

An unusually large aggregation of the western conifer seed bug, *Leptoglossus occidentalis* (Hemiptera: Coreidae), in a man-made structure

S. E. BLATT

DEPARTMENT OF BIOLOGICAL SCIENCES, CENTRE FOR PEST MANAGEMENT
SIMON FRASER UNIVERSITY, BURNABY, BC, V5A 1S6 CANADA

ABSTRACT

An overwintering aggregation of more than 2000 *Leptoglossus occidentalis* is reported in a manufacturing plant in the southern interior of British Columbia. Such aggregations may be mediated by pheromones. Range extension may have occurred through inadvertent transport of aggregations of overwintering adults.

DISCUSSION

The western conifer seed bug, *Leptoglossus occidentalis* Heidemann, is a serious pest of conifer seed production (Koerber 1963), particularly on *Pinus* spp. (Connelly and Schowalter 1991). During the fall adults, like other coreids, seek sheltered overwintering sites. When human habitation interfaces with forests, these sites can include garages, birds' nests (Hussey 1953) and houses (T.W. Koerber, Entomological Services Inc., Berkeley, California, personal communication). *L. occidentalis* has recently extended the eastern limits of its range and has become a common household pest in Michigan (Gall 1992), Ontario (Marshall 1991; McPherson *et al.* 1990), Wisconsin and Minnesota (Katovich and Kulman 1987). Numbers of insects found in or on the homes varied from less than a dozen to roughly a hundred individuals.

In October 1993, Richard Prebble, Manager of the Imperial Chemical Industries (ICI) Explosives Plant in Tappen, BC, 78 km east of Kamloops, reported an infestation of *L. occidentalis* in and around the manufacturing plant. On inspecting the site, I found large numbers of *L. occidentalis* congregated around door jambs, windows and in cracks within the concrete walls. Hundreds of bugs were aggregated around heating exhaust ports. I collected 1065 live bugs (608 males and 457 females) and estimated that there were at least 1000 more dead on the floors, window sills and in the door jambs; a result of chemical control by the plant staff. Several workers indicated that the infestation was 'manageable' compared with what it had been just two weeks before. For the past three years, similar infestations have been observed at this plant; they reportedly last for roughly three weeks and then 'disappear'. An aerial photograph obtained from the BC Ministry of Forests showed that *L. occidentalis* must have flown a considerable distance to reach the aggregation site. The plant is located in a meadow, at least 300 m from forest edges to the north and west, 900 m from a patch of conifers to the east and 750 m from a small patch of conifers to the south.

Small aggregations of *Leptoglossus corculus* (Say) have been observed in the southern USA (J.C. Nord, USDA Forest Service, Athens, Georgia, personal communication) and overwintering aggregations of other Hemiptera also occur. Schowalter (1986) documented an aggregation of ca. 8,000 boxelder bugs, *Boisea rubrolineata* (Barber), in western Oregon. The aggregation was found 500-1,000 m away from feeding hosts. Aggregations of > 6,000 swallow bugs, *Oeciocacus vicarius* Horvath, have been reported in Washington (Zack 1990). Chinch bugs, *Blissus leucopterus leucopterus* (Say), also aggregate to overwinter in groups of typically < 200 individuals (Negron and Riley 1991). In all instances, pheromonal attraction was suggested as a causal factor of aggregations. It has been hypothesized that extension in the range of *L. occidentalis* has occurred through the inadvertent transport by mankind of aggregations of bugs overwintering on or in transported goods (L.M. Humble, Canadian Forest Service, Pacific Forestry Centre, Victoria, BC, personal communication).

ACKNOWLEDGMENTS

I thank Dr. J.H. Borden for review and R. Prebble for allowing me to collect bugs on ICI premises. Funding for this work was provided by the Canadian Forest Service and Natural Sciences and Engineering Research Council of Canada.

REFERENCES

- Connelly, A.E. and T.D. Schowalter 1991. Seed losses to feeding by *Leptoglossus occidentalis* (Hemiptera: Coreidae) during two periods of second year conedvelopment in Western White Pine. *J. Econ. Entomol.* 83:1485-1486.
- Gall, W.K. 1992. Further eastern range extension and host records for *Leptoglossus occidentalis* (Hemiptera: Coreidae): well-documented dispersal of a household nuisance. *Great Lakes Entomol.* 25:159-171.
- Hussey, R.F. 1953. Concerning some North American Coreidae (Hemiptera). *Bull. Brooklyn Entomol. Soc.* 48:29-34.
- Katovich, S.A. and H.M. Kulman 1987. *Leptoglossus corculus* and *Leptoglossus occidentalis* (Hemiptera: Coreidae) attacking red pine, *Pinus resinosa*, cones in Wisconsin and Minnesota. *Great Lakes Entomol.* 20:119-120.
- Koerber, T.W. 1963. *Leptoglossus occidentalis* (Hemiptera: Coreidae) a newly discovered pest of coniferous seed. *Ann. Entomol. Soc. Amer.* 56:229-234.
- Marshall, S.A. 1991. A new Ontario record of a seed eating bug (Hemiptera: Coreidae) and other examples of the role of regional insect collections in tracking changes to Ontario's fauna. *Proc. Entomol. Soc. On.* 122:109-111.
- McPherson, J.E., R.J. Packauskas, S.J. Taylor and M.F. O'Brien 1990. Eastern range extension of *Leptoglossus occidentalis* with a key to *Leptoglossus* species of America north of Mexico (Hemiptera: Coreidae). *Great Lakes Entomol.* 23:99-104.
- Negron, J.F. and T.J. Riley 1991. Seasonal migration and overwintering of the chinch bug (Hemiptera: Lygaeidae) in Louisiana. *J. Econ. Entomol.* 84:1681-1685.
- Zack, R.S. 1990. Swallow bug (Hemiptera: Cimicidae) in Washington with an unusual overwintering site. *Pan Pac. Entomol.* 66:251-252.