# Landscape Notes

# Vol.14 No.2 - Winter 1998-99

## Another New Psyllid Pest

*From California Plant Pest and Disease Report January-June, 1998 and Steve Dreistadt, UCIPM.*

Redgum Lerp Psyllid, *Glycaspis brimblecombei* -(Q)- Yet another psyllid pest of eucalyptus has been found in the state, apparently a new North American record.

The psyllid was found by Cindy Werner of Los Angeles County Department of Agriculture on redgum eucalyptus located right outside of the Agricultural Commissioner's office. Cindy collected the psyllids in June, 1998 and took them in to Rosser Garrison, county entomologist, who recognized them as something new and unusual. Three or four trees at the original collection site were heavily infested.

The infestation in El Monte had been followed a mile or two to the east, but it had not been found at that time in other localities in the Los Angeles basin. The psyllid forms a "lerp." This is a mostly secretionary structure of crystallized honeydew produced by the nymphs as a protective cover that closely resembles armored scale insects. Currently the psyllids are producing large amounts of honeydew, which is staining the ground underneath the trees, and they are also causing very severe leaf drop.

The psyllid was identified in Sacramento as *Glycaspis brimblecombei*, and specimens were sent to Daniel Burckhardt, a psyllid specialist in Switzerland, for confirmation. The psyllid nymphs form lerps that are conical in shape, and will reach a size of approximately 3 mm in diameter and 2 mm in height. The nymphs are yellow, or yellow and brown in color. The adults are light green or yellow in color, 3 mm long. The adults are different from other California psyllids in that they have very long genal cones on the face.

The psyllid is native to Australia, where it is known to feed on a localized population of the redgum eucalyptus (*Eucalyptus camaldulensis*). According to the literature, it is also known to feed on these other species of Eucalyptus in Australia: *dealbata, tereticornis, blakelyi, bridgesiana,* and *nitens*. The psyllid is implicated in serious outbreaks in native situations in Australia. The psyllid has also been found in Northern California. Samples have been collected in Alameda County by Eric Brennan, a graduate student at UC Davis, and by Ronnie Eaten, with Alameda County Department of Agriculture; at Stanford University in Santa Clara County by Nancy Garrison, Farm Advisor; and in Foster City, San Mateo County by Richard Garcia, with the San Mateo County Department of Agriculture.

The first collection in Northern California was by Eric Brennan on July 24 near Fremont at the Ardenwood Preserve, a former farm and ranch now maintained as a park by the East Bay Regional Parks District. Their entomologist was aware of the problem and called Eric's attention to it. Ardenwood has several groves of solid or mixed eucalyptus species, and Eric is working on determining which eucalyptus species are being attacked. Some species are severely attacked, with major leaf drop the result, while others have lesser infestations or infestations in which the nymphs begin to feed but do not survive through to adulthood.

The psyllid was being attacked by several predators, including the two introduced *ladybeetles Harmonia axyridis* and *Chilocorus bipustuatus*, particularly the former, which occurs in large numbers both in El Monte and Ardenwood.

***There are no Lerp Psyllids in Santa Barbara or Ventura Counties; however, they are moving around in Los Angeles County at a frightening speed, so I expect we will be having them in Ventura soon***.

## Damage

The developing nymphal stages of lerps suck the sap of the leaves while sheltering under their "lerp" scales. In heavy infestations this eventually results in discoloration of the leaf which turns reddish brown and eventually dies and falls off. Severe defoliation may result from heavy infestations, and debilitation and death may follow repeated attacks. Psyllid infestations were discovered at Stanford University after instructors and other staff members complained that sticky leaves were turning up in campus hallways and lecture halls, tracked in by people's shoes. The stickiness apparently stems from a honeydew-type substance in the insects' droppings that coats the leaves. Up to 90% of the leaves on the affected trees have fallen off. None have died this year, but if they continue to be sucked dry of their fluids by the bug, some may be dead by next summer.

## Description

The adult psyllid is about 4 mm long with transparent wings and a yellowish brown body. It is usually found in numbers on lerp infested leaves in summer. The lerp scale when fully formed in spring, is about 8 mm long, horn shaped and tapering from about 0.5 - 4 mm in width and is yellow to pale brown. Under each lerp scale there is an orange nymph which is active when the leaf is moved.

## Life Cycle

The main lerp stage appears to be from May or June to November, development being slow during winter, accelerating through spring. Adults appear in summer when eggs are laid in batches of 50 - 100 on healthy leaf surfaces. The eggs are brown and less than 0.5 mm long. Heavy re-infestation does not usually occur until autumn when the summer leaf growth has replaced the foliage defoliated by the previous infestation.

## Control

Incidence of wasp parasites appears to be very low in lerp infestations and their effect on populations is unknown. Birds may also feed on lerps but there is no evidence of them having a significant controlling effect.

# Flux Diseases In Trees

*Presented by Dr. Fred Roth at the Landscape Disease Symposium III*

Fluids leak from trees for many reasons, some of which are associated with problems that can threaten

tree survival and some of which are inconsequential. In the latter cases, the fluxing is much more a problem for the tree's owner than for the tree. In general if the bark and cambium have not been affected by the fluxing or by what caused it, the damage is not significant and, at least from the viewpoint of tree health, can be ignored. The diseases known as "Bacterial Wetwood" are a major cause of benign fluxing. Also known as "Slime Flux," the disease of Elm is the best known and most frequently encountered. The disease in Elm is associated with the accumulation of liquid in the xylem and buildup of pressure which forces the liquid to be emitted from openings in the bark. The condition is associated with many bacteria including *Enterobacteria cloacae* (*Erwinia nimmipressuralis*), *Bacillus megaterium, Enterobacter agglomerans* and *Klebsiella oxytoca*. In comparison to normal wood, wetwood may contain twice as much water.

The pH of wetwood is elevated as is the free mineral content. Wetwood is usually stained a dark color. The fluid that is emitted is mildly toxic and may prevent the closure of wounds and other openings by the growth of callus. Once outside the tree, the fluid becomes colonized by innumerable organisms and usually becomes slimy and foul smelling. The odor and stain as the fluid drains down the trunk are the principle problems for ornamental trees.

There is some evidence that the high pH and anaerobic conditions found in wetwood protect it against wood decay fungi to some extent, making the condition potentially beneficial. Bacterial Wetwood diseases occur in many species, including Poplars, Aspen, Oak, Beech, Maple and Fir. Wetwood occurs in many more species, but in most the cause has not been studied.

There is no known control for Bacterial Wetwood, but a treatment involving taping off fluid emissions to prevent trunk staining and allow wound closure has been recommended.

Foamy Canker is a very different cause of fluxing in trees. The fluid emitted from trees affected by Foamy Canker has a lowered pH and smells pleasantly alcoholic, often attracting insects which feed on molding fruit. The cause of Foamy Canker is reported to be the bacterium *Zymomonas spp*., but this is not uniformly accepted. There does appear to be some bark injury associated with this disease, but affected trees have been seen to stop fluxing with no lasting damage.

A number of seriously threatening conditions may also cause fluxing. These include attack by burrowing insects and by canker pathogens. Some species in the rose family and Eucalyptus may flux briefly when they are placed under stress or when mechanically wounded.

A condition that is known as "slime flux" exists in Coast Live Oak. It differs from a typical slime flux condition in that bark necrosis occurs. The disease is associated with the formation of small fluid-filled pockets within the outer bark from which fluid leaks down the trunk, staining it. The bark in the area surrounding and beneath the pockets becomes necrotic in a lens shaped mass, but the necrosis usually does not penetrate to the cambium. The fluxing usually stops and the necrotic bark is sloughed out as wound healing progresses. Less commonly the necrosis involves the cambium in areas of varying width. The damage is rarely lethal and is repaired by callus formation, but windows of dead bark allow the entry of wood-decay fungi. The cause of this disease has not been determined.

# Giant Whitefly Hits Ventura!

The giant whitefly, *Aleurodicus dougesii* is a voracious whitefly pest of many ornamental plants. It appears to favor shrubs such as hibiscus, xylosma and herbacious plants such as begonia. This pest is well established in Santa Barbara, Los Angeles and Orange Counties and has now been reported in the city of Ventura.

The giant whitefly causes damage to ornamental plants through the feeding of nymphs which suck sap from leaves on which the reproduce to very high numbers. Whitefly nymphs produce copious wax deposits as threads extruded from their bodies. This gives affected leaves a "flocked" appearance. When infestations are severe, shrubs can disappear in masses of white waxy material. Defoliation soon follows heavy infestations.

Control of the giant whitefly has been achieved with various pesticides such as pyrethroids, acephate and systemic pesticides (Merit). However, the control is short lived as whiteflies reproduce rapidly and will soon re-infest treated shrubs. Heavy infestations have been cleaned up by spraying water at high pressures without any pesticide treatments.

Biological control is the ultimate weapon against whitefly pests and there has been considerable work on development of biological controls of this whitefly pest. Dr. Tom Bellows at University of California, Riverside has collected and reared parasitoids against the giant whitefly. These were released in San Diego County, but have only now become plentiful enough to make releases in Santa Barbara and Ventura Counties. Early in December we released 240 *Encarsiella noyesii* in Goleta, CA in a hotspot of whitefly activity. Our office will be receiving parasitoids on a regular basis and we will make continuous releases in Santa Barbara and Ventura Counties while the parasitoids are available.

We are looking for a good release site in Ventura County with active colonies of giant whitefly. If you know of a good site where spraying will not be used to control the pest, let us know (805-645-1458).

# Horticulture Courses Offered at Ventura College

This year Ventura College has the largest offering of horticulture courses ever. The horticulture department is offering 19 courses, five in the day and 14 evening classes. Six of the courses are one unit short courses that meet for only six weeks or one day on a weekend or Friday. Classes start January 11, 1999 but you need to register early to get a place, as some of the offered courses are quite popular and will fill up fast. Persons interested in attending Ventura College may call for information and a complete schedule at 805-654-6400.

These are some of the offered courses this Winter.

Plant Biology
Soil and Water Science
Insects and Disease of Plants
Landscape Planning and Design
Landscape Management
Landscape Plant Identification and Uses II
Nursery and Greenhouse skills laboratory

Urban Trees (Arboriculture)
Conservation of Natural Resources
Introduction to Landscape Gardening Techniques
Intermediate Floral Design
Advanced landscape and irrigation Design
Fruit Tree Selection, Pruning and Care
Ornamental and Native Plant Propagation Techniques
Irrigation Water Management Audits
Spring Flowering Native Plants
Drip and Micro Irrigation Systems