

Scientific note

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First record of the invasive grapevine aphid *Aphis illinoisensis* Shimer, 1866 (Hemiptera: Aphididae) in mainland Italy

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Abstract. Apterous and winged viviparous females of the Nearctic *Aphis illinoisensis* Shimer, 1866 have been recorded for the first time in mainland Italy (Rome) on branches of *Vitis labrusca* L. in 2021, thanks to photos published in a Facebook garden group.

Key words. Invasive species, citizen science, grapevine pest, new record, Vitaceae.

Garden and insect groups on Facebook are typically dedicated to questions about plant health and pest problems, but sometimes they can result in being a source of information about exotic or invasive species detection and expansion (Šeat 2015, Martinović et al. 2019, Vujić et al. 2021). In our case, a photograph of aphids on fox grape *Vitis labrusca* L. taken on 17th September 2021 in a private garden in the urban area of Colli Aniene (Rome, Italy) showed the first record of the Nearctic species *Aphis illinoisensis* Shimer, 1866 (Hemiptera: Aphididae) in mainland Italy.

The colony, composed by both apterous and winged females and their nymphs, was not attended by ants (Fig. 1). Apterous females are characterized by a shiny dark reddish brown colour, wholly black hind tibiae and dark, long and divergent siphunculi. Winged females are similar, and nymphs typically present a lighter reddish-brown colouration with black siphunculi (Blackman & Eastop, 2021). The identification was confirmed by aphidologist Nicolás Pérez Hidalgo (Departamento de Artrópodos, Museo de Ciencias Naturales de Barcelona, Spain).

Unfortunately, specimens could not be collected nor more and detailed photos be taken, since the colony has been immediately fumigated after the identification and up to date no other winged female colonized the areas. Contact with the author of the photograph has been kept open in order to await new developments.

The invasive American grapevine aphid is native to North America (Blackman & Eastop, 2021), but it is also widespread in Central and South America (Ramírez Guevara & Zuluaga 1995, Ortego et al. 2004, Trejo-Loyo et al. 2004, Etienne 2005, Zamora Mejías et al. 2010), where it presents a dioecious holocycle, host-alternating

between *Viburnum prunifolium* L. (Adoxaceae) and Vitaceae plants (Blackman & Eastop 2021). In 2002 *A. illinoisensis* was first recorded in the Palearctic, more specifically in Turkey (Remaudière et al. 2003). Since then, the species has been reported throughout the Mediterranean Basin and Middle East, i.e., Crete, Greece (Tsitsipis et al. 2005), Cyprus (Kocadal & Ulusoy 2006), Spain (Pérez Hidalgo et al. 2011), Israel (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), Malta (Mifsud & Pérez Hidalgo 2011), Egypt (El-Gantiry et al. 2012), Saudi Arabia (Hussain et al. 2015) and Iran (Heidarnia & Derakhshan 2018). In Italy, this species was documented from the island of Sicily, in the province of Catania (Cocuzza & Barbagallo 2011). More recently, it has been recorded even in Central Europe: Slovenia (Seljak 2021) and France (Mouttet & Bálmes 2021). On the Eurasian continent *A. illinoisensis* seems to develop anholocycles on *Vitis* plants and no sexual morphs have been recorded (Blackman & Eastop 2021). Its expansion appears to be a product of the movement of winged alatae (Havelka et al. 2011).

The grapevine aphid is considered invasive because of the potential damage caused to the wine and grape production. It has been recorded as a vine pest that can decrease the developing of young shoots, leaves and fruits and produce leaf necrotic spots (McGrew & Still 1979, Cocuzza & Barbagallo, 2011), but its impact in Europe does not appear to be as important as the one produced by the grape phylloxera *Daktulosphaira vitifoliae* (Fitch, 1855) (Hemiptera: Phylloxeridae) (Kamel-Ben & Mdellel 2010, Havelka et al. 2011). For the moment, because



Fig. 1. Colony of *Aphis illinoisensis* from Rome (Italy) with winged and apterous female morphs on *Vitis labrusca*. The photo was taken by the Italian citizen Sara Bonanno in her garden in the neighbourhood of Colli Aniene and posted in a Facebook garden group about plant pests.

of its occasional records, *A. illinoisensis* can be considered a minor pest of vines in Italy.

Once again, citizen science allows specialists to gain more information about the real distribution of exotic and invasive species.

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