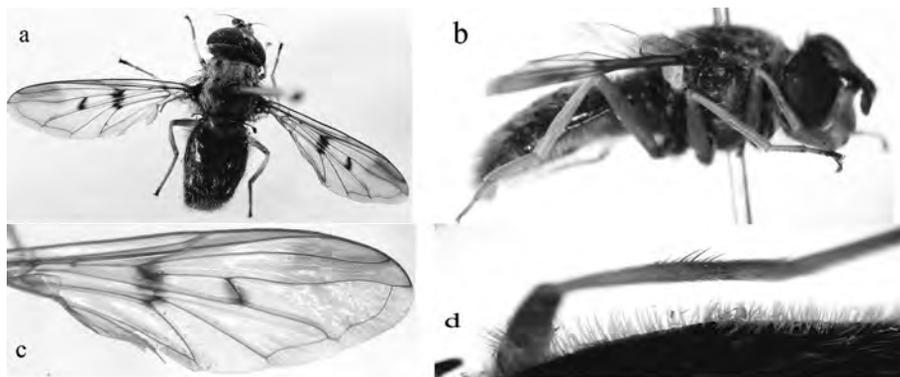


Fig. 2: *Ferdinandea cuprea*: ♀, (a) dorsal view, (b) lateral view, (c) wing, (d) hind tibia.

Tribe: C h r y s o g a s t e r i n i

Genus *Sphegina* (MEIGEN 1822)

These hoverflies are on the whole larger than *Neoascia* WILLISTON 1886, with a conspicuously longer narrow waisted in both sexes. The outer cross-veins have rounded angles and lack infuscation. The front and mid femora are always pale with at most a slight incomplete dusky ring. The males have a yellow patch on tergite 3 and sometimes also on tergite 4 (COE 1953). The larvae occur in accumulations of decaying sap under bark in damp woodlands (BEI-BIENKO 1988).

***Sphegina clunipes* (FALLÉN 1816) (Fig. 3)**

Syrphici Sveciae: 12 (*Milesia*). Type-locality: Smolandia (Sweden). –Distr.: Europe: from Scandinavia; Asia: Japan (PECK 1988).

Material examined: 1 ♀: Isperekhan valley; 3745.376 N 4625.260 E, 2650 m, 8 June 2011.

Diagnostic characters: Abdomen waisted near base. Hind tibia with two black rings (upper one sometimes faint). Thorax with anterior humeri darkened, at least on top. Face whitish-yellow in lower part. Wing with r-m cross-vein well beyond end of Sc. The female abdomen has the apex of tergite 2 particularly wide. Wing length 4.75-7 mm (STUBBS & FALK 2002).

Flowers visited: white umbellifers; *Cardamine pratense*, *Crataegus*, *Euphorbia*, *Geranium pratense*, *G. robertianum*, *Potentilla erecta*, *Prunus spinosa*, *Ranunculus*, *Rubus fruticosus*, *Sanicula*, *Stachys*, *Veronica*.

Distribution: from Fennoscandia south to Iberia; from Ireland eastwards through most of Europe into European parts of Russia and the Caucasus; through Siberia to the Pacific coast; Japan. **New for the Iranian insect fauna.**

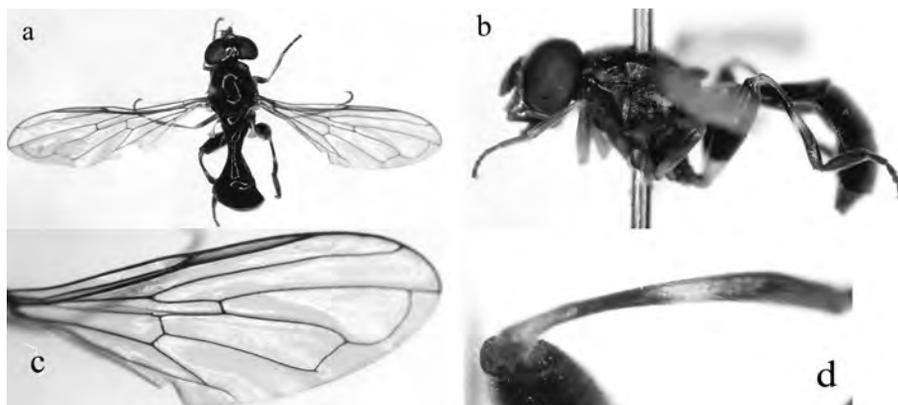


Fig. 3: *Sphegina clunipes*: ♀, (a) dorsal view, (b) lateral view, (c) wing, (d) hind tibia.

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