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Source: Florida Entomologist, 90(2) : 392-393

Published By: Florida Entomological Society

URL: https://doi.org/10.1653/0015-4040(2007)90[392:DDHDAN]2.0.CO;2

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DUPLACHIONASPIS DIVERGENS (HEMIPTERA: DIASPIDIDAE), A NEW EXOTIC PEST OF SUGARCANE AND OTHER GRASSES IN FLORIDA

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The grasses (Poaceae) are some of the most important agricultural plants in the world with corn, sugarcane and wheat all being widely used as food crops. In addition to agricultural importance, grasses also are used as ornamentals in landscapes and other horticultural situations, as well as being the major plants used in turf for lawns and recreational activities. Because these plants are so widely used in a variety of monocultural plantings, they attract a wide array of pests. One of the most common and taxonomically difficult groups of insects that diagnosticians have to identify are scale insects (Hemiptera: Coccoidea).

Twenty-one families of scale insects are known worldwide with the most commonly encountered pest species found within the following 3 families: (1) Diaspididae (armored scales), (2) Pseudococcidae (mealybugs) and (3) Coccidae (soft scales). The most common scale insects associated with grasses are armored scales and mealybugs, and several species of armored scales are commonly collected on grasses in Florida. The most common of these are *Odonaspis* species, *Aspidiella sacchari* (Cockerell), *Haliaspis* species, in addition to *Frogattiella* and *Kuwanaspsis* species, which are found on bamboo.

More recently, *Duplachionaspis divergens* (Green) has steadily become one of the most commonly encountered grass infesting armored scales in Florida. This armored scale has been reported throughout much of the Eastern Hemisphere including Algeria, Australia, China, Egypt, India, Japan, Sri Lanka, Taiwan, and Thailand, and is the only species of the 35 described species of the genus known to occur in the United States. Lastra and Gomez (1997) reported the first occurrence in the Western Hemisphere from collections on sugarcane in Colombia in 1996. However, specimens collected by Fred Bennett in Venezuela on sugarcane confirmed its presence in the Western Hemisphere as early as 1991. Its occurrence in Florida and the continental United States was first recorded from specimens on a grass in Seminole Co., Florida in 2002. However, a re-examination of specimens collected in Manatee Co., Florida on *Miscanthus* species in 2000 is the earliest record of this species occurring in Florida. Since the initial finds of *D. divergens* in Florida, interceptions have occurred in both Alabama (Charles Ray, Auburn University, pers. comm.) and Texas (Scott Ludwing, Texas A&M University, pers. comm.).

The biology of *D. divergens* was studied by Lastra and Gomez (1997) in Colombia. They reported that adult females lay an average of 130 eggs and that 9 generations/year occurred with an average generation time of 39 days. The scale cover of the adult female (Fig. 1) resembles that of false oleander scale (*Pseudaulacaspis cockerelli* (Cooley) in that they appear as small white "tear drops" that are about 3 mm long. Male covers are much smaller (1 mm) and appear as white tricarinate tubes.

The economic importance of *D. divergens* in Florida is not clearly defined. However, Pruthi & Rao (1942) reported it as a minor pest of sugarcane in India, and Lastra & Gomez (1997) noted it as a pest of sugarcane in Colombia. Therefore, it is a potential pest of sugarcane in Florida where about 450,000 acres are grown annually (Meagher 2003). This species has also been found on St. Augustine grass (*Stenatophrum secundatum* (Walter) Kuntze), a common lawn grass and Bahia grass (*Paspalum notatum* Flugge), an important pasture grass. Sugarcane growers usually implement natural control strategies to control pests and seldom use pesticides. Natural enemies are known for *D. divergens* (Sankaran 1984; Shafee et al. 1975; Lastra & Gomez 1997); however, we have reared a species in the *Aphytis lingnanesis* group and *Encarsia citrina* (Craw) (Hymenoptera: Aphelinidae) from specimens collected in Florida.

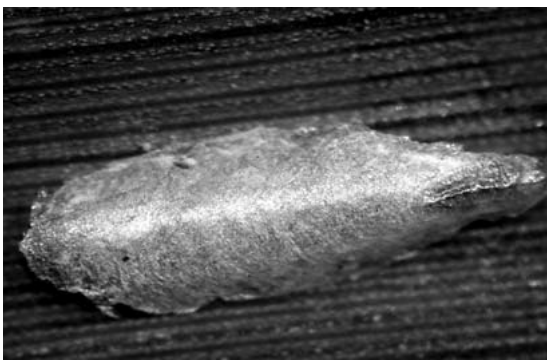


Fig. 1. Field specimen, adult female cover of *Duplachionaspis divergens*. Photograph credit: Avas Hamon, FDACS-DPI.

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SUMMARY

Duplachionaspis divergens is established in Florida and has been intercepted in both Alabama and Texas, but its overall economic impact is yet unknown. However, due to its potential as a pest of sugarcane and other grasses, it warrants close observation to ensure that this insect does not become a major pest of grasses in the southeastern United States.

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