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Short communication

Two new records of aphid hyperparasitoids (Hym.: Figitidae) from Iran

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چکیده

همراه با جمع‌آوری زنبورهای پارازیتویید شته‌ها در ایران طی سال‌های ۱۳۸۵-۱۳۸۰، تعداد چهار گونه زنبور هیپرپارازیتویید نیز جمع‌آوری و شناسایی شد که دو گونه‌ی *Alloxysta fulviceps* (Curtis) و *A. victrix* (Westwood) برای فون ایران جدید می‌باشند. گونه‌ی *A. fulviceps* هیپرپارازیتویید زنبور *Aphidius matricariae* Haliday روی شته‌ی *Aphis fabae* Scopoli و گونه‌ی *A. victrix* هیپرپارازیتویید زنبور *Lysiphlebus fabarum* (Marshall) روی شته‌ی *Aphis gossypii* Glover بودند.

Aphids are important pests and vectors of plant diseases on cultivated crops, ornamental, forest and fruit trees in various parts of Iran (Rezwani, 2004). The species of subfamily Aphidiinae (Hym.: Braconidae) are solitary obligatory endoparasitoids of aphids (Starý, 1970) of which many species are candidates as potential biocontrol agents (Hagvar & Hofsvang, 1991; Starý, 2006). Aphid parasitoids have a critical impact on reducing the population of pest aphids (Starý, 2006). Many species, particularly the species of Charipinae (Hym.: Figitidae), are hyperparaitoids attacking the aphid primary parasitoids (Carver, 1992; Sullivan & Völkl, 1998). The genus *Alloxysta* Förster is the largest taxon within this subfamily having a world distribution (Andrews, 1978). Most species have been described and recorded from Europe (Evenhuis, 1976, 1978) and North America (Andrews, 1978; Menke & Evenhuis, 1991), and very few attempts made in other parts of the world including Africa (Andrews, 1978), Asutralia (Carver, 1992) and South America (Pujade-Villar *et al*., 2002). Nine *Alloxysta* species are known from Asia, three from Japan (Andrews, 1978) and three from Eastern Russia (Paretas-Martínez & Pujade-Villar, 2005).

Four aphid hayperparasitoid species have previously been reported from Iran. These include *Phaenoglyphis villosa* (Hartig) (Pujade-Villar *et al*., 2007), *Alloxysta brevis* (Thomson) (reported as *Alloxysta mullensis* (Cameron)) on *Lysiphlebus fabarum* (Marshall) (Lotfalizadeh, 2002), *Alloxysta citripes* (Thomson) on *Trioxys pallidus* (Haliday) (Rakhshani *et al*., 2001) and *Alloxysta fuscicornis* (Hartig) on *Diaeretiella rapae* (McIntosh) (Lotfalizadeh & Van Veen, 2004).

In this survey, samplings were carried out at different provinces of Iran to collect aphid parasitoids and hyperparasitoids in a time period from May 2001 to March 2006. Parasitized aphids were transferred to the laboratory and kept at room temperature (25 ± 5 °C) until the parasitoids and hyperparasitoids emerged from the body of mummy aphids. The hyperparasitoid species were identified by the last author. The specimens were deposited in the collection of the Department of Entomology, Tarbiat Modares University, Tehran, Iran; and the collection of Barcelona University, Spain. In total, four hyperparasitoid species (Hym.: Figitidae, Charipinae) were collected and identified: *Ph. villosa*, *A. brevis*, *Alloxysta victrix* (Westwood) and *A. fulviceps* (Curtis), of which the latter two species are newly recorded from Iran.

***Alloxysta victrix* (Westwood, 1833)**

Material examined – Gilan: Rasht, 25.v.2005, 11 ♀♀, 5 ♂♂, ex: *L. fabarum* (Hym.: Braconidae) on *Aphis gossypii* Glover (Hem.: Aphididae), Leg. E. Rakhshani.

Female – Head as wide as long, glabrous, except frons covered with short semi-erect setae; antennae 13-segmented, filliform, segments 1-4 smooth, segment 5 with several longitudinal ridges, segments 6-13 completely longitudinally ridged, length of segment 3 at least 6 times as its width; pronotum densely pubescent on lower lateral portions, glabrous on narrow band running from tegulae to behind head; mesoscutum distinctly convex, scattered setae laterally; scutellum sharply notched, not expanded posteriorly, mesopleuron flat, triangle, moderate size, not reaching posterior margin; forewings longer than body length, covered with hairs, lateral hairs longer than surface hairs, radial cell closed, large, r-1 straight, r-2 very slightly arcuate (Andrews, 1978).

This species has a particularly broad host range. It has been recorded from aphids representing both Aphidinae and Macrosiphinae, and from both Aphidiinae primary parasitoids and Aphelinidae (Grasswitz & Reese, 1998; Andrews, 1978).

***Alloxysta fulviceps* (Curtis, 1838)**

Material examined – Tehran: Aghasht, 6.xi.2004, 3 ♀♀, 1 ♂, ex: *Aphidius matricariae* Haliday (Hym.: Braconidae) on *Aphis fabae* Scopoli (Hem.: Aphididae), Leg. E. Rakhshani.

Female – Head as wide as long, glabrous with few semi-erect short setae at frons; antennae 13-segmented, filliform, scape a little thicker and longer than pedicel, third segment a little longer than pedicel and other segments, other segments equal in size; pronotum

moderately pubsecent, mostly at anterior part, mesoscutum convex, with scattered setae dorso-laterally, scutellum rounded posteriorly, sparsly setose dorsally, mesopleuron flat, triangle reaching the posterior margin, sparsely setose at lower half; forewings longer than body length with abundant hairs, lateral hairs longer than surface hairs, radial cell open, medium size (Andrews, 1978).

This species is distributed in Western Europe (Fergusson, 1986; O'Connor & Nash, 1997). This is the first record of *A. fulviceps* from Asia. No host aphid was recorded but various host aphid-parasitoid associations were recorded for this species in England (West *et al*., 1998).

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