



Fiorinia phantasma Cockerell & Robinson (Hemiptera: Diaspididae)

An armored scale, *Fiorinia phantasma* Cockerell & Robinson (Hemiptera: Diaspididae), was first collected from *Ligustrum japonicum* (wax leaf privet) leaves on O'ahu, in December 2004. The second infestation was found in November 2008, on *Pittosporum tobira* (pittosporum). Subsequently, *F. phantasma* has become a significant new pest to ornamental plants in Hawai'i.

Hosts

F. phantasma has been found infesting a wide range of host plants throughout O'ahu, most commonly in the family Arecaceae (coconut, manila, areca, foxtail, and bottle palms). In addition to the aforementioned hosts, *F. phantasma* has been collected from the following ornamental plant species in Hawai'i: kamani (*Calophyllum inophyllum*, Clusiaceae); shower tree (*Cassia* sp., Fabaceae); lobster claw (*Heliconia caribaea*, Heliconiaceae); weeping fig (*Ficus benjamina*, Moraceae); naio (*Myoporum sandwicense*, Myoporaceae); Madagascar olive (*Noronhia emarginata*, Oleaceae); hala (*Pandanus tectorius*, Pandanaceae); mock orange (*Murraya paniculata*, Rutaceae); traveler's palm (*Ravenala madagascariensis*, Strelitziaceae). Robinson in Veilleux et al. (2010) notes that *Machilus* sp. (Lauraceae) is also a host plant of this species.

Description

Adult females (Figure 3 inset) inconsistently show red stripes, running the width of the scale covering. Some populations have a variation of clear, red-striped, and full red scale coverings. *F. phantasma* is closely related to *F. fioriniae*, a similar looking scale that has been a pest of palms and protea in Hawai'i for many years. Species in the genus *Fiorinia* are unique in that females shrink in size, encased in their second shed skin (Miller & Davidson, 2005).

Damage & Control

Damage caused by *F. phantasma* is recognizable by the yellow blotches on the upper leaf surfaces of host plants. As the scale population increases, intense feeding damage to the leaf causes leaf drop.



Figure 1. Damage to upper leaf surface of areca palm.



Figure 2. Infestation on the underside of areca palm leaf.

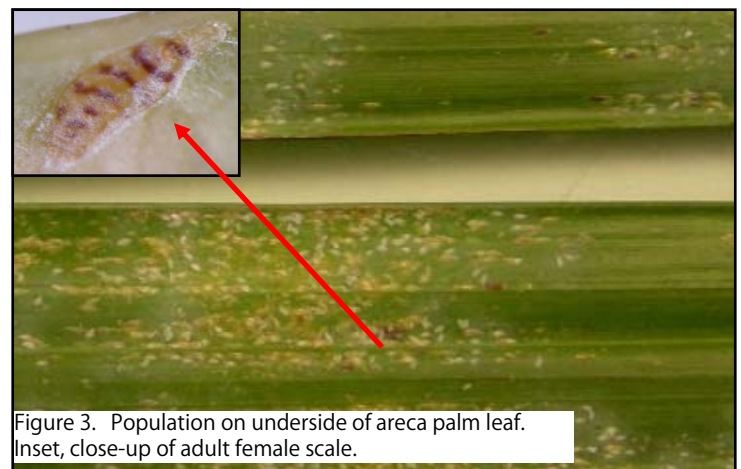


Figure 3. Population on underside of areca palm leaf.
Inset, close-up of adult female scale.



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Several predatory ladybeetles, green lacewing larvae, and one tiny species of parasitic wasp, were found associated with *F. phantasma*, however, the percentage of scales preyed upon or parasitized were extremely low. Horticultural oil has been used with closely related scale species, and should be effective against the crawler stage of *F. phantasma*. Systemic insecticides, including dinotefuran, and insect growth regulators, such as pyriproxyfen and/or buprofezin has also been proven to work with other similar scale pests, and may be effective against *F. phantasma*.

Distribution

Previously, this species has only been recorded in the Philippines (Veilleux et al., 2010). The discovery of *F. phantasma* in Hawai'i represents the first Western Hemisphere record (D. Miller, pers. comm.). It is now distributed throughout the island of O'ahu, and has been found infesting landscape areca palms in the Kihei/Wailea area, Maui, in September 2011.

F. phantasma is not only a major pest to ornamental and landscape plants, it also impacts the local nursery and landscape industry. It poses an additional quarantine problem for exporters, because this species is not recorded anywhere other than Hawai'i and the Philippines.

Acknowledgments

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Reference

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Veilleux, K., Miller, D.R. and Gimpel, M.E. 2010. ScaleNet, *Fiorinia phantasma*. 8 December 2010. http://www.sel.barc.usda.gov/catalogs/diaspidi/Fioriniaphantasma.htm#Fioriniaphantasma_distrib.



Figure 4. Upper leaf surface of *P. tobira* leaves showing *F. phantasma* damage.



Figure 5. Infestation on underside of *P. tobira* leaf.