MYZOCALLIS (LINEOMYZOCALLIS) WALSHII, AN INVASIVE APHID ON *QUERCUS RUBRA,* NEW TO SLOVENIA

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Abstract - The aphid *Myzocallis (Lineomyzocallis) walshii* Monell, 1897 (Sternorrhyncha, Aphididae) has been recorded for the first time in the Slovenian aphidofauna. It was found on the leaves of *Quercus rubra* L. in August 2010 in a private garden situated in the village Rodica.

KEY WORDS: Sternorrhyncha, Aphididae, aphids, fauna, Slovenia.

Izvleček - *MYZOCALLIS (LINEOMYZOCALLIS) WALSHII,* INVAZIVNA VRSTA LISTNE UŠI NA RDEČEM HRASTU *(QUERCUS RUBRA),* NOVA NAJDBA V SLOVENIJI

Prava listna us *Myzocallis (Lineomyzocallis) walshii* Monell, 1897 (Sternorrhyncha: Aphididae) je prvic najdena v afidofavni Slovenije. Vrsto smo ugotovili na rdecem hrastu - *Quercus rubra* L., avgusta 2010, na privatnem vrtu na Rodici.

KLJUČNE BESEDE: Sternorrhyncha, Aphididae, prave listne uši, favna, Slovenija.

Introduction

Global trade presents the main risk to introduction and spreading of invasive insect species. An attack of aphids is hard to discover on time since their presence is usually determined as a result of damaged plants while the aphids had already spread locally. At longer distances they are spread in the development stage of egg, pupa or imago via the attacked host plants.

The aphid *Myzocallis (Lineomyzocallis) walshii* (Monell) occurs naturally in North America where it inhabits *Quercus rubra, Q. agrifolia, Q. alba, Q. bicolor, Q. imbricaria, Q. palustris* and Q. *velutina* (Blackmann and Eastop, 1994). It is a monoecious species with holocyclic development. In Europe, it was detected for the first time on *Q. rubra* in France in 1988 (Remaudiere, 1989). Subsequently, the species was also recorded in Switzerland (Remaudière and Quednau, 1992), Spain (Mier Durante and Nieto Nafrfa, 1994), Italy (Patti and Lozzia, 1994), Belgium (Nieto Nafrfa *et al.,* 1999), Germany (Thieme and Eggers-Schumacher, 2003), Czech Republic (Havelka *et al.,* 2005), Andorra (Pons *et al.,* 2006), Poland (Osiadacz and Wieczorek, 2006), Hungary (Ripka, 2008), Portugal (Pérez Hidalgo *et al.,* 2009) and

Serbia (Petrovic-Obradovic *et al.,* 2010) only on *Q. rubra* which seems to present its main host plant.

Recently, it has been captured on the red oak *(Quercus rubra* L.) from a single location in Slovenia. The colonies of aphids were producing large quantities of honeydew which is a substrate for the growth of sooty mould fungi causing unsightly appearance of plant.

Description - based on Blackmann and Eastop, 1994

Female alate viviparae, main body bright yellow, distal ends of antennal segments and costal margin of forewing darkly pigmented. Thorax with black, broad bands running down sides. Fore tibiae black. Body length (excluding cauda) 1.6-2.0 mm. The Spanish specimens of the species arrive to 2.13 mm of body length (Nieto Nafna and Mier Durante, 1998). Nymphs very pale yellow with variably developed dark dorsal sclerites.

Fig. 1: *Myzocallis (Lineomyzocallis) walshii,* adult.

Fig. 2: *Myzocallis (Lineomyzocallis) walshii,* nymphs on the underside of a leaf.

Fig. 3: Honeydew and moulds soon afterwards on the upper surfaces of the contaminated red oak leaves *(Quercus rubra* L.) in the village Rodica in 2010, Slovenia.

Fig. 4: Predator of *Myzocallis (Lineomyzocallis) walshii.*

Fig. 5: Parasited *Myzocallis* (*Lineomyzocallis*) *walshii*.

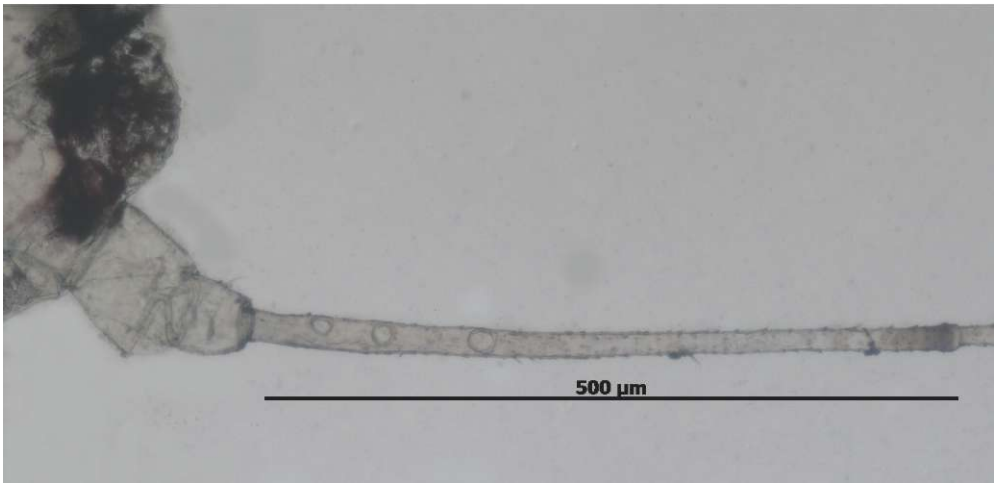
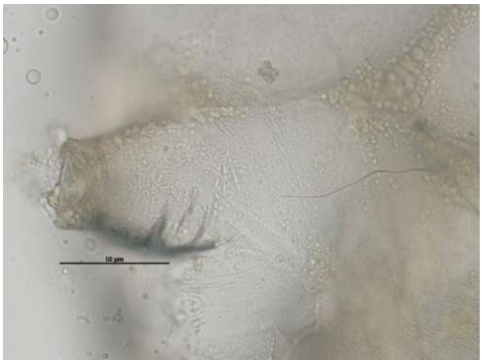
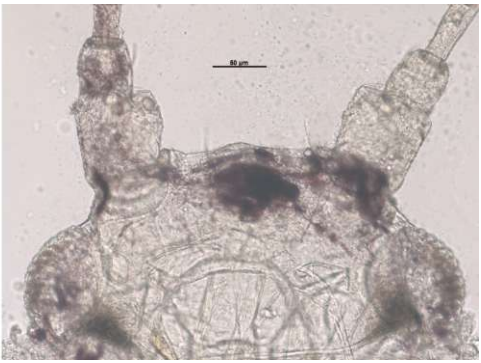


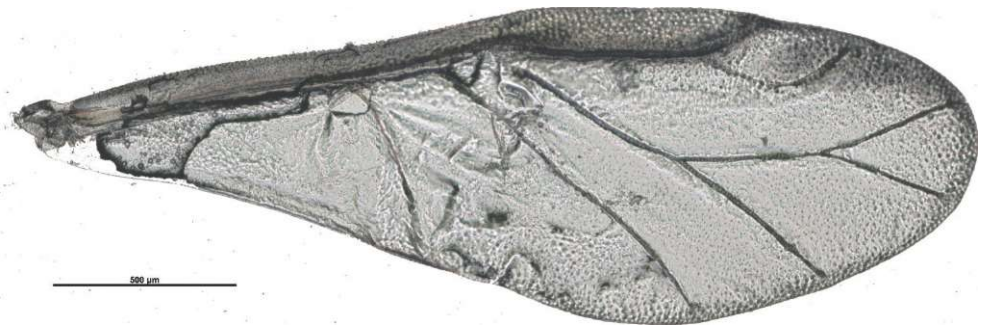
Fig. 6 A: *M. walshii* (Monell): Second antennal segment is pale and there are 2-4 secondary rhinaria on the third antennal segment.



6 B: *M. walshii* (Monell): Lateral siphunculus (cornicles) are small and pale.



6 C: *M. walshii* (Monell): Median frontal tubercle is poorly developed.



6 D: Forewing of the aphid *M.walshii.* Figs.: 1-6 Photo S. Modic.

The invasive species *Myzocallis (Lineomyzocallis) walshii* (Monell) can be distinguished from the European species *Myzocallys (Agrioaphis) castanicola* Baker, 1917, also present in Slovenia, by the morphological characters illustrated on **Figs. 6 A, 6 B, 6 C, 6 D.**

Discussion

Our finding, together with the previously reported presence of the aphid in Europe, indicates that the species *Myzocallis (Lineomyzocallis) walshii* was probably introduced with its main host plant. The red oak, *Quercus rubra,* is planted as an ornamental tree in the urban environment and in a few forest plantations in Slovenia (Martincic *et.al.,* 2007). Other North American species of *Quercus* spp. are not common.

During our observations on infested tree we found the predatory bug *Deraeocoris lutescens* Schilling (Heteroptera: Miridae), which seems to represent a local native predator species. It is a polyphagous predator widely distributed in Europe and commonly found on oak, hazel, pear and apple trees (Ehanno, 1987), where it feeds on aphids, small caterpillars, mite and insect eggs (Lamine *et al.,* 2005). Other predators and mummified aphids *M. walshii* (Figs. 4, 5) killed by parasitoids were also observed and will be subject of further observations.

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