

# Western Conifer Seed Bug

## *Leptoglossus occidentalis*



Figure 1. Adult *Leptoglossus occidentalis* resting on a conifer

### Background

*Leptoglossus occidentalis* (Heidemann) (Hemiptera: Coreidae) is a Nearctic leaf-footed pine bug that has recently arrived in the UK (Figure 1). In its native North America, where it is commonly known as the Western Conifer Seed Bug, this insect is a relatively serious pest of conifer seed nurseries, particularly Douglas fir (*Pseudotsuga menziesii*). It was first detected in Britain in 2007, when a single adult was found in a classroom at Weymouth College, Dorset. In the late summer of 2008 there were more than 45 reported sightings of this insect. Since July 2009, Fera and Forest Research have received details of more than 100 sightings, predominantly from along the south coast, but also inland from across much of England (Bedfordshire, Berkshire, Cornwall, Cumbria, Derbyshire, Devon, Dorset, East and West Sussex, East Yorkshire, Essex, Gloucestershire, Hampshire, Isle of Wight, Kent, Leicestershire, London, Merseyside, Norfolk, Nottinghamshire, Suffolk, Surrey, Warwickshire, West Yorkshire, Worcestershire), in south Wales (Swansea) and the Channel Islands (Jersey, Guernsey). Nymphs have been found at one location, which suggests that a breeding population has established.

### Geographical Distribution

*Leptoglossus occidentalis* was originally restricted to western parts of the United States, Canada and Mexico, but in recent decades it has spread eastward and can now be found over almost the whole of North America. It was accidentally introduced into Europe in 1999, to northern Italy, and has since spread rapidly, being recorded from Switzerland in 2002, Spain and Slovenia in 2003, Croatia and Hungary in 2004, Austria in 2005, Germany, France, Serbia and the Czech Republic in 2006, Belgium, Britain and Slovakia in 2007, and from Montenegro and Poland in 2008. In the UK, the majority of records have been of adults observed at light traps along the south coast of England, clearly indicating a large migration across the English Channel.

## Host Plants

Adults and nymphs feed on the flowers, developing cones and seeds of over 40 species of conifer trees, with a preference for Pinaceae, including Scots pine (*Pinus sylvestris*), Austrian and Corsican pine (*Pinus nigra*), lodgepole pine (*Pinus contorta*) and Douglas-fir (*Pseudotsuga menziesii*). It has also been observed feeding on spruce (*Picea*), fir (*Abies*), cedar (*Cedrus*) and juniper, and occasionally on non-coniferous plants (e.g., in warmer regions, on *Citrus* and *Pistacia*).



**Figure 2. Adult *Leptoglossus occidentalis* are reddish brown with a transverse white zigzag line across the centre of the wings, and they have expansions on the tibiae of the hind legs.**

## Description

*Leptoglossus occidentalis* and the other plant-feeding bugs in the family Coreidae are commonly called “leaf-footed bugs” or “squash bugs”. They generally resemble shield bugs (Pentatomidae), but usually have modified or expanded hind legs. The adults of *L. occidentalis* are relatively large and conspicuous, with an average length of 15-20 mm and width of 5-7 mm. The species is easily recognised from all other native coreids in Britain by its reddish-brown body, transverse white zigzag line across the centre of the wings (although this is sometimes faint or even absent), and characteristic expansions on the hind tibiae (Figure 2).

Young nymphs are orange, but become reddish-brown as they moult toward the adult stage. The eggs are barrel-shaped and about 2 mm in length, and are laid in chains along conifer needles. The adults are strong fliers and produce an audible ‘buzz’ when in flight.

## **Biology, Dispersal and Detection**

Adults emerge from over-wintering sites in mid- to late spring and feed on one-year old cones and inflorescences. Females lay up to 80 eggs on the foliage during May or early June, which hatch after 10-14 days. The first instar nymphs feed on the needles and tender tissue of cone scales, whereas the later nymphal stages and adults feed on developing seeds and cones. The immature nymphs go through five stages of development before becoming adults in late August.

Adults usually aggregate under peeled bark or in bird and rodent nests to over-winter, but they will also hibernate in buildings. In parts of North America, where large numbers of the bugs sometimes enter buildings in the autumn, they can become a household nuisance. In northern temperate regions there is usually a single generation per year, but in warmer climates (e.g. Mexico) several generations are possible.

## **Economic Importance and Damage**

*Leptoglossus occidentalis* is a relatively serious pest of conifer seed nurseries, particularly Douglas-fir, in southern Canada and the USA. Adults and nymphs feed on the endosperm of the seeds and induce a high incidence of conelet abortion. They can reduce the yield and quality of conifer seed by up to 80%. No external damage is visible on the cones.

In Europe, there have been no reports so far of severe damage to conifer seed orchards or in forests. However, most records of *L. occidentalis* in Europe have come from parks, gardens and buildings in towns and cities and it is too early to say, at the moment, what impact *L. occidentalis* might eventually have on its host plants in the UK.

## **Advisory Information**

This insect has spread rapidly across Europe and the large influx of individuals into southern England in 2008 and 2009 has been the result of natural dispersal across the Channel from established populations in northern France and other parts of the near continent. Consequently, there are no practical measures which can be used to prevent the introduction of *L. occidentalis* into the UK, and *L. occidentalis* is not listed as a quarantine pest and the Forestry Commission (Forest Research) and Fera do not need to be notified of any further finds or sightings.

*Leptoglossus occidentalis* does not bite, sting or carry any known disease and is therefore harmless. The bugs can however, emit a distasteful odour. If found indoors, they can be removed by hand using tissue paper or rubber gloves, and disposed of or placed out of doors.

## **For further information contact:**

### **Sharon Reid, Ray Cannon, Chris Malumphy**

The Food and Environment research Agency (Fera), Sand Hutton, York YO41 1LZ, UK.  
Tel +44 (0)1904 462 000 Fax +44 (0)1904 462 111

### **Christine Tilbury, Nigel Straw**

Forest Research, Alice Holt Lodge, Farnham, Surrey GU10 4LH, UK.  
Tel +44 (0)1420 22255 Fax +44 (0)1420 23653

© Crown copyright 2009