

Alien and invasive species of harmful insects in Bosnia and Herzegovina

Mirza Dautbašić^{1,*}, Osman Mujezinović¹

¹ Faculty of Forestry University in Sarajevo, Chair of Forest Protection, Urban Greenery and Wildlife and Hunting. Zagrebačka 20, 71000 Sarajevo

* Corresponding author: mirzad@bih.net.ba

Abstract: An alien species – animal, plant or micro-organism – is one that has been introduced as a result of human activity to an area it could not have reached on its own. In cases where the foreign species expands in its new habitat, causing environmental and economic damage, then it is classified as invasive. The maturity of foreign species in the new area may also be influenced by climate changes. The detrimental effect of alien species is reflected in the reduction of biodiversity as well as plant vitality. A large number of alien species of insects are not harmful to plants in new habitats, but there are also those that cause catastrophic consequences to a significant extent. The aim of this paper is to present an overview of newly discovered species of insects in Bosnia and Herzegovina. The research area, for this work included forest and urban ecosystems in the territory of Bosnia and Herzegovina. For the purposes of this paper, an overview of the species found is provided:

- *Leptoglossus occidentalis* Heidemann; (Hemiptera: Coreidae) - The western conifer seed bug, found at two sites in Central Bosnia, in 2013 and 2015;
- *Arge berberidis* Schrank; (Hymenoptera: Argidae) - The berberis sawfly, recorded in one locality (Central Bosnia), in 2015;
- *Pontania viminalis* Linnaeus; (Hymenoptera: Tenthredinidae) - Pea gall sawfly, recorded in one locality (Central Bosnia), in 2015;
- *Obolodiplosis robiniae* Haldeman; (Diptera: Cecidomyiidae) - Black locust gall midge, found on a large number of localities in Western Bosnia, in 2010;
- *Oxycarenus lavaterae* Fabricius (Heteroptera: Lygaeidae) - Lime seed bug, recorded in Teslić (Central Bosnia), in 2012;
- *Cydalima perspectalis* Walker (Lepidoptera, Crambidae) – Box Tree Moth, recorded in Brčko (Northern Bosnia) in 2013 and then spread in whole country;
- *Aproceros leucopoda* Fabricius (Hymenoptera, Argidae) – Elm sawfly, recorded in Vareš (Central Bosnia), in 2017.
- *Corythuca arcuata* Fabricius (Heteroptera: Tingidae) – Oak lace bug, recorded in Vareš (Central Bosnia), in 2017.

Due to the intense traffic of goods and passengers, these days, it is almost impossible to prevent entry of new insect species in a particular area. However, timely detection of new alien and invasive species is a good starting point for successful eradication and their localization.

Keywords: Alien species, Invasive species, *Leptoglossus occidentalis*, *Arge berberidis*, *Pontania viminalis*, *Obolodiplosis robiniae*, *Oxycarenus lavaterae*, *Aproceros leucopoda*, *Corythuca arcuata*, Bosnia and Herzegovina