EENY465

UF UNIVERSITY of FLORIDA
IFAS Extension

Palmetto scale *Comstockiella sabalis* Comstock[1]

Adrianna Espinosa, Amanda Hodges and Greg Hodges[2]

Introduction

The palmetto scale, *Comstockiella sabalis* Comstock, is probably native to the southern United States, and is not normally a significant pest as long as appropriate parasitoids are present. When palmetto scale arrived in Bermuda as an invasive species in the 1920s, parasitoids were not present and severe damage as well as tree death occurred for a native palm species, Bermuda palmetto, *Sabal bermudana*. Management of palmetto scale was achieved by introducing parasitized palmetto scales from Florida to populations on heavily infested Bermuda host plants. The identity of the parasitoids was not confirmed at the time (Evans and Pedata 1997).

Distribution

Palmetto scale is distributed throughout the southern United States, Mexico, the Caribbean, and may be found in greenhouses on appropriate host plant material in more temperate regions (Evans and Pedata 1997, Miller and Gimpel 2009).

Figure 1. Adult female palmetto scale, *Comstockiella sabalis* Comstock, with exuviae, or shed skin, present. Credits: Avas Hamon, FDACS-Division of Plant Industry

Description

Females are light pink to reddish brown, have an almost circular but irregular shape; and are between 0.039 - 0.059 inches (1-1.5 mm) in diameter. Their exuviae or shed skin is white, covered with yellow wax, and is slightly off-center to the body of the scale. Eggs are light pink or cream. The male puparia is light pink or cream in color, wingless, very similar to the female but it is smaller and more elongated. Similar to other male scales, adults (if known to be

1. This document is EENY-465, one of the Featured Creatures series of the Entomology and Nematology Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Published: November 2009. This document is also available on Featured Creatures Web site at **http://entomology.ifas.ufl.edu/creatures**. Please visit the EDIS Web site at **http://edis.ifas.ufl.edu**. Additional information on these organisms, including many color photographs, is available at the Entomology and Nematology Department Web site at **http://entnemdept.ifas.ufl.edu/**.

2. Adriana Espinosa, Amanda Hodges, SPDN assistant director in entomology and training/education, Department of Entomology and Nematology, Gainesville, FL, Greg Hodges, Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Gainesville, FL.

present) are winged, rarely seen, and short-lived (Comstock 1883, Dekle 1965, Ferris 1938, Miller and Davidson 2005).

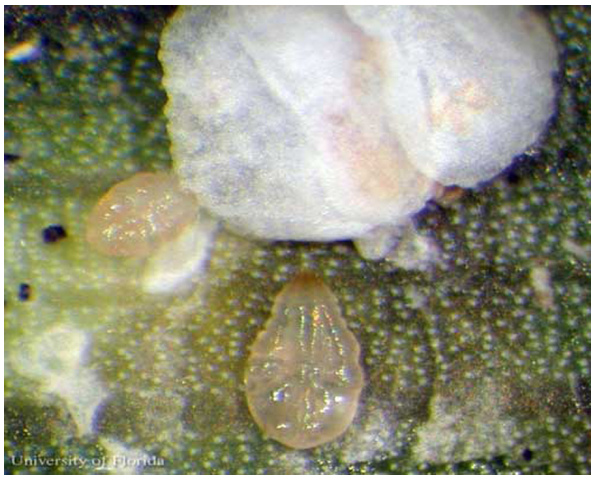

Figure 2. Light-colored pink to red body of the adult female palmetto scale, *Comstockiella sabalis* Comstock. The oval exuviae, or shed skin, has been removed. Credits: Avas Hamon, FDACS-Division of Plant Industry

Figure 3. Adult female palmetto scale, *Comstockiella sabalis* Comstock, with exuviae, or shed skin, present. Credits: Avas Hamon, FDACS-Division of Plant Industry

Life Cycle

Details specific to the palmetto life cycle are unknown, but it is reportedly often associated with a fungus (Miller and Davidson 2005).

Hosts

Palmetto palm is fairly host-specific, and reported damage has focused on palms. An exception to its palm-focused host range includes reported infestation of globe daisy (*Globularia salicina*, family Globulariaceae) (Miller and Gimpel 2009).

Figure 4. Light pink to cream eggs of the palmetto scale, *Comstockiella sabalis* Comstock. Credits: Avas Hamon, FDACS-Division of Plant Industry

Reported palm (family Palmae) hosts include the following:

- *Cocos* spp. coconut palm
- *Erythea* spp.. Mexican blue palm, San Jose hesper palm
- *Sabal* spp., cabbage palm or sabal palm, dwarf palmetto
- *Serenoa* repens, saw palmetto
- *Washingtonia robusta*, Mexican fan palm

General Plant Damage

Palmetto scale is commonly found on leaves of its hosts, but may be found on the trunk or the fruit particularly with high infestations. Feeding damage is evident as yellow leaf splotches or an appearance of chlorosis (Miller and Davidson 2005).

Management

Evans and Pedato (1997) described a new species *Coccobius donatellae* Pedata and Evans (Hymenoptera: Aphelinidae) as the primary parasitoid of palmetto scale. Originally, literature mentioned two species as responsible for controlling palmetto scale in Bermuda, "*Physcus* sp." and *Encarsia portoricensis*. Based on surveys of parasitoids in Bermuda, Evans and Pedato (1997) suggest that these species were misidentified as the female and male specimens of *C. donatellae*.

Figure 5. Damage on palm leaf due to feeding by the palmetto scale, *Comstockiella sabalis* Comstock, evident as yellow leaf splotches or an appearance of chlorosis. Credits: U.S. National Collection of Scale Insects Photographs Archive, USDA, www.insectimages.org

Figure 6. Infestion of palmetto scale, *Comstockiella sabalis* Comstock, showing advanced feeding damage on palmetto, *Sabel* spp. Credits: U.S. National Collection of Scale Insects Photographs Archive, USDA, www.insectimages.org

Although C. *donatellae* in believed to be the primary parasitoid of palmetto scale, other Aphelinidae parasitoids confirmed in Florida include *Aphytis fuscipennis* Howard and *Encarsia citrina* (Craw).

Selected References

Comstock JH. 1883. Second report on scale insects, including a monograph of the sub-family Diaspinae of the family Coccidae and a list, with notes of the other species of scale insects found in North America. Department of Entomology Report, Cornell University Agricultural Experiment Station 2: 47-142.

Dekle GW. 1965. Arthropods of Florida and Neighboring Land Ares: Florida Armored Scale Insects. Vol. 3. Florida Department of Agriculture, Division of Plant Industry. Gainesville, FL.

Evans GA, Pedata PA. (1997). Parasitoids of *Comstockiella sabalis* (Homoptera: Diaspididae) in Florida and description of a new species of the genus *Coccobius* (Hymenoptera: Aphelinidae). *Florida Entomologist*, 80: 328-334. http://www.fcla.edu/FlaEnt/fe80p328.pdf (18 September 2009).

Ferris GF. 1938. Atlas of the scale insects of North America. Series 2. Stanford University Press, Palo Alto, California.

Miller DR, Davidson JA. 2005. Armored Scale Insect Pests of Trees and Shrubs (Hemiptera:Diaspididae). Cornell University Press. Ithaca, NY. 456 pages.

Miller DR, Gimpel ME. (April 2009). Diaspididae: Diaspidinae and Leucaspidinae. ScaleNet. http://www.sel.barc.usda.gov/scalenet/scalent.htm (18 September 2009).