New data on aphids (Hemiptera, Aphidoidea) of Algeria

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Little is known about the aphid fauna of Algeria, with only 120 species of aphids recorded as present to date. This study, involving a literature survey and 6 years of trapping and host plant prospecting, extends the number of known Algerian aphid species to 150. Ninety-three of these species were recorded for the first time in this country, and 45 were recorded for the first time in the Maghreb region of North Africa. The aphid fauna of Algeria includes a large number of cosmopolitan species (42.1%) and no endemic species. It is very similar to the European aphid fauna and very different from the Sub-Saharan aphid fauna, despite the geographical proximity of this region. Most (68.3%) of the species identified are crop pests. This composition biased towards species with a broad geographical distribution that generally act as crop pests probably reflects current lack of knowledge about this fauna. Future studies should lead to an increase in the number of species identified as present in this country, probably resulting in a change in the general characteristics of this fauna.

Parasitoids of Leptoglossus occidentalis Heidemann recovered in Italy

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Leptoglossus occidentalis Heidemann, a conifer seed bug of Western North America origin, is a common and important pest in conifer seed orchards of lodgepole pine
(Pinus contorta var. latifolia Engelmann), western white pine (Pinus monticola Dougl. ex D. Don), Douglas fir [Pseudotsuga menziesii (Mirbel) Franco], reducing seed crops by feeding seeds within the cones (Koerber, 1963; Bates et al., 2000).

In 1999 this invasive alien pest was first recorded in Northern Italy (Lombardy and Veneto regions) (Villa et al., 2001), from where it quickly spread to many mountain and coastal pine woods along the Italian peninsula and in its main islands (Sicily and Sardinia) (Bernardinelli & Zandigiacomo, 2002; Roversi, 2006; Maltese et al., 2009; Santini, 2010).

Since the introduction of L. occidentalis into Italy, the production of pine nuts of Pinus pinea L. (The Italian Stone Pine) has decreased rapidly and in 2009 cone harvests declined by as much as 95% (Roversi, 2009).

As the Italian Stone Pine is cultivated in protected areas in where the use of chemicals are not permitted for pest control, the use of a biological control approach again the invasive pest is largely recommended. Therefore, as first step in this approach was the investigation on the autochthonous parasitoid complex of L. occidentalis was performed.

Until now studies permitted to record parasitoids of adults and nymphs and egg-parasitoids. At the first group belongs some Diptera Tachinidae (Bernardinelli, 2003; Maltese et al., 2011), and more recently, Santini (2010) obtained Ectophasia crassipennis F. (Diptera: Tachinidae), a common parasitoid of Nezara viridula (L.) (Heteroptera: Pentatomidae), from an overwintered adult. These data, even if scanty, are interesting because a common parasitoid of L. occidentalis adults in North America, Trichopoda pennipes (Diptera: Tachinidae), was accidentally introduced and currently well established in Italy, so this species may be can play potentially a key role in the natural control of the pest (Colazza et al., 1996).

Recent surveys carried out in Tuscany on egg-parasitoids allowed to record three Hymenoptera species: Anastatus bifasciatus (Geoffroy) (Eupelmidae), Ooencyrtus pityocampae (Mercet) (Encyrtidae) and Bariscatus (= Tetrasticus) servadeii (Dom.) (Eulophidae). A. bifasciatus parasitizing L. occidentalis was first obtained in Northern Italy in 2003 (Bernardinelli, 2003, Camponogara et al., 2003) and more recently in Tuscany (Niccoli et al., 2009; Bracalini et al. 2011). However, it must be taken into account that B. servadeii is a polyphagous species which can be hyperparasitoid of other species, also of O. pityocampae, therefore including this species in the list of L. occidentalis natural enemies can be questionable. In Sicily, no egg-parasitoids of L. occidentalis were found so far. Nevertheless in 2009, two eggs parasitized by Trissolcus sp. (Hymenoptera: Platygastridae) were recorded, which were able to reach the adulthood but they were not able to emerge from the eggs, probably due to the fact that the host was accidentally (Maltese et al., 2011). L. occidentalis egg-parasitoids recorded until now in Italy are all autochthonous and generalist, and their low parasitization level is due to the lack of adaptability.