**Heringia heringi, Platycheirus sticticus and Platycheirus ambiguus** (Diptera: syrphidae) three species newly recorded for Iran flowerfly fauna

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**Abstract:** *Heringia heringi, Platycheirus sticticus* and *Platycheirus ambiguus* are recorded for the first time from Iran flowerfly fauna. Ten specimens were collected from Damavand and Firuzkuh. For faunistic survey of Damavand and Firuzkuh were assigned 12 stations in these region. Diagnosis characters and photos are presented.

**Key words:** Syrphidae, New record, Fauna, Damavand, Firuzkuh, Iran

**Introduction**

The Syrphidae family is one of the largest families of Diptera which known as hoverfly or flowerfly in the world. This family is consists of 3 sub families and 15 tribes and about 6000 species in 198 genera (Sommaggio, 1999; Mengual et al., 2008). The family has nearly worldwide distribution, and is only absent from Antarctica. More than 159 species belong to 48 genera of hoverfly exist in Iran. This high diversity is due to the high number of syrphid species endemic to the eastern and northern parts of Iran. Their size ranges from medium to large. The adults are black and yellow. They fly around and over low-growing vegetation, settle on low-growing vegetation, visit the margins of streams, ponds, and pools to drink in hot weather. Many of them resemble bees, bumble bees, and wasps. In contrast to the homogeneous alimentary habits of adult syrphids, almost all of which feed on pollen or nectar, the females must consume pollen since they need the proteins and amino acids of the pollen for maturation of their eggs. The larvae show a huge spectrum of feeding habits. The feeding modes of syrphidae larvae are mycophagy, phytophagy, entomophages and saprophages. The predatory larvae of many flowerflies play important role in biological control pests of agricultural (Gilbert, 1981). Subfamily Eristalinae have 12 tribes and subfamily Syrphinae 3 tribes. Genus *Heringia* belongs to tribe Pipizini and Genus *Platycheirus* and its species the largest within the subfamily syrphinae, it has two subgenera, *Platycheirus* with 15 species and *Pachysphryia* with one species. During the specimens collected, we found three species which the check list of Iran hover flies was reviewed by Dousti and Hayat (2006) which shown no record of these three species from Iran.

**Material and Methods**

In 2009-2010 we surveyed the syrphid fauna of Damavand and Firuzkuh, East Tehran province, north of Iran. Early 12 stations in Damavand and Firuzkuh were chosen by GIS and topographic maps were set to include: Damavand, Abesard, Rine, Gilavand, Sarbandan-Derakhtebid (mazrae), Chestme, Poloor, Firuzkuh, Shahrabad, Kaboodband, Dashtemorgh and Aabeask-Haraz river. Species mentioned in this article are three stations, Damavand (35°43’N, 52°04’ E), Gilavand (35°40’N, 52°01’E) and Kaboodband (35°46’N, 52°33’E) were collected. Then collecting was done by sweeping net in 6 months, subsequently specimens were killed, the specimens were taken to systematic laboratory of Shahid Beheshti University. The specimens were identified based on valid keys such as Bei-Bienko (1988), Stubbs and Falk (2002), Ball et al. (2002), Van Veen (2004) and Speight (2006). Neither genus *Heringia* nor it species *heringi*, also *Platycheirus sticticus* and *P. ambiguus* have previously been recorded in Iran (Amirimoghadam 2004; Dousti and Hayat 2006; Najafi 2007; Khaghaninia et al., 2010). The identification was confirmed by Anatoli Barkalov of the Siberian Zoological Museum, Novosibirsk, Russia.
Three species newly recorded for Iran

Fig. 1: *Heringia heringi* ♂: (a) Dorsal view, (b) Head, frontal view, (c) Male, lateral view, (d) Wing

Fig. 2: *Platycheirus sticticus* ♀: (a) Abdomen, dorsal view, (b) Female, dorsal view, (c) Head, dorsal view, (d) Head, lateral view, (e) Wing

Fig. 3: *Platycheirus ambiguus* ♀: (a) Female, dorsal view, (b) Head, frontal view, (c) Female, lateral view, (d) Head, lateral view
Results

Genus *Heringia* Zetterstedt, 1843:
The male completely black, male frons not produced, male antennal segment three often longer than deep, male hind trochanters often with spurs.

(1) *Heringia heringi* Zetterstedt, 1843:

**Material examined:** 2 ♂, Damavand, east of Tehran province (35º43' N, 52º04' E), altitude 2968 m a.s.l., vi. 2010.

**Description:** Eyes dark brown with whitish hairs, face black with pale hair, head in profile with frons inflated, antenna black and arista as long as third segment of antenna. Thoracic dorsum black, with yellowish pubescence. Legs black and femurs brownish to yellow in apex. Scutelum covered in long, pale yellow-brown or grey-brown hairs. Posterior surface and lateral margin of abdomen completely black, with yellowish to white hairs. Genitalia seen from below broadly swollen (Speight 2010) (Fig. 1).

**Flowers visited:** *Sinapis alba, Sinapis arvensis, Descurainia Sophia, Cardaria draba* (L), *Trifolium pretense*, *Malus* spp and *Tritichum aestivum* (L).

**Distribution:** The distribution of this species covers forest; deciduous forest, alluvial hardwood and broad-leaved evergreen forest, orchards and suburban gardens Speight (2008). Heretofore, this species was reported from Italy Syrphidae fauna Sommaggio (2010). Groot and Govedio e (2008) reported *H. heringi* in checklist of Slovenia. Species ranging from southern Norway to southern Spain and the Mediterranean (including Crete); from Ireland eastwards through central and southern Eurasia to Greece, Roumania, Turkey and European parts of Russia, and Mongolia (Speight 2010).

**Habitat:** The specimens were collected from grassland around of orchards of cherry, apricot and clover field.

(2) *Platycheirus sticticus* Meigan, 1822:

**Material examined:** 3 ♀, Gilavand, east of Tehran province (35º40' N, 52º01' E), altitude 2793 m a.s.l., 22.iv.2010.

**Description:** Eyes dark brown and bare. Facial knob slightly projecting, face dark and entirely covered with dust spot and with black wide stripe in female. Antenna black but third antennal segment is partly pale beneath, arista bare. Vertex with whitish hairs. Thoracic dorsum black with short yellow hair, front and middle legs yellowish to brown and hind leg black. Scutelum black. Tergites 2, 3 and 4 all are square, tergite 2 with long whitish hair on lateral margin. Tergites 3 and 4 with silver bands. Sternites 1, 2, 3 and 4 yellowish to brown (Speight, 2008) (Fig. 3).

**Flowers visited:** *Astragalus gummifer, Sinapis alba, Gundelia tournefortii, Trifolium pretense, Populus nigra, Medicago sativa*.

**Distribution:** This species normally found in deciduous forest, scrubs margin of woodland, hedgerows and gardens etc., Heretofore, this species was reported from Fennoscandia south to central Spain and from Ireland eastwards through most of Europe into Russia and on to the Pacific coast, including Japan (Speight, 2010).

**Habitat:** The specimens were collected from pastures and woodland around river, alfalfa field.

(3) *Platycheirus ambiguus* Fallen, 1817:

**Material examined:** 5 ♀, Kaboodband south of Alborz mountains (35º46' N, 52º33' E), altitude 2500 m a.s.l., 24.iv.2010, 12.v.2010.

**Description:** Eyes dark brown and bare. Facial knob slightly projecting, face dark and entirely covered with dust spot and with black wide stripe in female. Antenna black but third antennal segment is partly pale beneath, arista bare. Vertex with whitish hairs. Thoracic dorsum black with short yellow hair, front and middle legs yellowish to brown and hind leg black. Scutelum black. Tergites 2, 3 and 4 all are square, tergite 2 with long whitish hair on lateral margin. Tergites 3 and 4 with silver bands. Sternites 1, 2, 3 and 4 yellowish to brown (Speight, 2008) (Fig. 3).

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**Discussion**

Also there is very similar between study areas in these three stations (Damavand, Gilavand and Kaboodband) and other parts of the world that these three species were collected from there (Speight, 2008). The above descriptions are agrees with *Heringia heringi, platycheirus sticticus* and *platycheirus ambiguus* (Speight, 2008).
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