

Hypogeococcus pungens Granara de Willink (Insecta: Hemiptera: Pseudococcidae), a Mealybug¹

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Introduction

Hypogeococcus pungens is native to South America and was described by Granara de Willink (1981). A previous description by Williams (1973) classified *Hypogeococcus pungens* incorrectly as *Hypogeococcus festerianus* (Lizer y Trelles), and this confusion resulted in numerous publications listing *Hypogeococcus pungens* as *Hypogeococcus festerianus*. Little biological information is available for either species, but much of the available literature for *Hypogeococcus festerianus* actually is *Hypogeococcus pungens* information.



Figure 1. Infestation of the mealybug, *Hypogeococcus pungens* Granara de Willink.

Credits: Lyle J. Buss, University of Florida

Field specimens of *Hypogeococcus pungens* are sometimes confused with the [pink hibiscus mealybug](#), *Maconellia coccis hirsutus* (Green), but the potential hosts of *Hypogeococcus pungens* are more restrictive. The only other species of *Hypogeococcus* that occurs in Florida is the native *Hypogeococcus margaretae* Miller. The only known host for *Hypogeococcus margaretae* is the hatpin plant, *Eriocaulon decangulare*, and it has only been reported from St. Lucie and Indian River Counties in Florida.

Synonymy

A related species, *Hypogeococcus festerianus* is a valid species, but *Hypogeococcus pungens* has been misidentified as *Hypogeococcus festerianus* in the following publications: Hamon (1984), McFadyen and Tomley (1981), Suss and Trematerra (1986), and Williams (1973).

Details of these misidentifications are available on [ScaleNet](#) with a *Hypogeococcus pungens* valid name query.

Distribution

This mealybug has been reported from Australia, South America, the Caribbean, Europe, and North America. The Australian populations are the result of introduction for the biological control of cacti. Reports of *Hypogeococcus pungens* in the US include Florida (1984) and Hawaii (2005).

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Identification Characteristics

Adult females are approximately 3 mm long (0.12 inches), produce a reddish body fluid when pierced, and lack both lateral filaments and an ovisac. *Hypogeococcus pungens* produce large amounts of wax and often form feeding clusters at nodal regions of host plants. The body shape is oval to round, and more round than other pinkish-colored mealybugs (Hodges et. al. 2008).

In Florida, heavy infestations of pink-colored mealybugs on *Portulaca* and *Alternanthera* species are frequently identified as *Hypogeococcus pungens*. This species is rarely found on cacti in Florida.



Figure 2. Shown infesting cacti is *Hypogeococcus spinosus* Ferris, which is not established in Florida. This species is related to *Hypogeococcus pungens* Granara de Willink.

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Immature and adult specimens may not be visible until the cottony wax is removed. Clusters of *Hypogeococcus pungens* tend to occur at nodal regions of leaves and stems.

Prior to confirming a diagnosis, scale and mealybug insects (Hemiptera: Coccoidea) generally must be slide-mounted. One of the unique morphological characteristics about *Hypogeococcus pungens* is the presence of three circuli (Miller et. al. 2014, Williams and Willink 1992). The circulus, a structure on the ventral surface of mealybugs, is thought to serve an adhesive function for the insect. *Hypogeococcus festerianus*, the species originally confused with *Hypogeococcus pungens*, has only one circulus. Also, the pink hibiscus mealybug and *H. margaretae* have only one circulus.

More detailed taxonomic diagnosis information is available via the [Scale Insects: Identification tools, images, and diagnostic information for species of quarantine significance](#) provided by the USDA-ARS Systematic Entomology Laboratory.



Figure 3. Late and early instar nymphs of the mealybug *Hypogeococcus pungens* Granara de Willink.

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Figure 4. Adult male (dorsal view) and nymphs of the mealybug *Hypogeococcus pungens* Granara de Willink.

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Figure 5. Lateral view of an adult male of the mealybug *Hypogeococcus pungens* Granara de Willink.

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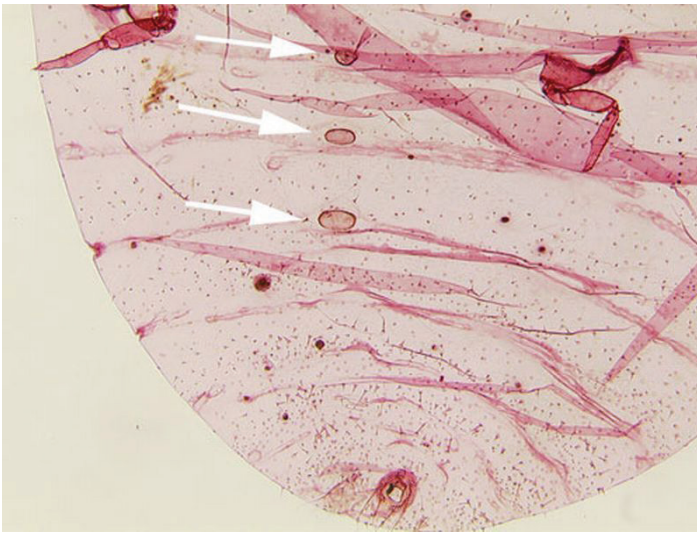


Figure 6. Slide mounted specimen of *Hypogeococcus pungens* Granara de Willink. Arrows pointing to three circuli.
Credits: Greg Hodges, Florida Department of Agriculture and Consumer Services, Division of Plant Industry

Life Cycle

Very little biological or life history information is available specifically for this species. The primary available biological work is Suss and Trematerra (1986). Populations of *Hypogeococcus pungens* were found both on roots and host leaves or stems. Miller et. al. (2014) also report that *Hypogeococcus pungens* has been intercepted on the roots of Cactaceae.

Hosts

In comparison to other mealybug species, the host range for *Hypogeococcus pungens* is fairly limited.

- Amaranthaceae—*Achyranthes aspera* (Devil's horsewhip), *Gomphrena globosa* (globe Amaranth)
- Cactaceae—several species with reported genera including *Cereus*, *Eriocereus*, *Harrisia*, *Hickenia*, *Parodia*
- Polygonaceae—*Alternanthera pungens* (khaki weed), *A. bettzickiana* (joyweed)
- Portulacaceae—*Portulaca oleracea* (purslane, verdo-laga, pigweed, little hogweed, or pusley), *P. quadrifida* (chickenweed)

Economic Importance

Hypogeococcus pungens has a very limited host range and appears to be of little economic significance as a pest. Significant pest populations of *Hypogeococcus pungens* rarely occur in Florida. Although *Hypogeococcus pungens* was reported occurring on Cactaceae in Italy, subsequent surveys have reported reduced populations (Longo 2009). Exceptions to the general non-pest status of *Hypogeococcus pungens* could occur in areas with rare or endemic



Figure 7. Infestation of the mealybug, *Hypogeococcus pungens* Granara de Willink.
Credits: Lyle J. Buss, University of Florida



Figure 8. Infestation of the mealybug, *Hypogeococcus pungens* Granara de Willink.
Credits: Florida Department of Agriculture and Consumer Services, Division of Plant Industry

Cactaceae hosts, particularly those that reproduce primarily by seeds instead of budding.

Due to its fairly limited host range, *Hypogeococcus pungens* was successfully introduced as a biological control agent for the cacti species *Eriocereus bonplandii*, *E. martini*, *E. tortuosus*, and *Acanthocereus pentago* in Australia (McFadyen and Tomley 1981). This species has also been introduced into South Africa for the control of *E. martini* (Moran and Zimmermann 1991). *Hypogeococcus pungens* may be a more effective biological control agent for cacti species that are primarily dependent upon seeds for reproduction. Moran and Zimmerman (1991) noted that the inhibition of flowering and fruiting by *E. martini* due to *Hypogeococcus pungens* limited spread of the pest weed. Although *Hypogeococcus pungens* was a successfully biological control agent for pest weeds in Australia and South Africa, limited natural dispersal abilities of *Hypogeococcus pungens* require constant reintroduction of the mealybug as new infestations of the cacti weed occur.

Management

For high populations of *Hypogeococcus pungens*, it is often important to confirm the identification of your species prior to implementing a management strategy. This species may be confused with other similar mealybugs, and it is particularly important to report and submit unusual damage in terms of pest frequency or host range to your local diagnostic lab.

The following identification resources are available for Florida residents:

- [your local UF/IFAS Extension office](#)
- [UF/IFAS Extension Insect Identification Laboratory](#)
- [UF/IFAS Mealybug website](#)
- [University of Florida Distance Diagnostic and Identification System](#) [October 2011]

For many mealybug species, natural enemies will often effectively manage populations. The [mealybug destroyer](#), *Cryptolaemus montrouzieri*, is commonly found in association with many mealybug species as a generalist predator. Moran and Zimmermann (1991) report the presence of a ladybird beetle, *Exochomus* sp. (Coleoptera: Coccinellidae) feeding on *Hypogeococcus pungens*, but detailed observations on the impact of this species on populations is not provided.

Natural enemy populations will be negatively impacted by any pesticide applications applied to the host for control of *Hypogeococcus pungens* or other species. Mealybug populations may also be controlled by horticultural oil applications, but natural enemy populations may be adversely impacted by this as well.

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