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NOTE

First record of *Leptoglossus occidentalis* (Heteroptera: Coreidae) in Morocco

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Abstract

The invasive species *Leptoglossus occidentalis* Heidemann, 1910 is recorded for the first time from Morocco. Three nymphs were collected near the coast of the Strait of Gibraltar in Tangier-Tetouan region. This is the second finding of the species in North Africa (after Tunisia, in 2013) and the southernmost record in the Western Palaearctic.

Key words: Western conifer seed bug, invasive species, North Africa, Morocco.

Resumen

Primera cita de* Leptoglossus occidentalis (*Heteroptera: Coreidae*) *en Marruecos

Se cita por primera vez de Marruecos la especie invasora *Leptoglossus occidentalis* Heidemann, 1910. Se han recolectado tres ninfas cerca de la costa del Estrecho de Gibraltar en la región de Tánger-Tetuán. Constituye el segundo hallazgo de la especie en el norte de África (tras Túnez en 2013) y su registro más meridional en el Paleártico Occidental.

Palabras clave: Chinche de los piñones, especie invasora, norte de África, Marruecos.

Laburpena

Leptoglossus occidentalis*en* (*Heteroptera: Coreidae*) *lehenengo aipua Marokon*

Leptoglossus occidentalis Heidemann, 1910 lehenengo aldiz aipatzen da Marokon. Hiru ninfa harrapatu dira Gibraltar Itsasarteko kostaldetik gertu, Tanger-Tetuan eskualdean. Hau da espeziearen ipar Afrikako bigarren aurkikuntza (Tunisen 2013az geroztik) eta bere aipurik hegoaldekoena Paleartikoko Mendebaldean.

Gako-hitzak: Pinazien zimitza, espezie inbaditzailea, Afrikaren iparraldea, Maroko.

An assumption that the invasive species *Leptoglossus occidentalis* Heidemann, 1910 can spread along almost the entire northern coast of Africa was made in my analysis of the possible extension of the species habitat in the Palaearctic (Gapon, 2012). This assumption was made on the basis of a comparison of environmental conditions at new potential areas for an invasion to those within the habitat of the species in North America. The sum of effective temperatures, sufficient for development of at least one generation per year, the influence of climate continentality (the division of a mainland on seashore and continental sectors), the availability of food plants and other factors were taken into account. The presence of naturally growing and cultivated pine trees in North Africa meant that the bug could appear there. This assumption was supported by the presence there of *Pistacia* L., on which the bug can feed during the entire development cycle, according to Uyemoto *et al.* (1986). The border of *Pistacia* natural habitat in

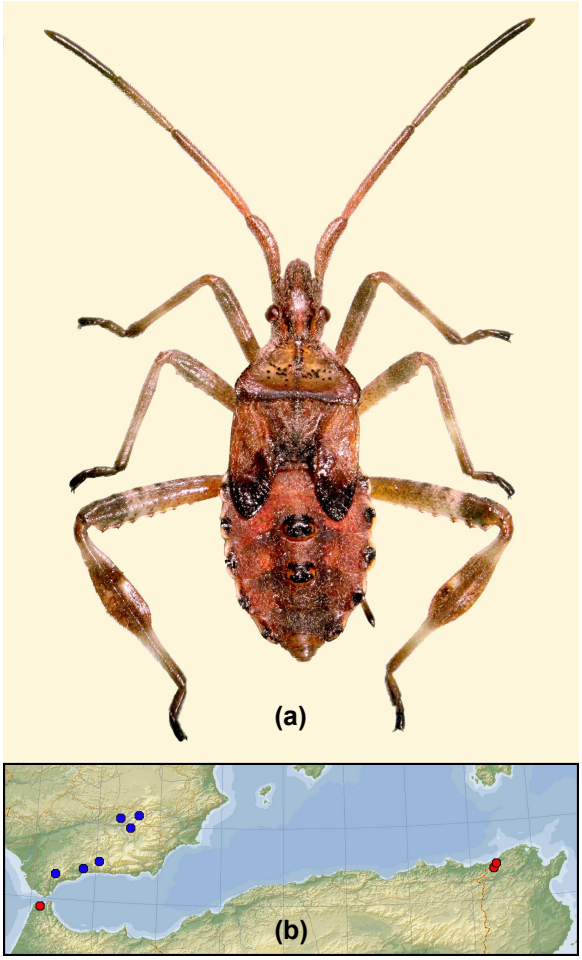

FIGURE 1. *Leptoglossus occidentalis:* (a) The nymph of instar V collected near Tangier; (b) The known distribution of the species in North Africa and Andalusia.

North Africa passes along the southern coast of the Mediterranean Sea and coincides with the boundary of the sub-Atlantic sector which is favorable for development of the bug. In addition, the sum of effective temperatures in North Africa is so high that enables development of several generations of bugs per year.

In 2013, Ben Jamâa *et al.* reported on the first finding of *L. occidentalis* in North Africa. The bug was found in the northwest of Tunisia, in Dar Fatma (36°49'N 08°46'E) and Sidi Bader (36°56'N 08°48'E), on *Pinus pinea* L. and *Pinus halepensis* Mill., respectively.

During a recent expedition to Morocco, I collected *L. occidentalis* in Tangier-Tetouan region, about 5 km north-east of Tangier (35°48'48"N 5°43'16"W). Two nymphs of instar III and one nymph of instar V (Fig. 1a) have been found 16.VI.2015 on large strobilae of singly standing *Pinus pinaster* Aiton, one kilometer from the sea coast. Bugs were not found in a group of (presumably) *Pinus pinea* L. located nearby. Currently, this place is the most southerly record of *L. occidentalis* in the Western Palaearctic.

This place in Morocco is located about 1300 km west of the places of finding of the species in Tunisia. Most likely, invasions of the species in these countries from Europe occurred independently of each another.

It is difficult to say in what way it has traversed the water barrier. The width of the Strait of Gibraltar near the place of finding in Morocco is about 20 km and its least width is 14 km. As known, this species has a good flight capacity. Perhaps specimens from Andalusia, where the bug was found along the southern coast (Pérez Valcárcel and Prieto Piloña, 2010; Fig. 1b), were able to overcome the Strait of Gibraltar on their own, with a strong favoring wind. And definitely they can be transported by a ferry crossing between Spain and Morocco or between Spain and Ceuta.

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