

Eucalyptus Psyllid, *Blastopsylla occidentalis* Taylor and Red Gum Lerp Psyllid, *Glycaspis brimblecombei* Moore (Insecta: Hemiptera: Psyllidae)¹

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The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

Two psyllids that feed on Eucalyptus were found for the first time in Florida in the spring of 2001 in tourist parks in the Orlando area: *Glycaspis brimblecombei* Moore, the red gum lerp psyllid, and *Blastopsylla occidentalis* Taylor, the eucalyptus psyllid. Both species originate in Australia and already are well established in California, which is the most likely immediate source of the Florida populations.

Distribution

Both *Blastopsylla occidentalis* and *Glycaspis brimblecombei* are native to Australia and occur in California. *B. occidentalis* has been found in Mexico and New Zealand (Taylor 1985; Hodkinson 1991; Gill 1998; Brennan and Gill 1999). *Glycaspis brimblecombei* has a wide distribution in East Central Australia and frequently occurs together with other members of the genus (Moore 1975).

Description

G. brimblecombei and *B. occidentalis* are the only psyllids known to feed on Eucalyptus in Florida. Infestations of *Glycaspis brimblecombei* are most easily recognized by the conical white coverings (lerps) secreted by the nymphs. The psyllid nymphs are reddish bronze with darker wing pads that have bright white spots. Adults are yellow to green in color and are winged and highly mobile. The anterior part of the head of the adults has a pair of curious long projections called genae. *Blastopsylla occidentalis* does not make lerps, but nymphs of these insects do secrete a waxy substance. Adults are smaller than those of *G. brimblecombei*, and the genae are much shorter.



Figure 1. Nymphs and adult of *G. brimblecombei* Moore, a psyllid pest of *Eucalyptus* spp.

Credits: Jeffrey Lotz, DPI-FDACS

1. This document is EENY-306 (originally published as DPI Entomology Circular 407), one of a series of the Entomology and Nematology Department, UF/IFAS Extension. Original publication date October 2003. Revised February 2008 and March 2021. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication. This document is also available on the Featured Creatures website at <http://entnemdept.ifas.ufl.edu/creatures/>.
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Figure 2. Adult *Blastopsylla occidentalis* Taylor, a psyllid pest of *Eucalyptus* spp.

Credits: Raymond Gill, California Department of Agriculture

Life History

Both psyllids are obscure species in Australia, and little is known about their life histories. Clark and Dallwitz (1974) published seasonal abundance information about *Glycaspis* spp. Information on several *Glycaspis* species was pooled because they were unable to distinguish the nymphs. The main factors regulating the population appeared to be the suitability of host material. The trees have a two-year fruiting cycle, and the stage of that cycle greatly influenced the numbers of *Glycaspis*.

Other factors affecting abundance included fruit production (unfavorable), damage by leaf beetles (unfavorable), soil moisture (moist conditions favorable), and drought in the previous season (favorable). The psyllids were most abundant in the fall and winter months, and higher temperatures during that time were favorable to *Glycaspis* abundance. It was noted that *Eucalyptus* trees in an urban area had higher populations than similar trees in a natural setting. Several reasons were cited, including the fact that the urban trees were irrigated during the hot part of the year. Secondly, the urban trees had sustained heavy damage due to leaf-feeding beetles and consequently had produced little fruit compared with their counterparts in the natural setting.

Glycaspis brimblecombei is more damaging than other eucalyptus psyllids introduced into North America because it can defoliate the trees, and it has a relatively broad host range among *Eucalyptus* spp. (Brennan and Gill 1999).

Virtually nothing is known about the life history of *B. occidentalis*. It is reported to damage *Eucalyptus* in New Zealand (Satchell 1999).

Hosts

Brennan and Gill (1999) list the following *Eucalyptus* species as hosts of *G. brimblecombei* from literature:

E. blakelyi Maiden

E. brassiana Blake

E. bridgesiana Baker

E. camaldulensis Dehnh.

E. camphora Baker

E. dealbata Cunn. Ex Schauer

E. mannifera ssp. Maculosa Baker

E. nitens Deane & Maiden

E. teriticornis Smith.

In California, *G. brimblecombei* also has been found on: *E. diversicolor* F. Muell

E. globulus Labill

E. sideroxylon Cunn (Brennan and Gill 1999).

Taylor (1985) lists the following hosts for *B. occidentalis* in the original description: *E. microtheca* F. Muell.

E. rudis Endl.

E. gomphocephala DC.

E. camaldulensis Dehnh.

E. ? platypus Hook.

E. oleosa F. Muell.

E. forrestiana Diels.

E. ? microneura Maiden & Blakely

E. nicholii Maiden & Blakely

E. spathulata Hook.

The specimens from *E. spathulata* came from California. In South America, *B. occidentalis* is reported from *E. urophylla* S.T. Blake and hybrids of *E. urophylla* and *E. grandis* A.W. Hill ex Maiden.

Survey and Detection

The easiest way to survey for *G. brimblecombei* is to examine both old and new leaves for lerps. Frequently, infested trees are obviously dripping with honeydew and old lerps. Survey for *B. occidentalis* by checking new growth for fuzzy flocculent secretions.

Key to Psyllids Found on Eucalyptus in North America

The following literature, was used in constructing the key: Burckhardt et al. (1999), Gill (2000), Morgan (1984), Taylor (1985, 1987, 1990), and Tuthill and Taylor (1955).

1. Metacoxae of adults without meracanthi (large spines) 2

1'. Metacoxae of adults with meracanthi (*Ctenarytaina*) (CA) 5

2. Genal cones long, 0.8 x length of vertex or longer; forewings apically angulate, lerps present, (CA, FL) *Glycaspis brimblecombei*

2'. Genal cones shorter, less than 0.7 x length of vertex, forewings rounded apically 3

3. Proximal (basal) segment of metatarsus with two black spines 4

3'. Proximal (basal) segment of metatarsus with one black spine (CA, FL) *Blastopsylla occidentalis*

4. Ratio of metatibia length to metafemur length 1.5 or greater; lerps present (CA) *Eucalyptolyma maideni*

4'. Ratio of metatibia length to metafemur length 1.0 or less, male parameres with a dorsal row of peg-like, black spines along margin (CA) *Cryptoneossa triangulara*

5. Male proctiger with a row of simple setae at apex of basal segment, stout spine lacking, dull grey, brown (CA) *Ct. longicauda*

5b. Male proctiger with a stout spine or peg at ventral apices of basal segment 6

6. Male proctiger with apical segment elongate, 2/3 or greater the length of basal segment; parameres elongate and broad, each as broad as proctiger in lateral view at widest points; head and thorax dorsally yellowish with brown spots (CA) *Ct. spatulata*

6'. Male proctiger with apical segment 0.5 times or less the length of the basal segment; parameres 2/3 or less the width of the proctiger at widest points; head and thorax dorsally dark brown to black (CA) *Ct. eucalypti*

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