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# Eugenia psyllid, *Trioza eugeniae* Froggatt (Homoptera: Psyllidae)[1]

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**INTRODUCTION:** The eugenia psyllid, *Trioza eugeniae* Froggatt, is a native of Australia where it is called "pimple psyllid." In Australia, *T. eugeniae* is not a problem and attracts little or no attention (Richard Tesson, personal communication). In May 1988, eugenia psyllid was discovered in California (Downer *et al* 1991) where, in certain areas, it has become a pest of the Australian brush cherry, *Syzygium paniculatum* Gaertn. (=*Eugenia myrtifolia* Sims; *Eugenia compacta* Hort.). In California, the eugenia psyllid is primarily a problem of dooryard Australian brush cherry. Routine pruning and pesticide applications keep the psyllid population low in nurseries. Small numbers of eugenia psyllid were discovered in 1993 by Division of Plant Industry personnel in two Florida nurseries on Australian brush cherry. The populations were eradicated and no colonies of this psyllid seem to be currently present in Florida. Australian brush cherry (called bush cherry in California) has bright green, glossy foliage and is valuable in California for hedges, topiaries, arbors, and green walls up to 30 feet high. Several southern Florida nurseries offer it for sale although its use has been limited.

**TAXONOMY:** For those recognizing Psyllidae as Superfamily Psylloidea, *Trioza eugeniae* falls under Family Triozidae. Froggatt (1901) did much of the pioneering work on Australian psyllids. Heslop-Harrison (1949) reviewed the literature and classification of Australian, New Zealand, and Tasmanian psyllids and provided a checklist. Tuthill and Taylor (1955) published the Australian genera of the family Psyllidae and found only four species referrable to *Trioza*, including *T. eugeniae* Froggatt. Crawford (1915) used the name *Trioza eugeniae* for a new species he described from Philippine specimens. Hodkinson (1983) listed Crawford's species as a synonym of *Trioza vitiensis* Kirkaldy (1907) which is not known from the Australia-New Zealand area.

**IDENTIFICATION:** The adult (Figs. 1-2) is chocolate brown, 2mm long, and membranous winged. Mature nymphs have the typical triozine character of being completely ringed with white wax filaments.

For a complete description of this species see Froggatt (1901). Some of the generic features of *Trioza* include: head more or less deflexed, narrower than thorax; genae produced, usually as conical processes and at least moderately long (usually 1/2 as long as vertex or longer); thorax strongly arched; forewings membranous, typically angulate apically, sometimes narrowly rounded; radius, media, and cubitus arising from basal vein at same point; legs slender, hind tibiae with 2 or 3 black spines at apex on inner side, and 1 outside.

**HOSTS:** *Trioza eugeniae* has an extremely narrow host range. *Syzygium paniculatum* seems to be the principal host. Morgan (1984) listed *T. eugeniae* as widespread on *S. paniculatum* in South Australia. Eggs and first instar nymphs have been observed by Downer *et al* (1991) on juvenile foliage of New Zealand Christmas tree. Several species of *Metrosideros* (Myrtaceae) are called New Zealand Christmas tree. These psyllids did not form pit galls on New Zealand Christmas tree nor cycle through to adults. Froggatt (1901) reported the host as the lilly pilly, *Eugenia smithii* Poir., now *Acmena smithii* (Poir.) Merrill & Perry.

**BIONOMICS:** The eugenia psyllid is both frost and heat sensitive. When temperatures reached 90° F. or more, populations dropped dramatically in California. There seems to be aestivation during summertime. The psyllid does much better in the cool mild weather of fall through spring, and does best in the cool coastal climate [Richard Tesson, personal communication, and Downer *et al* (1991)]. Froggatt (1901) observed that the nymphs attach themselves to the young, unexpanded foliage of the host and then puncture the leaf surface with their sharp beaks which causes blisters

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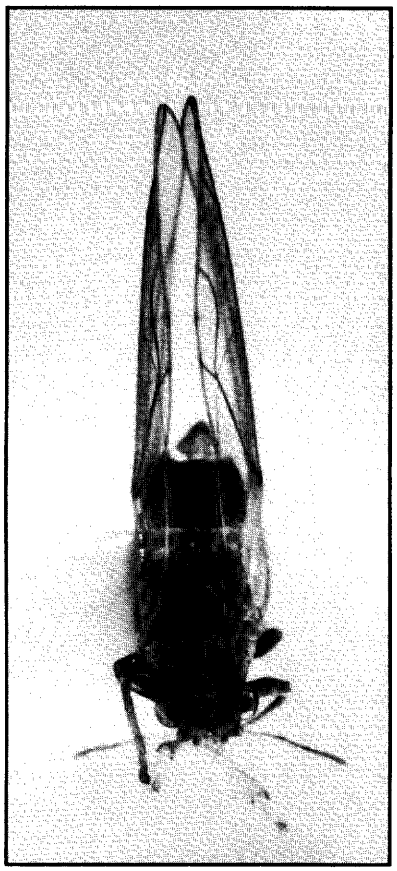

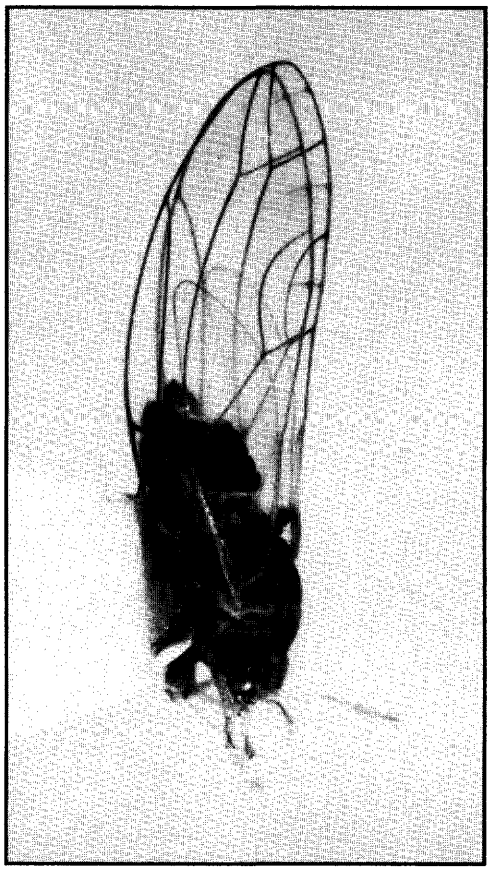

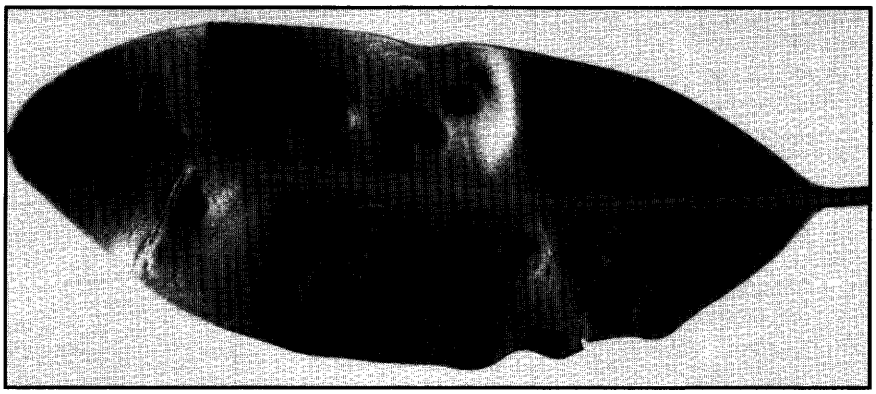

**Figs. 1 - 3.** ***Trioza eugeniae*** Froggatt. 1) Adult, dorsal view; 2) Adult, lateral view; 3) Leaf of Australian brush cherry, ***Syzygium paniculatum***, showing pit galls caused by *T. eugeniae*. Photography credit: Jeffrey W. Lotz (DPI #93039)

to form. The nymphs lie in the hollow thus formed. The surface of the immature is level with the surface of the leaf. He further noted that badly infested foliage of the food plant "*Eugenia Smithii*" became much discolored, tainted with reds and yellows, and twisted, corrugated and aborted.

Downer *et al* (1991) found that the average number of eggs laid by all psyllid females under study was 119. When female psyllids were sequestered on a single plant, each laid an average of only 86 eggs. Outdoors, eugenia psyllids reproduced the year around in coastal California.

**CONTROL**: Downer *et al* (1991) tested 10 different formulations for control of *T. eugeniae* in California. For pesticide control recommendations, consult the local county extension agent. Control in nurseries consists of routine pruning and pesticide application, followed by prompt disposal of clippings. Young shoots are necessary for psyllid reproduction on unexpanded plant tissue. Downer *et al* (1991) found that dramatic adult population decreases were observed only when all shoots on a hedge were pruned, followed by pesticide application.

Biocontrol in California has involved the release of the parasitoid *Tamarixia* sp. (Hymenoptera: Eulophidae) (Timothy D. Paine, personal communication). This parasitoid has drastically reduced psyllid populations in the release areas; it has been collected as far as 50-60 miles from the nearest introduction sites; and has been moved around on nursery stock. Boucek (1988) and others have published on the taxonomy of *Tamarixia*.

**SURVEY METHODS:** Look for blisters and pits on leaves of *S. paniculatum* (Fig. 3). Pits may be filled with psyllid nymphs or may be empty. On the upper leaf surface, the pit will extend like a small blister; however, on the lower surface the nymph will be flush with the surface and exposed to the air. Larger nymphs are yellowish with red eye spots and have a regular marginal fringe of white wax filaments encircling the entire head and body (Fig. 4).

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**Fig. 4.** *Trioza eugeniae* Froggatt. Mature nymph on leaf of *Syzygium paniculatum*.

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