

Scientific Note

On the establishment of the western conifer seed bug *Leptoglossus occidentalis* Heidemann (Heteroptera: Coreidae) in Chile

Sobre el establecimiento de la chinche de las coníferas occidental *Leptoglossus occidentalis* Heidemann (Heteroptera: Coreidae) en Chile

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Abstract. After the first interceptions of *Leptoglossus occidentalis* in Chile, the first also in the southern hemisphere, a year later new collecting confirms the establishment of this species in the country. The records are from diverse localities and regions in the country, including places far away from the coastal areas, where it initially was observed. Although there are still not records of economic damage, the establishment of this species in the country may lead to infestations on pine plantations. Also, there are several native coniferous species, with conservation problems that may be reached by this species. Therefore it is urged to local authorities to start education and control programs regarding this species.

Key words: Distribution, Hemiptera, invasive species, southern hemisphere.

Resumen. Después de las primeras intercepciones de *Leptoglossus occidentalis* en Chile, las primeras también para el hemisferio sur, se confirma su establecimiento un año más tarde basado en nuevas recolecciones hechas en el país. Los registros provienen de diversas localidades y regiones del país, incluyendo zonas alejadas de las áreas costeras, donde esta especie fue observada inicialmente. A pesar de que aún no existe registro de daño económico, el establecimiento de *L. occidentalis* podría traducirse en futuras infestaciones en plantaciones de pino. También las especies nativas de coníferas, incluso algunas con problemas de conservación, podrían verse alcanzadas por esta chinche. Por esto se estima necesario que las autoridades locales inicien planes de educación y control para esta especie.

Key words: Distribución, Hemiptera, especie invasora, hemisferio sur.

Leptoglossus occidentalis Heidemann, 1910 or the western conifer seed bug is one of the two invasive species within the genus *Leptoglossus* (Brailovsky 2014). This species is considered a pest in pine nuts (Awan and Pettenella 2017), and it has also been recently reported to have the ability to bite humans (Hornok and Kontschán 2017). It is native to the western part of North America and it has been extended eastern wards, reaching several countries in Europe (Lis *et al.* 2008; van der Heyden 2018; Lesieur *et al.* 2018), and it has also

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been recorded from Japan (Ishikawa and Kikuhara 2008), China (Zhu 2010), South Korea (Ahn *et al.* 2013), Tunisia (Ben Jamâa *et al.* 2013) and Golan Heights (van der Heyden 2018).

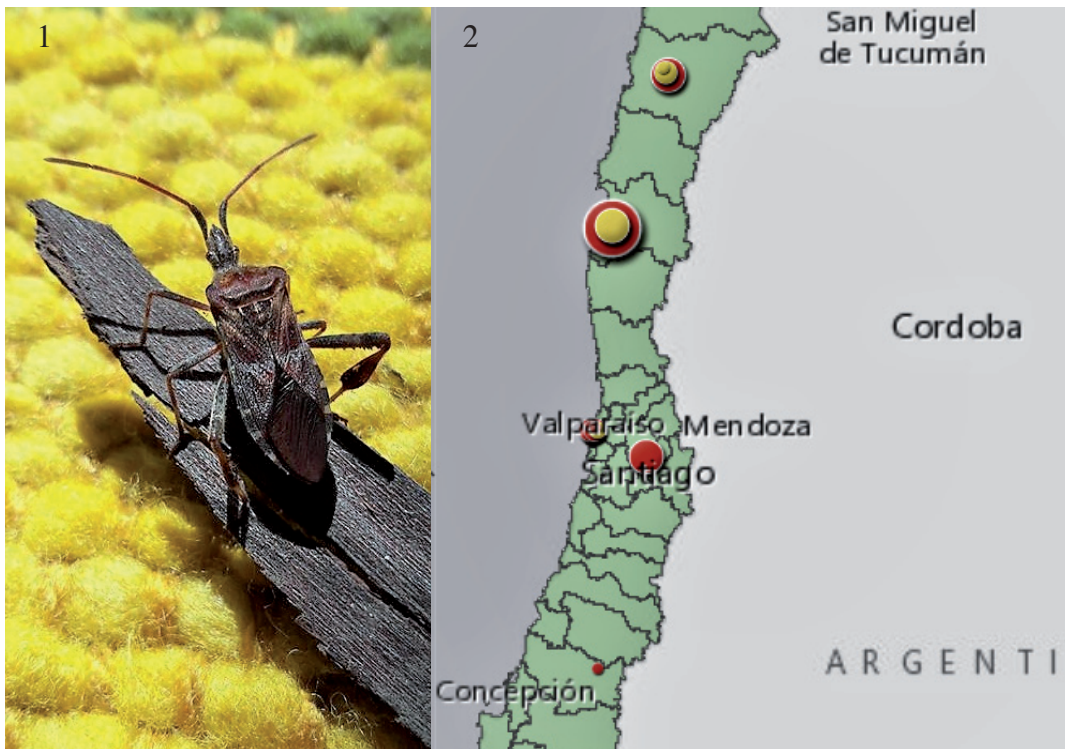
In the southern hemisphere, it has been recorded only from Chile in 2017 (Faúndez *et al.* 2017), in a few localities from the central zone of the country. After that it rapidly expanded in the country, probably due to human transport (Faúndez and Rocca 2017). However, Faúndez and Rocca (2017) explained that there is still a possibility that the species does not survive the winter and the invasion may not be successful, as it was the first one in the southern hemisphere. The purpose of this contribution is to report the actual situation of *L. occidentalis* in Chile.

Through identifications made by the authors to general public, pest management companies and collections from surveying activity by the authors; the following records have been gathered in the late summer-autumn (January to April 2018) (Table 1). For identifications Brailovsky (2014), plus Faúndez *et al.* (2017) were followed. Photographic records were included only if the specific identification can be ensured.

Table 1. Occurrences of *L. occidentalis* in Chile in the first months of 2018. X denotes adult recording, O denotes nymph recording. * Locality will change its Region to the new Ñuble Region in September 2018.

Locality	January 2018	February 2018	March 2018	April 2018
Atacama Region				
Copiapó		O	X	
Tierra Amarilla		OO	XXX	
Coquimbo Region				
Coquimbo				XXX
La Serena			XXX	XXXXX
Valparaíso Region				
Valparaíso		O		XX
Playa Ancha				XX
Viña del Mar	O			XX
Reñaca				X
Metropolitan Region				
Santiago				XXX
Bío Bío Region				
Chillán, San Fabián*				X

The records provided above confirm the establishment of *L. occidentalis* in Chile, a year after the first invasion, including surviving a winter and the finding of immature stages. These records cover a large area of Chilean distribution. All these records were obtained in urban environments, mostly inside homes or peridomestic environments. The actual distribution matches with the last paper of Faúndez and Rocca (2017), therefore the species seems to be successful in all these localities. Although there are few distributional gaps for this year, these may be due to extra sampling need. It is interesting that specimens have been found in places like Santiago or San Fabián (Figs. 1-2) as these are so far away from coastal localities where this species initially arrived to Chile. The low number of nymphs reported may be due the habits of these. Usually they remain in the pine trees feeding; whereas adults are found in homes searching places for overwintering (Faúndez pers. obs.). Additionally, the only places where nymphs have been reported are homes with ornamental pine trees in their backyards or neighborhoods. The areas successfully colonized by *L. occidentalis* are within the suitable areas for invasion proposed by Zhu *et al.* (2014). However, these authors indicated a larger area of Chile as suitable for this species; therefore these may be reached by *L. occidentalis* the next years. Up to this point there is no record of economic loss on Chilean pine trees plantations; however the little knowledge of this species in the country may be a factor for *L. occidentalis* to not been taken into account in the last season. Finally, the establishment of this species in the southern part of the country is concerning, as Faúndez and Rocca (2017) indicated that there are several native conifers that may be target of *L. occidentalis*, including species with a delicate conservation status. Therefore, it is urgently recommended that local authorities start education and control programs for this species.



Figures 1-2. 1. Specimen of *Leptoglossus occidentalis* from Bío Bío Region, Chile. 2. Records of *L. occidentalis* in Chile from 2018. Red = adult records, yellow = immature records. Sizes of the circles are proportional to the amount of records.

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