

# Imported Pest Defoliates Redgum Eucalyptus in West

By Rosser Garrison,  
Los Angeles County Agricultural  
Commissioner's Office

On June 17, 1998, Los Angeles County Agricultural Inspector Cindy Werner brought some leaves to me that she had gathered from three redgum eucalyptus trees bordering a major freeway in El Monte. The leaves were covered with honeydew and curious, small white mounds. I determined that the cones were lerps (protective domes) of a completely new psyllid, one unlike any known from California or the United States.

Within four days after notifying Biosystematic Entomologist Ray Gill of the California Department of Food and Agriculture, he reported the pest was the psyllid, *Glycaspis brimblecombei*, last described in 1964 in Brisbane, Australia. Specimens were sent for confirmation to Daniel Burkhardt, a psyllid specialist in Switzerland. This species belongs to a large group of lerp-forming psyllids specific to eucalyptus trees.

## Economic Importance

Redgum lerp psyllid (RLP) is becoming a major ornamental pest of eucalyptus in California. RLP heavily infests redgum eucalyptus, *Eucalyptus camaldulensis*, but also occurs on sugar gum (*E. cladocalyx*) blue gum (*E. globulus*), *Eucalyptus rudis*, and three other species.

RLP forms a lerp, which is a structure of crystallized honeydew produced by larvae as a protective cover. The lerp resembles armored scale insects.

The psyllids produce large amounts of honeydew that coats leaves, falls to the ground, and stains any surface it hits. A blackish, sooty mold grows on honeydew covered surfaces. In severe infestations, thousands of lerps cover the ground and

understory, giving the appearance of hail. The lerps and the honeydew stick to shoes.

Heavy infestations cause severe leaf drop. Extensive defoliation weakens trees and increases susceptibility to wood boring pests, such as the eucalyptus longhorned beetle. These beetles, if successful in attacking trees weakened by RLP,

can kill branches or entire trees. Infested eucalyptus will turn brown completely.

RLP has been implicated in serious outbreaks in native vegetation in Australia. It has been known to feed on a localized population of the redgum eucalyptus, as well as *E. dealbata*, *E. tereticornis*, *E. blakelyi*, *E. bridgesiana* and *E. nitens*.

## Distribution

RLP was originally described by K. M. Moore in Brisbane, Australia. It has also been found in central Queensland and in more of New South Wales.

Besides the initial discovery in El Monte, CA, RLP has been identified in northern California. Samples there were first collected in July 1998 in Alameda County near Fremont, at Stanford University in Santa Clara County and in San Mateo County. It has also been found in Alameda, Oakland, Hayward and San Francisco.

The El Monte infestation has spread to most cities in the Los Angeles basin, and to Orange, San Diego, western San Bernardino and Riverside counties.

## Identification

The young larvae build a conical lerp by excreting a gelatinous honeydew. The large

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er larvae are found beneath the lerps and resemble an armored scale insect. The conical lerps reach about 3 mm in width and 2 mm in height. The larvae are yellow or yellow and brown. The adults are 3 mm long, slender, and pale green with areas of orange and yellow. They differ from other California psyllids in having long genal cones (hornlike) protruding from their face.

Like other psyllids, redgum lerp psyllid develops through gradual metamorphosis, which includes egg, several increasingly larger larval stages and adult. There is no pupal stage.

Development time from egg to adult varies from several weeks during warm weather to several months during prolonged cool temperatures. In mild coastal areas, all stages can be present throughout the year.

Females lay eggs on succulent leaves and young shoots, so population increases often follow new plant growth. However, all psyllid life stages can occur on both new and mature foliage.

In its native Australia, the psyllid has two to four generations per year. A similar number of generations would be expected in California.

## Cultural Control

*(The difficulty in controlling RLP is centered largely on the lack of natural predators in California. Repeated defoliation by RLP*

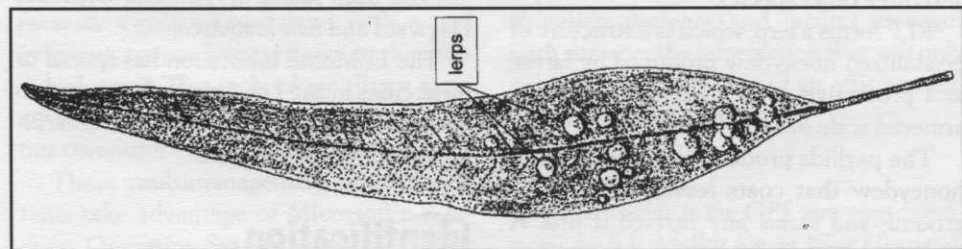
*and attack of weakened trees by the eucalyptus longhorned borer are serious threats, especially when no natural predator is present to contain outbreaks. A number of predatory wasps imported in 1999 from Australia have not been fully evaluated for their effectiveness in California. — Editor)*

Minimize tree stress by providing eucalyptus with proper cultural care and protecting trees from injury. Nitrogen levels in foliage may increase when eucalyptus is stressed. Increased foliar nitrogen increases reproduction and survival of psyllids.

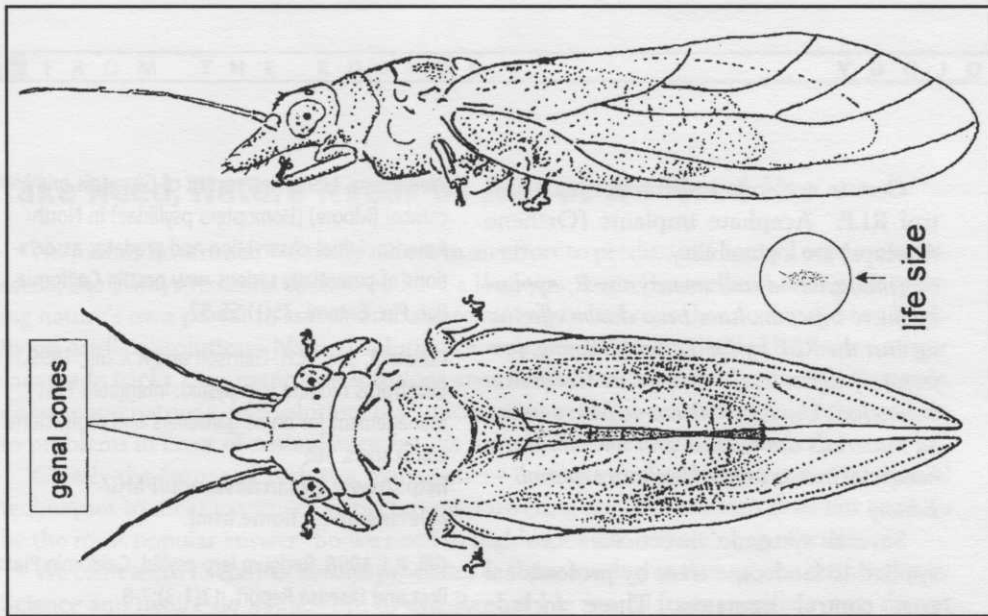
To minimize stress, consider providing trees with supplemental water during periods of prolonged drought, such as during summer and fall in much of California when rain is infrequent or nonexistent. Drought stress increases damage to trees from both RLP and eucalyptus longhorned borers. RLP outbreaks may also follow prolonged rain, possibly because excessively wet soil prevents roots from obtaining adequate oxygen, causing small roots to die.

When irrigating trees, apply water beneath the outer canopy, not near trunks. Avoid frequent, shallow watering that is often used for lawns. A general recommendation is to irrigate eucalyptus infrequently (possibly once a month during drought periods) but with sufficient amounts so that the water penetrates deeply into the soil.

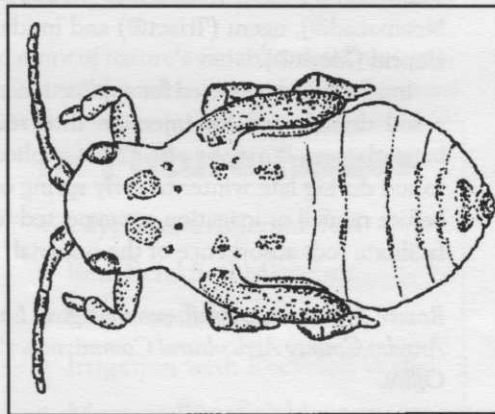
This can be achieved by applying water slowly through drip emitters that run continuously for several days. The specific amount and frequency of water needed varies greatly depending on the site and tree species.



*Larvae are protected from insecticide sprays by lerps, domes made of crystallized honeydew.*



*Redgum lerp psyllid adults (above) are pale green with orange and yellow spots and have genal cones between their antennae. The larvae (right) are yellow or yellow and brown and protect themselves with dome-like lerps.*



Avoid fertilizing eucalyptus. Use slow-release nutrient formulations if other plants near the drip line of eucalyptus require fertilization. Psyllid larvae and egg-laying females prefer the abundant, succulent new shoot growth stimulated by excess nutrients that occur following the application of quick-release fertilizer formulations.

*(Experts recommend that you do not prune branches infested by RLP, especially during the summer. This stimulates new growth which promotes further infestation and can provide entry for the longhorned borer from March to November. — Editor)*

Remember that RLP attacks only certain species of eucalyptus. Some eucalyptus species are avoided by this psyllid. Eggs laid on certain other eucalyptus species are unable to complete their development, so psyllid populations do not build to bothersome levels. The number of eucalyptus species attacked may decrease later if this pest is brought at least partly under biological control.

## Chemical Control

Foliar sprays generally are not recommended, and will most likely not be cost-

effective. It is difficult to spray large urban trees without pesticide drift. The lerp covering may provide psyllid larvae with some protection from contact sprays.

If honeydew becomes intolerable and foliar spraying is used, consider using a mixture of insecticidal soap (potassium salts of fatty acids) and horticultural oil. These low-hazard insecticides can be combined at one-half of the labeled rate or the full labeled rate (commonly 1 to 2% active ingredient each).

Unlike many other insecticides, oil can kill psyllid eggs, in addition to other life stages. Insecticidal soap helps to wash off honeydew and kill psyllids. Thorough foliar coverage is essential, so effective spraying may be limited to smaller trees. Soap or oil applications will likely provide only temporary control, and application may need to be repeated after about two weeks.

Certain systemic insecticides may control RLP. Acephate implants (Orthene Acecaps) are a possibility.

*(Imidacloprid and metasystox-R, applied by micro-injection, have been shown effective against the RLP by Dr. Lester C. Young, professor of agricultural biology at California Polytechnic University, Pomona. Micro-injected materials are labeled and will not harm beneficial insects utilized for future control. — Editor)*

Several systemic insecticides can be applied to landscape trees by professional pest control operators. These include abarnectin (Avid®), azadirachtin (Azatin®, Neemazad®), neem (Triact®) and imidacloprid (Merit®).

Imidacloprid is labeled for application as a soil drench and for injection into soil beneath trees. It may be effective if applied to soil during late winter to early spring or before rainfall or irrigation are expected to facilitate root absorbence of the material.

*Rosser Garrison is staff entomologist, Los Angeles County Agricultural Commissioner's Office.*

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