

Short paper

## First record of the genus and species *Pipiza accola* Violovitsh (Diptera: Syrphidae) from Iran

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**Abstract:** A survey on the hover flies (Diptera: Syrphidae) fauna of northern Iran, between 2010 and 2011, led to the discovery of the species *Pipiza accola* Violovitsh, 1985. Both the genus and species are newly recorded from Iran. All the specimens were collected from Gilan and Mazandaran provinces, using Malaise traps. The diagnostic characters of *P. accola* and its geographical distribution is presented.

**Keywords:** northern Iran, hoverfly, new record, *Pipiza accola*

### Introduction

The dipteran family Syrphidae, commonly known as hover flies or flower flies, consists of 6000 species and 200 genera (Thompson & Rotheray, 1998). The syrphid flies are distributed worldwide, with the greatest species diversity in the New World tropics (Masetti *et al.*, 2006).

The genus *Pipiza* Fallén, 1810 comprises more than 40 species, of which 17 species occur in the Palaearctic region, (Peck, 1988), including Europe (12 species) (Vujic *et al.*, 2008). The Russian Far East includes only six species of *Pipiza* (Peck, 1988; Ssymank *et al.*, 1999). The genus *Pipiza* is considered a taxonomically difficult group that requires further detailed studies (Speight, 2007). The *Pipiza* spp. are medium-sized, blackish, with similar wing venation and steeply inclined upper outer cross-vein (Vujic *et al.*, 2008); abdominal tergites entirely black usually

with a pair of orange spots on tergite 2 or rarely a pair of spots on tergites 2-3. Frons extends far forward and antenna located on a conical projection; third antennal segment mostly black, usually angular and rhomboidal (Stubbs and Falk, 1983). The larvae of the genus *Pipiza* are aphidophagous, preying on gall-forming aphids, while the adults prefer habitats near forest edges (Speight, 2007).

Using molecular and morphological data, for the phylogenetic analysis, Cheng *et al.* (2000) found that the phylogenetical relationship between Pipizini and the predatory groups within the family Syrphidae is stronger than Pipizini and saprophagous groups, so the tribe Pipizini was transferred from Milesiinae to Syrphinae based on the larval habits. Later, Stahls *et al.* (2003) revised the whole family Syrphidae based on combined analysis of molecular as well as morphological characters and replaced the tribe Pipizini as the sister-group to the subfamily Syrphinae.

Northern Iran includes the southern Caspian coast and dense forests of Gilan and Mazandaran, provinces that are inhabited by highly diverse fauna of arthropods. This study

Handling Editor: Dr. Mehrdad Parchami Araghi

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Received: 17 August 2012, Accepted: 22 September 2012

is intended to investigate the diversity of the genus *Pipiza* in northern Iran.

### Material and Methods

The specimens were collected from the Caspian Sea provinces of Gilan and Mazandaran (Figure 1), using Malaise traps. After being extracted from the traps, the specimens were prepared according to Brown's method (Brown, 1993); they were dehydrated in 100 % ethanol for five minutes and transferred to hexamethyldisilazane (HMDS) baths for 30 minutes. The air-dried specimens were then mounted and labeled and examined for identification. The morphological terminology follows Vujic *et al.*, (2008). The specimens are deposited at the insect collection of the Department of Entomology, Tarbiat Modares University, Tehran.

### Result

The genus and species of *Pipiza accola* Violovitsh, 1985 is recorded here for the first time from Iran. We collected *P. accola* in April through May in deciduous forests, being largely made up of alder (*Alnus* sp.), ash (*Fraxinus* sp.), oak (*Quercus* sp.) hornbeam (*Carpinus* sp.), elm (*Ulmus* sp.), hackberry (*Prunus padus*) and willows (*Salix* sp.) trees.

The species *P. accola* can be superficially confused with *P. bimaculata* Meigen, 1822, but the presence of a pair of ventral longitudinal black ridges at the apex of hind femora and completely black antenna of *P. bimaculata* confidently separates the species (Vujic *et al.*, 2008).

#### *Pipiza accola* Violovitsh, 1985 (Figure 2)

**Synonyms:** *Pipiza alba* Violovitsh, 1985, *Pipiza magadanica* Violovitsh, 1985

**Material examined:** IRAN: Mazandaran province: Noor, Gaznasara, 36°16'58.08"N, 52°10'55.62"E, 2013m, (1♀), 26.v.2011; Gilan province: Rudsar, Ziaz, 36°52'34.44"N, 50°13'17.4"E, 537m (2♀), 31.v.2010; Rudsar,

Orkom, 36°45'739"N, 50°18'198"E, 1201m, 25.iv.2010, (1♀); leg. A. Nadimi (Figure 1).

**Distribution:** Finland (Haarto & Kerppola, 2007), Spain (Vujic, 2003), Germany (Wolff, 1998), Russia (Mutin, 2002), Siberia (Violovitsh, 1985, 1988), and central Europe (Van Veen, 2004) and Iran.

**Diagnosis:** Third antennal segment reddish orange, as long as segments 1-2 together (Figure 2C); thoracic dorsum black with white hairs (Figure 2B); wing hyaline (Figure 2D); fore tarsus black, ventrally yellow, apex of hind femora without ventral longitudinal black ridges; abdominal tergite 2 with a pair of yellow spots (Figure 2A).

### Discussion

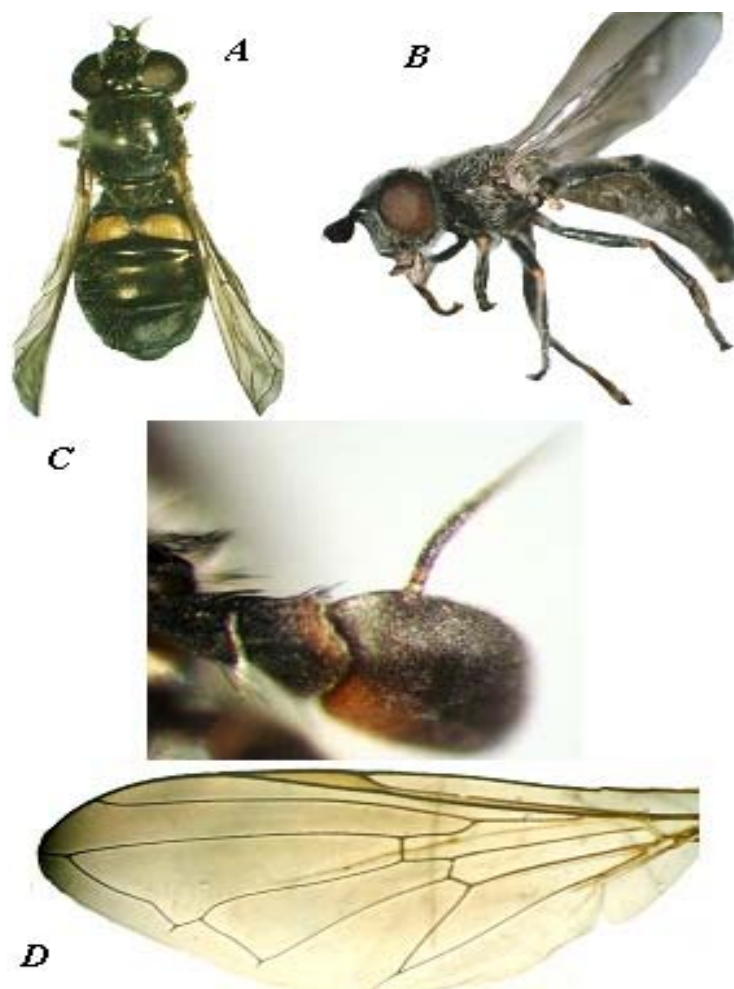
The genus *Pipiza* is one of the most taxonomically difficult genera of hover flies that necessitate a future revision of the genus to better define its status in relation to other syrphid genera. The face coloration of *P. accola* varies among individuals from pale to brown, but its male genitalia is characteristic and strongly differs from other Palaearctic species such as *P. luteitarsis* (Vujic *et al.*, 2008). The sternite 5 of the female is noticeably wider than long (Mutin, 2002). The species *P. accola* prefers mixed or deciduous forest (Wolff, 1998) and its flight period begins from April until mid May (Mutin, 2002; Wnuk, 1972).

### Acknowledgements

We would like to cordially thank the three anonymous reviewers and Dr. Mehrdad Parchami-Araghi for their valuable comments and suggestions on the earlier version of this paper.



**Figure 1** Map of the sampling provinces in north of Iran, where the specimens of *Pipiza accola* have been collected.



**Figure 2** *Pipiza accola*, female: A) habitus: dorsal view, B) habitus: lateral view, C) antenna, D) wing.

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## اولین گزارش جنس و گونه *Pipiza accola* Violovitsh (Diptera: Syrphidae) از ایران

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دریافت: ۲۷ مرداد ۱۳۹۱، پذیرش: ۱ مهر ۱۳۹۱

**چکیده:** مطالعه فون مگس‌های خانواده Syrphidae در شمال ایران در طی سال‌های ۱۳۸۹-۱۳۹۰ منجر به شناسایی گونه *Pipiza accola* Violovitsh, 1985 گردید. جنس و گونه برای اولین بار از ایران گزارش می‌شوند. همه نمونه‌ها با استفاده از تله مالیز از استان‌های گیلان و مازندران جمع‌آوری شدند. مشخصات افتراقی و پراکنش جغرافیایی گونه *P. accola* در ایران ارائه شده است.

**واژگان کلیدی:** شمال ایران، Syrphidae، اولین گزارش، *Pipiza*.