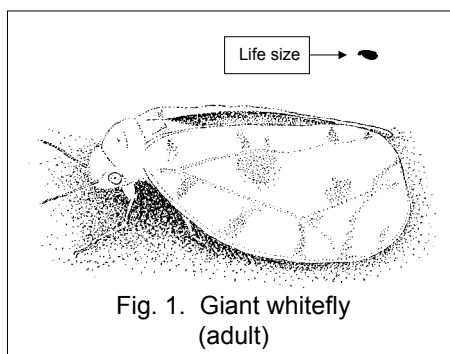


LOS ANGELES COUNTY

AGRICULTURAL COMMISSIONER'S OFFICE

New Agricultural Pest for Southern California

Giant Whitefly (*Aleurodicus dugesii*)



Economic Importance: Giant Whitefly (GWF) is a serious pest of certain ornamental and yard plantings. Its favorite hosts include hibiscus and xylosma but there are more than 68 recorded hosts including *Anoda*, mulberry, begonias, Ivy, Jasmine, banana, Bird of Paradise, Philodendron, Pittosporum, palm, morning glory and *Ficus nitida*. It has since spread to agricultural crops such as citrus, apricot, plum and avocado. The sessile, round, larvae are affixed to the underside of host leaves where they remove plant sap during feeding. GWF has a small

rear flipper which flicks droplets of honeydew excreted by the larva. When populations are large (up to hundreds per leaf), copious amounts of sticky honeydew gather on other vegetative parts, which encourages a black sooty mold to grow, thus inhibiting the photosynthetic process necessary for the plant's survival.

Distribution: GWF was originally described in 1896 from specimens collected in Guanajuato, Mexico. It is known from Oaxaca and Guadalajara states in central and southern Mexico. It was first detected in the La Mesa area of San Diego County by San Diego County Entomologist, David Kellum, on 15 October 1992. It has since spread throughout coastal San Diego County (where it is a pest of certain ornamental trees and shrubs within the San Diego Zoo), Orange County and, on 13 November 1995, was detected for the first time in Los Angeles County. A home owner brought in to the Los Angeles Agricultural Commissioner's Office a heavily infested sample of hibiscus from the residents back yard in North Hollywood. A second infestation on Chalice-vine (*Solandra hartwegii*) was discovered in the same area on 13 December 1995. It has since spread to other areas in the Hollywood Hills, Echo Park, and northeast Pasadena. Heavy infestations of GWF can now be found throughout coastal Los Angeles County.



Fig. 2. Giant whitefly adult

Comments: The Biological control division of the California Department of Food and Agriculture (CDFA) in cooperation with the San Diego Department of Agriculture has initiated a biological control program in hopes of controlling GWF. A Eulophid parasitic wasp, *Entedononecremnus*

krauteri, and a ladybird beetle, *Delphastus catalinae* have been released in San Diego County. The small recently described wasp was discovered attacking GWF in Comfort, Texas in October, 1995. *Entedononecremnus krauteri* is specific to certain whiteflies. The small female wasp deposits an egg into the immature GWF by stinging. The wasp larva slowly consumes and kills the developing GWF.



Fig. 3. Larvae of Giant whitefly showing the bearded appearance typical of this species

In August, 1997, researchers at the University of California, Riverside released of two small parasitic wasps (*Encarsiella noyesii* and *Idioporus affinis*—originally from Guadalajara, Mexico) into areas of Southern California infested with GWF. Previous exploration to that part of Mexico showed GWF to be rare. They noted that up to 80 % of the larvae were parasitized. Although UC researchers hoped that these insects would similarly depress numbers of GWF in Southern California control of GWS below damaging levels has not yet been realized.

Identification: Although adult whiteflies are normally difficult to identify in the field, GWF is unique because of its extraordinarily large size (about 5 mm long) and distinctively patterned wings (Fig. 1, 2). They are white with light mosaic patterns of gray.

The sessile, rounded larvae produce copious amounts of waxy filaments which are unlike anything produced by any other species of whitefly in our area (Fig. 3). During heavy infestations, undersides of leaves of hibiscus have the appearance of long (about 1.5 cm), thin, white fur.

Life History: GWF undergoes an incomplete metamorphosis, which includes an egg, first stage crawler, 3 sessile larval stages, and adult. The sessile larval stage is often termed the pupa, but this term is incorrect, because it is not a resting stage. Generation time for GWF is unknown, but is probably similar to that of other whiteflies, about 20 days.

Control: Chemical control of most whitefly populations is usually a stop-gap measure. Populations often recover quickly and heavy dosages of pesticides may have an adverse affect on any natural enemies of the target pest.

University of California Entomologists have learned that adult GWF rarely move from the plants or leaves from which they were born. Adults have exceedingly long stylets which remain in the plant tissue when GWF is forced or blown from their leaves. Thus adults will often cluster in large colonies on a plant. These aggregations can usually be removed by selective pruning. Clusters of infested foliage can be bagged and removed for disposal. Do not leave infested prunings exposed since the whiteflies will then have the opportunity to disperse to other plants.

A strong jet of water applied to the remaining areas of infestation will further aid in knocking down populations of GWF. Forceful spraying must be aimed at the underside of the leaves where larvae of GWF are present.

One systemic insecticide has recently become available for home use. **Bayer® Advanced Garden Tree and Shrub Insect Control Concentrate** contains a 1.47% of the active ingredient Imidacloprid. According to the label, this soil drench pesticide provides 12-month insect protection from sucking insects such as aphids, psyllids, whiteflies and others. The pesticide may take from one week to three months to control these target pests depending on the size and health of the tree or shrub.

Warning on the Use of Chemicals: Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property being treated. Avoid drift onto neighboring properties, especially gardens containing fruits and/or vegetables ready to be picked.

Dispose of empty containers carefully. Follow label instructions for disposal. Never reuse containers. Make sure empty containers are not accessible to children or animals. Never dispose of containers where they may contaminate water supplies or natural waterways. Do not pour down sink or toilet. Consult your county agricultural commissioner for correct ways of disposing of excess pesticides. Never burn pesticide containers.

We appreciate the comments of Dr. David Kellum, Entomologist, San Diego Agricultural Commissioner's Office, Nick Nisson, Entomologist, Orange County Agricultural Commissioner's Office, and John Kabashima, University of California Cooperative Extension Service, Orange/Los Angeles Counties.

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