

*Short communication*

## FIRST RECORD OF INVASIVE SPECIES *HARMONIA AXYRIDIS* (PALLAS, 1773) (COLEOPTERA: COCCINELLIDAE) IN BOSNIA AND HERZEGOVINA

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The harlequin ladybird *Harmonia axyridis* (Pallas, 1773) is an invasive species native to east and central Asia (BROWN *et al.*, 2008). It was deliberately introduced as a biological control agent of aphids and coccids in Europe, North America, South America and Africa (KOCH *et al.*, 2006). The first known record of this species in natural environments in Europe is from France in 1991. BROWN *et al.* (2008) reported that *H. axyridis* is established in France, Germany, Belgium, the Netherlands, Spain, Switzerland, Luxembourg, the United Kingdom, Italy, the Czech Republic, Austria, Denmark and Liechtenstein. The presence of *H. axyridis* in the wild is also reported from Poland (PRZEVOŹNY *et al.*, 2007), Hungary (MERKL, 2008), Serbia (THALJI & STOJANOVIĆ, 2008), Romania, Slovakia and Ukraine (MARKÓ & POZSGAI, 2009).

In Europe *H. axyridis* has spread very rapidly, particularly since 2002. In Hungary after one year it became one of the most common ladybird species (MARKÓ & POZSGAI, 2009).

*H. axyridis* is a polyphagous species preying mainly on aphids and other tree-dwelling hemipterans (e.g. psyllids and scale insects), but can also feed on eggs and larvae of other insects. It feeds not only on pests but also on beneficial insects such as other coccinellids, lacewings, hoverflies, etc. (KOCH, 2003). It is able to out-compete and displace native aphidophagous species through predation and competition over food (KOCH, 2003; ALYOKHIN & SEWELL, 2004; ROY & WAJNBERG, 2008). Because of its large prey-range, *H. axyridis* occurs in a wide variety of natural, semi-natural and anthropogenic habitats.

The body of *H. axyridis* is 5-8 mm long, oval and convex in shape. The colour of the elytra is highly variable ranging from yellow-orange to red with 0-19 black spots, or it can be black with red spots. The head, antennae and mouthparts are generally straw-yellow sometimes with two triangular black spots on head. The pronotum is yellowish with black markings that can be up to five black spots and usually they are joined to form two curved lines, an M-shaped mark or a solid trapezoid (ANDRIAENS *et al.*, 2003; PRZEVOŹNY *et al.*,

2007). Adults of *H. axyridis* seek shelter in autumn and very often choose houses and other artificial objects as their overwintering sites (KOCH, 2003).

European populations of *H. axyridis* generally include a mix of the three main colour forms: f. *succinea*, f. *spectabilis* and f. *conspicua*, with f. *succinea* predominating. According to KOCH *et al.* (2006) f. *succinea* is generally associated with boreal forests, temperate broadleaf and mixed forests, temperate coniferous forests and tropical-subtropical moist broadleaf forests. This form has elytra with a ground colour of yellow, orange, or red, and 0–21 black spots, which may or may not be fused (BROWN *et al.*, 2008).

On January 18<sup>th</sup>, February 4<sup>th</sup> and 11<sup>th</sup> 2010 seven individuals of *H. axyridis* were found overwintering with a number of two other ladybird species, *Adalia bipunctata* (Linnaeus, 1758) and *Oenopia conglobata* (Linnaeus, 1758), in the building of the Natural History Department of the National Museum of Bosnia and Herzegovina. The specimens were collected from the window frames and rooms directed to the south and to the west. All seven collected specimens of *H. axyridis* belong to the form *succinea* (Fig. 1). The building of the Natural History Department is situated in an urban area of Sarajevo and surrounded by a botanical garden and a lime tree alley to the south. *H. axyridis* already has been reported as very numerous on the lime trees (ANDRIAENS *et al.*, 2003; MARKÓ & POZSGAI, 2009; STEENBERG & HARDING, 2009). The area around the building and especially the lime tree trunks were searched for overwintering adults during February but without success.

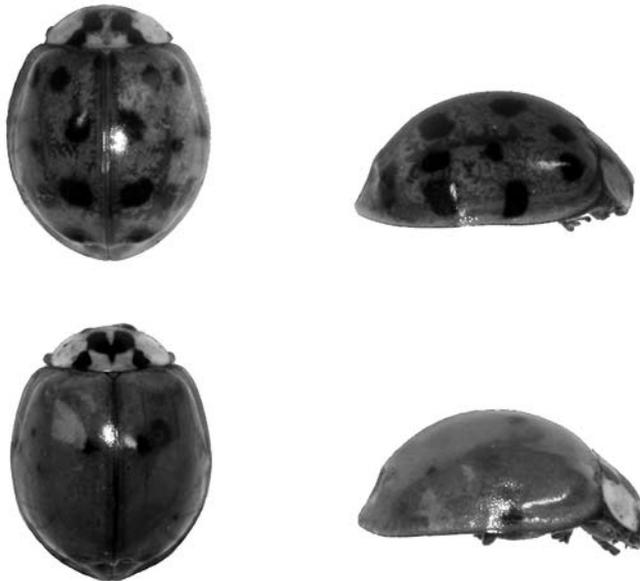


Figure 1. *Harmonia axyridis* (Pallas, 1773).

According to published data the closest known records of *H. axyridis* are from Serbia where the species was found for the first time in 2008 (THALJI & STOJANOVIĆ, 2008) at the locality Vorovo situated ca. 160 km north-east of Sarajevo. In Serbia in 2009 the species was registered further south (THALJI *et al.*, 2009), ca. 180 km from Sarajevo. This record gives new data on the distribution of *H. axyridis* in Europe.

Collected specimens are deposited in the entomology collection of the National Museum of Bosnia and Herzegovina. Further research is needed to tell whether this species is already established in Bosnia and Herzegovina. There is no information that *H. axyridis* was ever released for biological control purposes in the country.

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## ПРВИ НАЛАЗ ИНВАЗИВНЕ ВРСТЕ *HARMONIA AXYRIDIS* (PALLAS, 1773) (COLEOPTERA: COCCINELLIDAE) У БОСНИ И ХЕРЦЕГОВИНИ

ДЕЈАН КУЛИЈЕР

### Извод

Представљен је први налаз врсте *Harmonia axyridis* (Pallas) у Босни и Херцеговини. Реч је о инвазивној врсти пореклом из источне и централне Азије која је у Европу унесена у циљу биолошке контроле бильних ваши. Врста се веома брзо шири и окупира бројна станишта, те представља претњу опстанку аутохтоних врста. Презентиран је налаз седам примерака у урбаном делу Сарајева.

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