SURVEY FOR SYCAMORE LACE BUG *CORYTHUCHA CILIATA* (SAY) (HEMIPTERA: TINGIDAE) IN NEW SOUTH WALES DURING 2007

B.C. Dominiak[1], P.S. Gillespie[2], P. Worsley[1] and H. Löcker[2]

[1]NSW Department of Primary Industries, Locked Bag 21, Orange NSW 2800, Australia
[2]NSW Department of Primary Industries, Forest Road, Orange Agricultural Institute, Orange NSW 2800 Australia
Email: bernie.dominiak@dpi.nsw.gov.au

Summary

A State-wide search for the exotic plane tree pest sycamore lace bug was undertaken in New South Wales during 2007. Sycamore lace bugs were found in the Sydney basin but not in other parts of the State. There were 78 site inspections with 43 positive detections.

Keywords: *Corythucha ciliata*, sycamore lace bug, exotic incursion

INTRODUCTION

Sycamore lace bug (SLB) *Corythucha ciliata* (Say) (Hemiptera: Tingidae) is a sap-sucking bug, which feeds on leaves of plane (=sycamore) trees (*Platanus* spp., especially *Platanus occidentalis* L.)(Platanaceae) and is essentially restricted to these hosts (Filer *et al.* 1977, Wade 1917). It is a widespread pest native to North America but now broadly distributed in Europe wherever *Platanus* is grown. When present in large numbers *C. ciliata* can be a serious pest. SLB nymphs (Figure 1) and adults (Figure 2), like all lace bugs, feed on phloem from veins on the underside of leaves, causing a progression of symptoms initially from white stippling, bronzing, chlorosis to eventually premature leaf fall (Figure 3). In North America, SLB outbreaks often coincide with dry spring conditions (Filer *et al.* 1977), and several consecutive years of heavy infestation may kill trees. This pest has been associated with the decline of *Platanus* spp. in Europe and North America where these trees are used widely as shade trees in urban environments. Similar use of these trees in Australia may mean that serious outbreaks of SLB and the subsequent loss of shade may impact upon human comfort during outdoor activity in the vicinity of affected trees (Barnard and Dixon 1983). SLB were initially detected in Sydney in late December 2006. This paper summarises the surveillance activities in New South Wales (NSW) between January and June 2007 in the initial delimiting survey. Surveillance for this pest is ongoing.

MATERIALS AND METHODS

Information of infestations was collected from two sources. Firstly, Sydney councils were asked to check host trees and to report their findings. Positive detections relied on council staff being able to identify this new pest accurately in the field as they did not collect specimens for checking by an expert. The second set of information came from a survey of host trees conducted by NSW Department of Primary Industries (NSW DPI) staff. Suspect leaves were sent to the NSW DPI Agricultural Scientific Collections Unit (ASCU) at the Orange Agricultural Institute for identification of any insects present. Some positive samples were retained as voucher specimens in ASCU (http://www.agric.nsw.gov.au/Hort/ascu/index.html).

Figure 1. Sycamore lace bug nymph (scale bar = 1 mm).

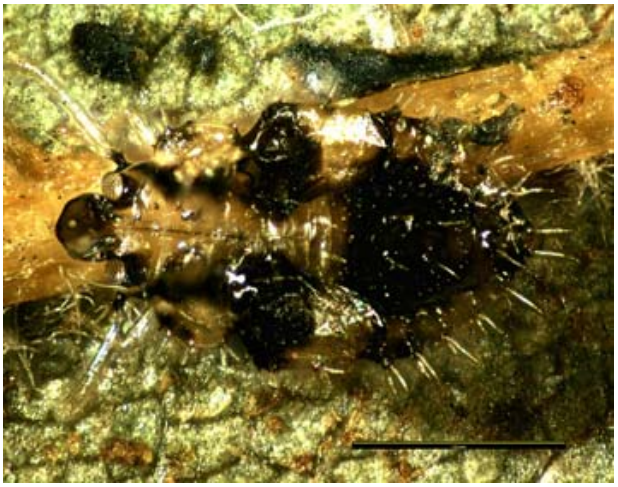


Figure 2. Sycamore lace bug adult (scale bar = 1 mm).

Figure 3. Plane tree suffering from heat stress and sycamore lace bug infestation: clockwise from left - sycamore lace bug damage spreading out from centre of a fresh leaf; affected whole tree; damaged leaf fall.

RESULTS

This survey reports the first record of sycamore lace bug in Australia. The distribution of positive and negative leaf samples, based on the information from the two sources, is given in Figures 4 and 5. The survey resulted in 28 reports from council staff with 21 positive findings and 50 inspections conducted by NSW DPI staff with 22 samples confirmed positive for SLB, making a total of 42 samples of *C. ciliata* from 78 samples.

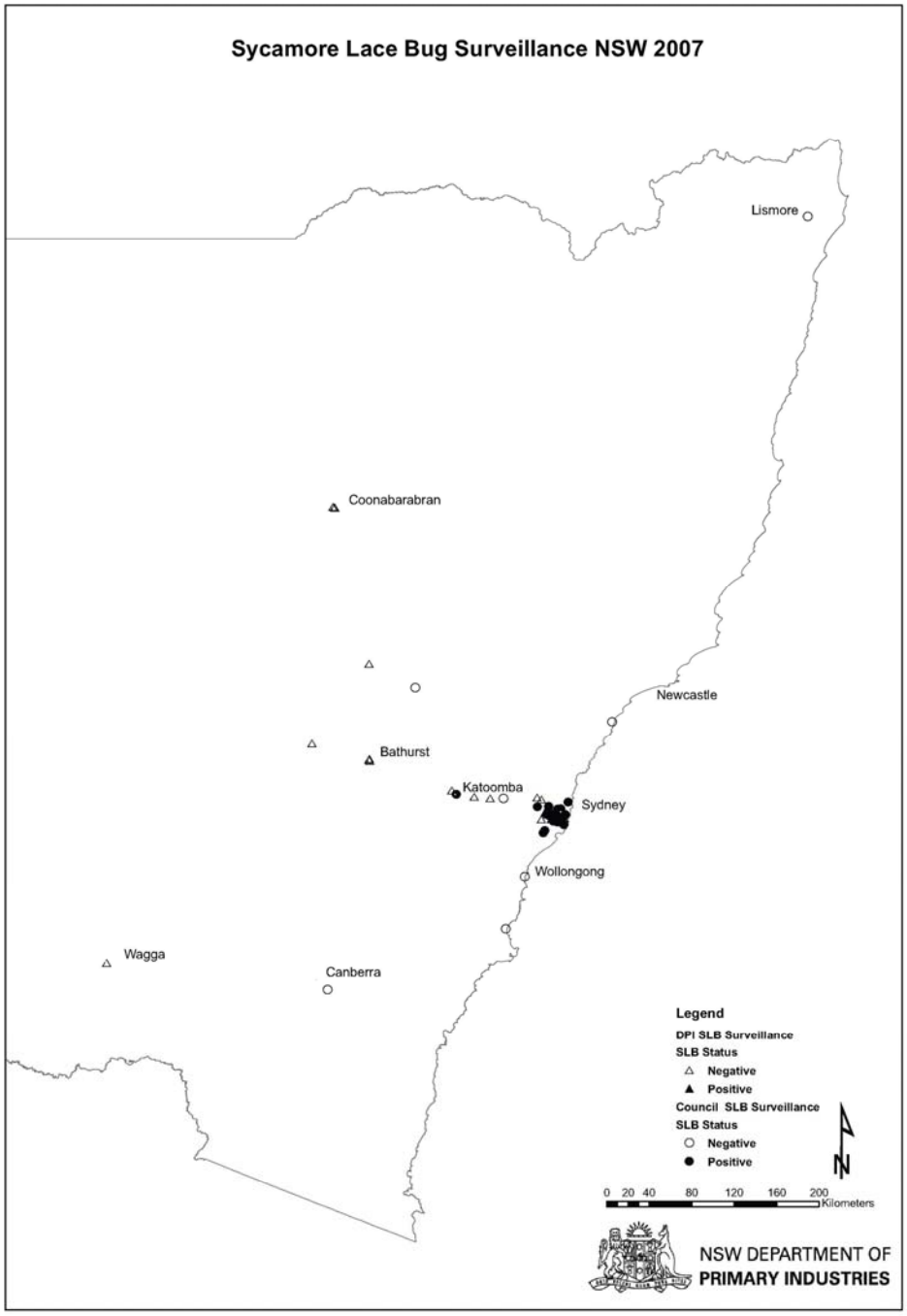
DISCUSSION

At the time of writing (January 2008) SLB has not been found beyond the Sydney basin and Blue Mountains (Figures 4, 5). Within the central area of positive reports, the NSW DPI identifications largely agree with the council reports. However a note of caution should be made that observations of the symptoms of SLB require positive confirmation of the identity of specimens from the same area to determine the establishment of the pest, as the feeding symptoms of SLB are very similar to heat stress symptoms. During the survey period for SLB the Sydney basin was in drought and many plane trees showed stress symptoms. Many council staff only reported symptoms but did not send any samples for identification. For example, council staff reported positive symptoms at Parramatta (western Sydney) and at Katoomba (Blue Mountains) but there were no positive SLB detections in those areas, so such reports remain unverified. Similarly, the two detections in the southern Sydney basin were not supported by NSW DPI identifications. These three council reports need to be verified in future surveys.

SLB has established in Sydney. In response to this establishment, NSW DPI has produced an information sheet (Gillespie 2007) to assist the public when concerns are raised about defoliations of sycamore trees. SLB has become the most recent example of the establishment of an exotic insect in NSW.

Although the origin, entry point and means of entrance of sycamore lace bug into Australia remain unknown, it is certain that the insect has established in the greater Sydney region and it seems likely that in time, this pest will spread widely within and beyond NSW to any habitat in Australia where *Platanus* spp. are grown. As there are no close native relatives within the Platanaceae in Australia and the list of occurrences of host species, other than the Platanaceae, is small and primarily restricted to north American softwoods (Wade 1917) it seems unlikely that this pest will impact upon native flora. In drought conditions though, particularly in spring, this pest will likely flourish and impact upon plane tree health and any human activities under, or in the vicinity of affected trees such as has occurred in

Figure 4. Surveyed locations in NSW showing positive and negative sycamore lace bug detections.



Europe (see d'Aguilar *et al.* 1977).

Surveillance for exotic pests remains important for NSW, particularly with the globalisation of trade. Continued surveillance for exotic pests in the Sydney basin by NSW DPI is an attempt to detect incursions early and increase the chance of a successful eradication of more serious pests. Surveillance will continue to be used to map the spread of SLB whilst looking for incursions of other pests.

ACKNOWLEDGMENTS

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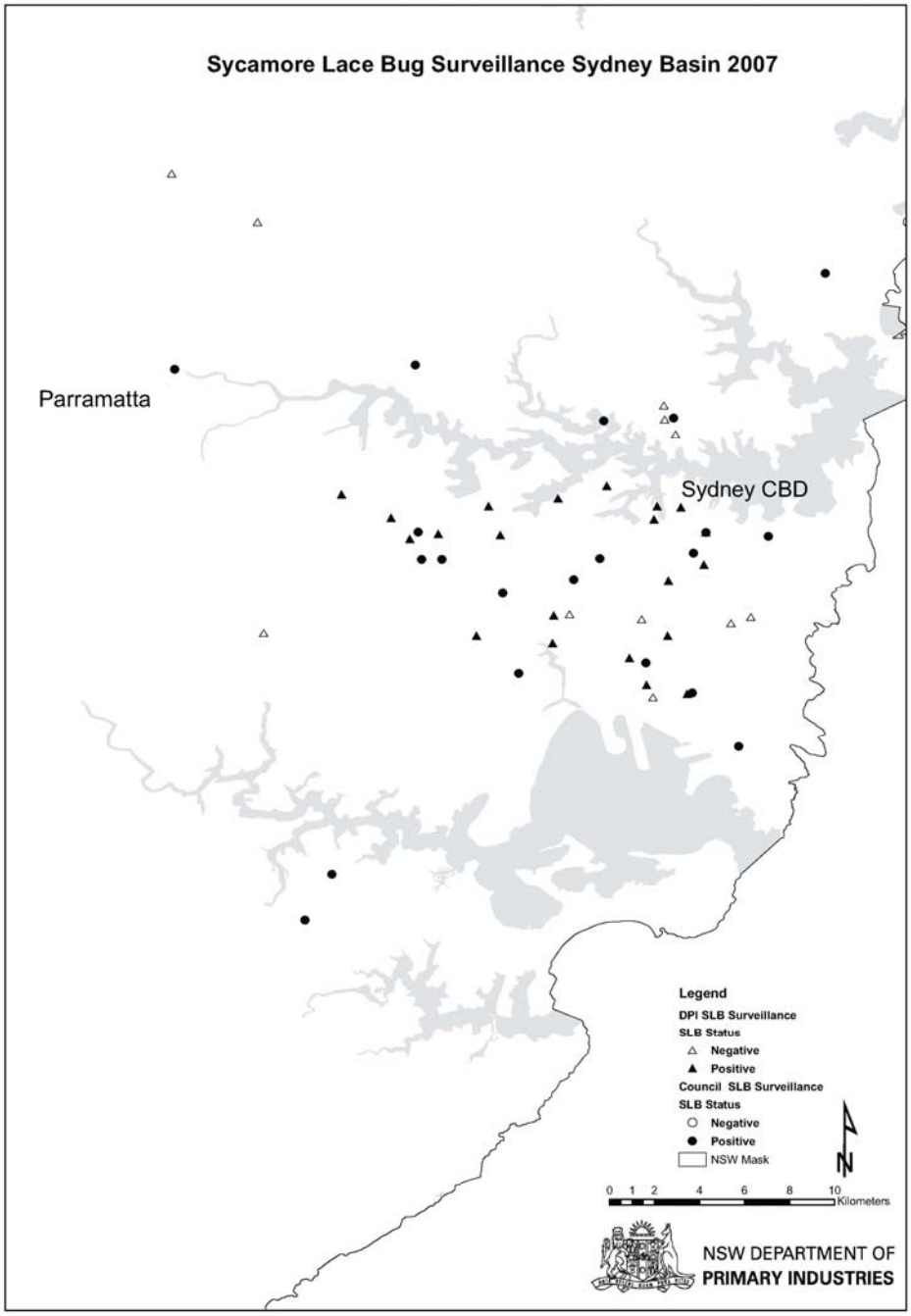
Figure 5. Surveyed locations in the Sydney basis showing positive and negative sycamore lace bug detections.



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