P H O R O N : Foro S.E.A. sobre artrópodos exóticos invasores

First Spanish record of *Aphis illinoisensis* Shimer (Hemiptera: Aphididae), the grapevine aphid*

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Abstract: *Aphis illinoisensis*, native to North America, is now widely distributed in Central and South America and represents one of the most recent aphid invaders from the New World to the Mediterranean Region. The first Mediterranean record of this species was from southern Turkey in 2002 and thereafter it has been recorded from Crete (Greece), Cyprus, Israel, Tunisia, Algeria, Montenegro, Libya, Malta and now from Spain.
Key words: Hemiptera, Aphididae, *Aphis illinoisensis*, *Vitis vinifera*, alien species, Spain.

Primera cita de España del pulgón de la vid, *Aphis illinoisensis* Shimer (Hemiptera: Aphididae)
Resumen: El pulgón *Aphis illinoisensis*, nativo de Norteamérica, actualmente está distribuido por América Central y Sudamérica, y es una de las últimas especies llegadas a la Región Mediterránea procedentes del Nuevo Mundo. La primera cita mediterránea de esta especie procede de Turquía en 2002 y desde entonces ha sido citado de Creta (Grecia), Chipre, Israel, Túnez, Argelia, Montenegro, Libia, Malta y ahora de España.
Palabras clave: Hemiptera, Aphididae, *Aphis illinoisensis*, *Vitis vinifera*, especies invasoras, España.

A photograph of a colony of aphids on *Vitis vinifera* located in a kitchen garden in the city of Seville (Spain) (fig. 1) taken on 7th August, 2011 and posted on the "Biodiversidad Virtual" portal (http://www biodiver sidadvirtual.org/) enabled the Nearctic species *Aphis illinoisensis* Shimer, 1866 to be detected for the first time in Spain. Its presence was confirmed in a study of specimens collected on the same host and in the same place with several apterae and alatae attended by ants of the species *Linepithema humile* Mayr, 1868 on 1 September, 2011 [37º 24' 52.20'' N, 5º 57' 44.67''W]. The sample of aphid (SE-37) is deposited in the aphid collection of the University of León, Spain and the sample of associated ants in the Collection of the Universidad Autónoma de Barcelona, Spain (Dr. Xavier Espadaler). This finding is yet another example of how social networks play an important role in our knowledge of biodiversity and the detection and/or monitoring of invasive or endangered species (Pérez Hidalgo *et al*., 2009; Silverton, 2010; Pérez Hidalgo *et al*., 2011).

The apterae of *Aphis illinoisensis* are reddish brown (fig. 1C) with curved towards out black siphunculi and cauda deep brown (figs. 1C; 2A), antennal segments III, IV and V darker at apex (fig. 2C), hind femur darker than others and hind tibiae entirely black (fig. 2A). The alatae are similar to apterae (fig. 2B), with 5 to 10 secondary sensoria in antennal segment III and all antennal segments equally pigmented, and pterostigma dark (fig. 2D).

The grapevine aphid is monoecious holocyclic in Virginia, USA, however, it is likely to be anholocyclic in warmer climates and glasshouses (Blackman & Eastop, 2000; Blackman & Eastop, 2006). In the New World, the species is considered to be pest of grape vines but so far records from the Palaearctic territories are citing this aphid as a minor pest (e.g. Barjadze & Ben-Dov, 2011). The parasitoids associated with this aphid in the Mediterranean Region were reviewed by Havelka *et al*. (2011), and it is a vector of the watermelon mosaic virus but there is no evidence of transmission of grape vine viruses by this aphid (Webb *et al*., 1994; Kuniyuki *et al*., 1995). The colonies observed in Seville (Spain) were treated with water with detergent by the farmer and at this moment is impossible determine if the aphid can develop into a major pest of grapevines.

Since its accidental introduction in Turkey in 2002 (Remaudière *et al*., 2003) this species has been recorded throughout the Mediterranean basin (fig. 3): Greece (Tsitsipis *et al*., 2005), Israel (Quirós *et al*., 2009; Barjadze & Ben-Dov, 2011), Tunisia (Kamel-Ben Halima & Mdellel, 2010), Algeria (Laamari & Coeur d'acier, 2010), Montenegro (Petrović-Obradović *et al*., 2010), Libya (Havelka *et al*., 2011) and Malta (Mifsud & Pérez Hidalgo, 2011). Its route of entry into Europe is probably linked to when the host plant was imported, as is the case of many other species introduced into Europe (Coeur d'acier *et al*. 2010) but now probably it is in natural expansion through the winged alatae in both closer and long distances (Havelka *et al*., 2011).

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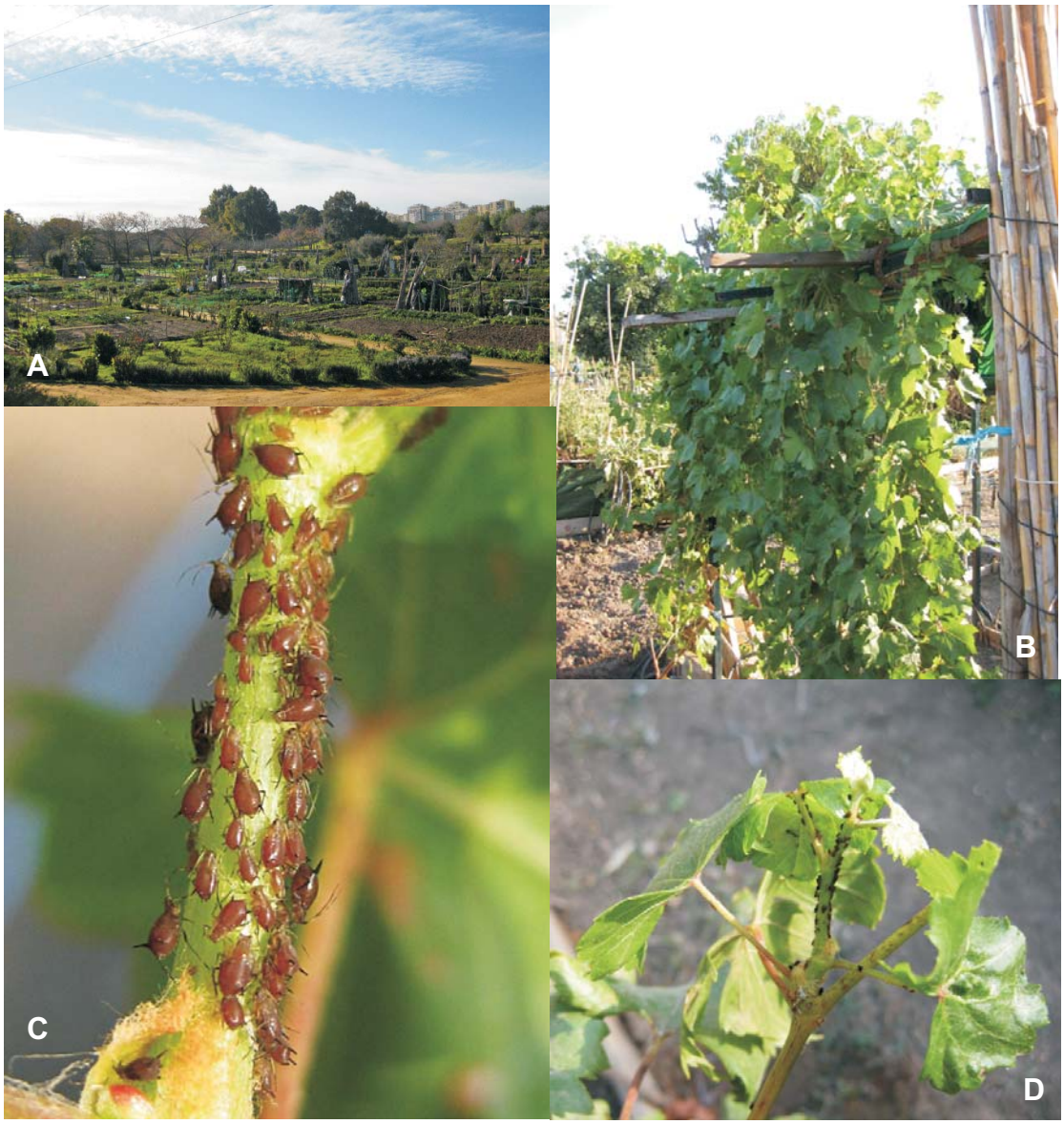

Fig. 1. Kitchen garden in the city of Sevilla (**A**) where the aphid was recorded, aspect of the host plant, *Vitis vinifera* (**B**), and colony of *Aphis illinoisensis* (**C**, **D**).

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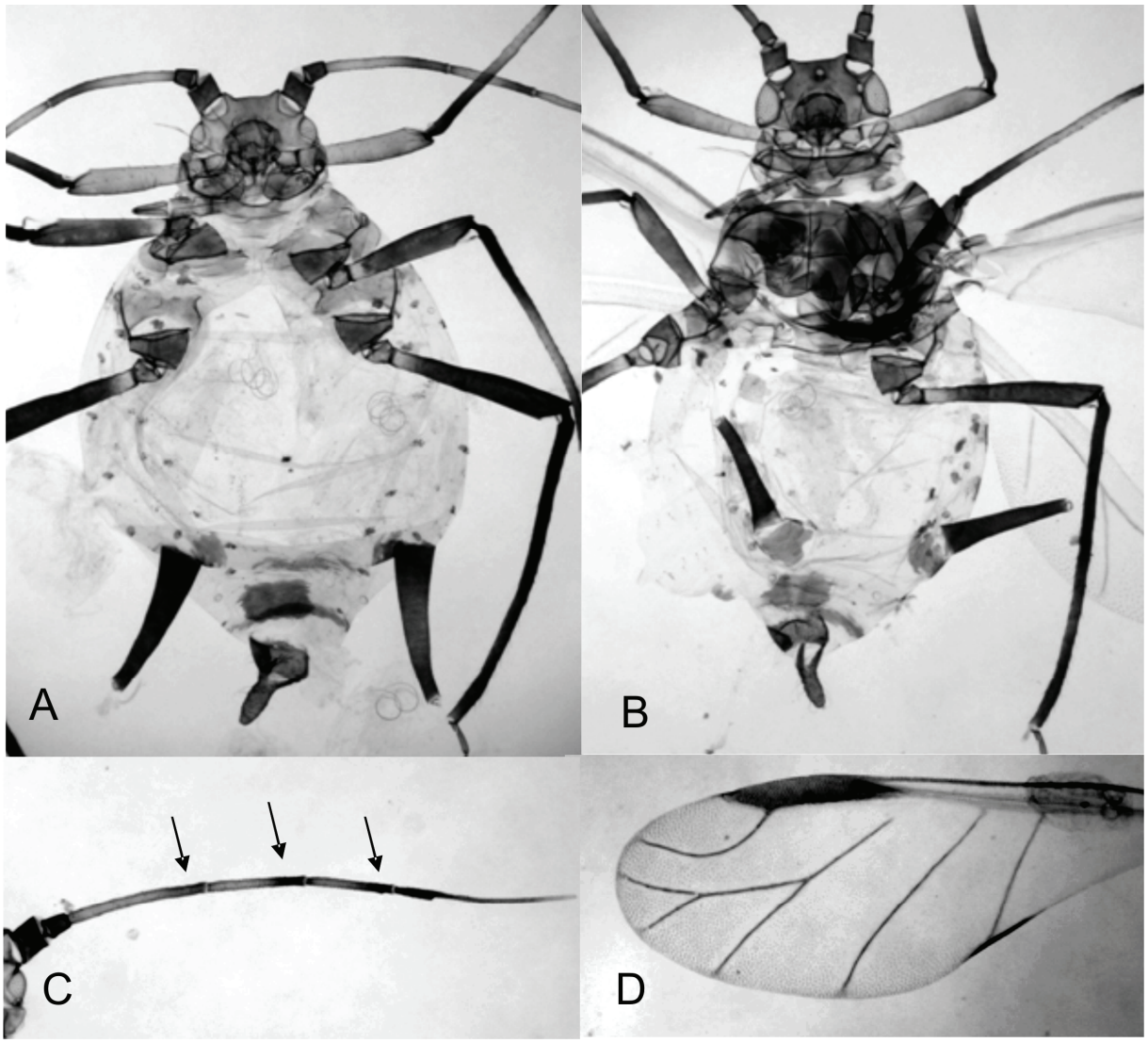

Fig. 2. *Aphis illinoisensis*. Apterous: habitus (**A**) and antenna (**C**) [the arrows indicate the zones pigmented in antennal segments III, IV and V] and Alate: habitus (**B**) and fore wing (**D**).

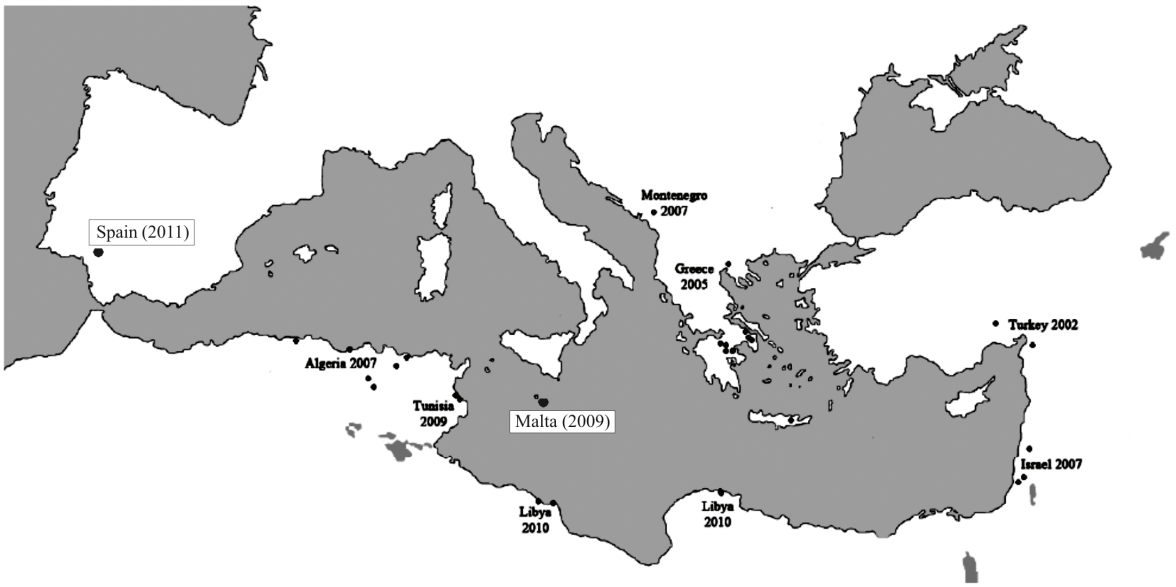

Fig. 3. Present distribution of the grapevine aphid *Aphis illinoisensis* in the Mediterranean and nearby areas [adapted of Figure 1 from Havelka *et al.* (2011) with information for Malta and Spain].