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Arrival in Kazakhstan of *Leptoglossus occidentalis* (Hemiptera: Heteroptera: Coreidae); a North American invasive species expands 2,500 kilometres to the east

Vroubenka americká *Leptoglossus occidentalis* (Hemiptera: Heteroptera: Coreidae) nalezena v Kazachstánu: severoamerický invazní druh expandoval 2500 kilometrů na východ

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Abstract. The first record from Kazakhstan of the North American invasive coreid bug *Leptoglossus occidentalis* Heidemann, 1910 is given, from a city park in Almaty. This extends the known and predicted ranges of this rapidly spreading species more than 2500 kilometres eastwards.

The North American coreid bug *Leptoglossus occidentalis* Heidemann, 1910, known as the 'Western Conifer Seed Bug', is native to the western United States and Canada. It was first reported in Europe in 1999 from Italy (Tescari 2001). It has since spread rapidly in all directions, and is now known from most European countries, including Austria, Belgium, Bosnia Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Kosovo, Luxembourg, Macedonia, Malta, Moldavia, Montenegro, The Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain and Switzerland (Dolling 2006, Aukema et al. 2013, Protić & Stanković 2015, Kulijer 2016, Kulijer & Ibrahimi 2017). It has also been reported from Turkey (Fent & Kment 2011, Özgen et al. 2017), Lebanon (Nemer 2015), the Golan Heights (van der Heyden 2018), Tunisia (Ben Jamâa et al. 2013), Morocco (Gapon 2015), and Ukraine and European Russia (Gapon 2013, Gapon et al. 2016). It has also spread into the eastern part of North America, and has recently been reported from Japan (Ishikawa & Kikuhara 2009) and Korea (Ahn et al. 2013) and intercepted in China (Zhu 2010, Fent & Kment 2011), as well as records from Chile (Faúndez et al. 2017). It is associated with a wide range of conifers, often the North American Douglas fir *Pseudotsuga menziesii* (Pinaceae). Adult bugs are usually noticed in autumn, when they can enter buildings in search of hibernation sites. This habit, combined with its very large size and striking appearance, makes this a frequently reported species, and has allowed its rapid expansion to be fairly well documented.

Although there are numerous examples of adventitious old world species in North America, the reverse is more rarely true, and *Leptoglossus occidentalis* is one of few examples of a Nearctic insect that has successfully colonised the Palaearctic. Its spread may have been aided by the widespread sale and commercial planting of Douglas fir, both as an ornamental tree and a timber crop. Several other new world insects that have successfully established in

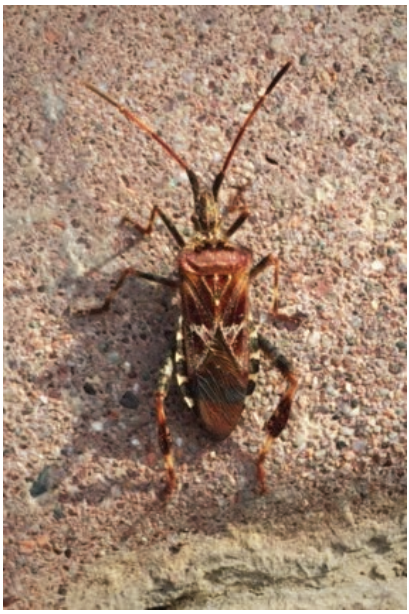


Fig. 1. *Leptoglossus occidentalis* in Almaty, Kazakhstan.

the old world, e.g. *Leptinotarsa decemlineata* (Say, 1824), *Diabrotica virgifera* LeConte, 1868 (both Chrysomelidae) and *Stenopelmus rufinasus* Gyllenhal, 1836 (Erirhinidae) have also been facilitated by the abundance of a new world host plant, a crop in the two former examples, an invasive weed in the latter. For *Leptoglossus*, however, it is suggested (P. Kment, pers. comm. 2018) that the adult is the most important stage for dispersal. It is a powerful flier, as demonstrated by records from offshore oil platforms more than 300 kilometres from land (Endrestøl & Hveding 2017), and may also be transported along with goods in which adults are hibernating.

On 21st October 2017, around 15.30 PM, SVN photographed an adult of *Leptoglossus occidentalis* on the ground in the First President's Park, Almaty, Kazakhstan, at approximately 43°11'34.7"N 76°53'11.8"E, and sent the image to MVLB (Fig. 1). First President's Park is a large park in the centre of the city, with extensive and recent ornamental tree planting. It seems possible that the bug was attracted toward street lighting from nearby conifers during the previous night. There do not appear to be any previous records from Kazakhstan, and the closest published records that we could find, from Ossetia in Russia (Gapon 2016), are more than 2,500 kilometres to the west. This record extends the known range of this species very considerably into the centre of Asia, far into the continental climate zone. It is considerably to the east of the extent of the potential range predicted by Zhu et al. (2014).

An internet search revealed that Vladimir Kazenas, of the Kazakhstan National Academy of Science, has identified additional photographs of *Leptoglossus occidentalis* from Almaty, posted on the photography website 'MacroID.ru' and taken at unreported locality in Almaty on 20th and 21st October 2017. We made contact with Dr. Kazenas who encouraged us to publish this occurrence independently. It seems likely that this species is already quite abundant in Almaty.

The mobility of this species, combined with the transportation of conifers and of structures used by hibernating adults, will no doubt lead to its continued spread. It seems likely that this bug could encircle the entire Northern Hemisphere within a few years.

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SHRNUTÍ

Uvádíme první nález severoamerické invazní vroubenky *Leptoglossus occidentalis* Heidemann, 1910 z Kazachstánu, z městského parku v centru města Almaty. Tento nález rozšiřuje známý a předpokládaný areál tohoto druhu o více než 2500 km na východ.