Aphid parasitoids from Malta (Hymenoptera, Braconidae, Aphidiinae)

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ABSTRACT. Six aphid parasitoids are listed including three species which are recorded for the first time from the Maltese islands, namely *Aphidius funebris*, *Ephedrus persicae* and *Lysiphlebus confusus*. *Aphidius colemani*, a species which was introduced for the control of greenhouse aphids, was also found for the first time in the open.

KEYWORDS. Associations, *Aphidius colemani*, Mediterranean.

INTRODUCTION

Aphid parasitoids (Hymenoptera, Braconidae, Aphidiinae) are known to be research targets useful in several respects. In the last three decades, study of their taxonomy has been satisfactory at Mediterranean level (e.g. Kavallieratos *et al*., 2004; Laamari *et al*., 2011; Starý, 1976; Uysal *et al*., 2004). Also, their aphid associations can be relatively easy to determine as they can be derived from plant-aphid-associations sampled in the field and subsequently reared in the laboratory. On these grounds, too, respective faunal relationships and biodiversity studies can be derived and determined. On-going research in Malta (e.g. Mifsud & Starý, 2009) is providing new data on aphid parasitoids previously unrecorded from Malta and new records are presented in this short contribution.

Parasitoids were reared from live aphid samples generally consisting of between 20-30 individuals. Material was preserved in 75% alcohol and is deposited in the private collections of the authors.

RESULTS

Aphidius colemani Viereck, 1912

Material examined. MALTA: Birzebbuga, 7 specimens emerged on 12.v.2011, from *Rhopalosiphum padi* on *Triticum* sp., leg. D. Mifsud.

Notes. This species was introduced in the Maltese islands to contol greenhouse aphids (Mifsud, 1997).

Aphidius funebris Mackauer, 1961

Material examined. MALTA: St. Thomas Bay, 4 specimens emerged on 5.ii.2011 from *Uroleucon sonchi* on *Sonchus* sp., leg. D. Mifsud.

Notes. This species represents a new record for the Maltese islands.

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Aphidius matricariae Haliday, 1834

Material examined. MALTA: Valletta, 1 ♀, emerged on 22.iv.2011 from *Myzus persicae* on *Capparis* sp., leg. D. Mifsud.

Notes. This species was previously reported from the Maltese islands by Farrugia (1995).

Diaeretiella rapae (M´Intosh, 1855)

Material examined. MALTA: St. Thomas Bay, 130 specimens emerged between 11-15.i.2011 from *Lipaphis erysimi* on *Diplotaxis* sp., leg. D. Mifsud; Zejtun, 97 specimens emerged on 20.i.2011 from *Lipaphis* sp. on *Diplotaxis* sp., leg. D. Mifsud; Zejtun, 60 specimens emerged on 20.i.2011 from *Melanaphis donacis* on *Arundo donax*, leg. D. Mifsud.

Notes. This species was previously reported from the Maltese islands by Farrugia (1995).

Ephedrus persicae Froggatt, 1904

Material examined. MALTA: Zejtun, 3 specimens emerged on 20.i.2011 from *Melanaphis donacis* on *Arundo donax*, leg. D. Mifsud.

Notes. This species represents a new record for the Maltese islands.

Lysiphlebus confusus Tremblay and Eady, 1978

Material examined. MALTA: Dingli, 2 ♀♀, emerged on 2.iv.2011from *Dysaphis pyri* on *Pyrus communis* (local variety – Bambinella), leg. D. Mifsud.

Notes. This species represents a new record for the Maltese islands.

DISCUSSION

The listed aphid parasitoids and their associations in Malta are interesting. *Aphidius funebris* is a member of a typical parasitoid guild on *Uroleucon* spp., broadly distributed in the western Palaearctic. *Aphidius matricariae* and *Diaeretiella rapae* are both almost cosmopolitan in distribution, believed to be of West Palaearctic origin. The parasitoid guild represented by *Ephedrus persicae* on *Melanaphis donacis* is of interest as this might be specific to the Maltese islands. *E. persicae* is a cosmopolitan species, believed to be of West Palearctic origin (Kavallieratos *et al*., 2001; Mitrovski Bogdanović *et al*., 2009). Usually, the parasitoid complex in the Mediterranean is represented prevailingly by *Aphidius transcaspicus* Telenga (Kavallieratos *et al*., 2001), and the association also represents a potentially valuable refugium of this parasitoid as, apart from *Melanaphis* spp., it also parasitises *Hyalopterus* spp. pests both on *Phragmite*s reeds as well as on peach, apricot and plum.

The detection of *Aphidius colemani* in the open is of special interest. On the one hand, it is possible that it occurs in Malta though previously unidentified as it is naturally widely distributed over the whole East Mediterranean and North Africa (Kavallieratros *et al*., 2001). On the other hand, the species was introduced purposely in the Maltese islands for the control of greenhouse aphids and proved effective. If this introduction led to the spread of *A. colemani* in the open, this could

contribute to aphid control in the field as well. The out-door dispersal and parasitization of aphid hosts in the field had been predicted by Mifsud & Starý (2009).

These new results on parasitoid-aphid-plant associations contribute to local biodiversity studies and island peculiarities centering mainly on faunal compositions and ecosystem relationships in Malta.

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