



Figure 1. Cycad plant being killed by an infestation of cycad scale.

Introduction. The Asian cycad scale, *Aulacaspis yasumatsui*, also known as the sago palm scale, was first detected on Guam in the Tumon hotel district during the last quarter of 2003. Several sago palms, *Cycas revoluta*, and endemic cycads (fadang), *Cycas micronesica* were heavily infested. The scale was identified by Thomas Watanabe of the USDA-APHIS in Honolulu from samples of infested fronds collected on Guam.

The Asian cycad scale is native to Thailand and southern China. It was accidentally introduced into Florida through the legal importation of cycads by a botanical garden (McLaughlin 1998). The scale may also have been introduced into Hawaii from Florida in 1998. It is likely that *A. yasumatsui* arrived on Guam on cycads imported from Hawaii.

The cycad scale has become a major pest throughout Guam, attacking cycads used for landscaping and the endemic *Cycas micronesica* which is a major component of Guam's flora. The leaves of infested cycads have a whitewashed appearance (Fig. 1). Continuous feeding by large numbers of scales removes sap from the leaves and they turn brown. If left untreated, infested cycads usually die within one year.

Asian Cycad Scale

Aulacaspis yasumatsui Takagi

(Homoptera: Diaspididae)

Aubrey Moore, Ilene Iriarte, and Roland Quitugua

Description. The cycad scale is a tiny insect which belongs to Diaspididae, the family of armored scale insects. These sedentary insects feed by sucking sap out of plants. As the name suggests, the cycad scale feeds only on cycads.

Infestations start on the undersides of cycad leaflets (Fig. 2), spreading rapidly to the upper surfaces of the leaflets, the trunk, and all other external parts of the plant including the roots. Severely infested cycads look as if they have been sprayed with white paint. Upon closer examination, you will see that the plant is covered with large numbers of scales covered by a white waxy secretion (Fig. 3). Mature females are circular with a diameter of about 1/16 inch. Immature males, which usually outnumber the females, are much smaller and elongate, looking like miniature grains of rice. You may also see adult males, which are orange-brown and are similar in appearance to tiny flying midges with one pair of wings and well-developed legs and antennae.

Females lay eggs under their waxy covers. Active crawlers, which are almost microscopic, hatch from these eggs. Crawlers are dispersed by the wind and may infest plants more than a mile away. Crawlers may also

disperse by hitch-hiking on animals, clothing, or vehicles.



Figure 2. Close up of Asian cycad scales.



Figure 3. Extreme close-up of Asian cycad scales, showing mature females, immature males, and crawlers.

Control Recommendations. Cut off all severely infested leaves and dispose of them immediately by burning or burial to prevent crawlers from being dispersed to other plants by the wind. Do not transport infested leaves in an open vehicle.

You will need to protect your plant from reinfestation as new foliage emerges. The Asian cycad scale can be controlled with weekly application of light horticultural oil such as Ultra-Fine Oil. For a longer-lasting treatment, apply a systemic insecticide such as those containing acephate (Ortho Systemic Insect Killer). Professional pest managers have had excellent success with the insect

growth regulator, pyriproxyfen, sold as Distance IGR. However, this product is too expensive for most home-owners.

Insecticidal control may provide a short-term solution for protecting landscaping plants, but this is probably not an option for protecting wild cycads.

Natural enemies. It may be possible to achieve sustainable control of cycad scale on Guam by introduction of biocontrol agents which target this pest.

In Hawaii, *A. yasumatsui* populations are controlled to some extent by a tiny black lady beetle, *Rhyzobius lophanthae*, which was introduced in 1894 as a biological control agent for other scales insects. There were two unsuccessful attempts to introduce *R. lophanthae* into the Mariana Islands in 1925 and 1926. Laboratory colonies of this beetle were established at the University of Guam from adults collected on Maui in 2005. *R. lophanthae* is being released on Guam and is already numerous at two release sites. However, this biocontrol agent may not eat enough scales to prevent cycad mortality during the severe infestation we are currently experiencing. University of Guam entomologists are planning to import and release additional biocontrol agents to mitigate damage to wild endemic cycads, *Cycas micronesica*.

References

Anonymous 2005. Asian cycad scale emergency control suggestions. http://www.plantapalm.com/centralff/emergency_care.htm

Broome, Tom 2005. The Asian cycad scale. <http://www.plantapalm.com/vce/horticulture/asiancycadscale.htm>

Heu, Ronald A., Marianne Chun, and Walter T. Nagamine 2003. Sago palm scale *Aulacaspis yasumatsui* Takagi (Homoptera: Diaspididae). <http://www.hawaiiag.org/hdoa/npa/npa99-01-spalmyscale2.pdf>

McLaughlin, M. 1998. What's this white stuff on my cycad? Fairchild Tropical Garden. http://www.ftg.org/horticulture/n_cycadscale.html