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Source: Florida Entomologist, 90(2) : 407-409

Published By: Florida Entomological Society

URL: https://doi.org/10.1653/0015-4040(2007)90[407:NOTLST]2.0.CO;2

NOTES ON THE LONGAN SCALE, *THYSANOFIORINIA NEPHELII* (HEMIPTERA: COCCOIDEA: DIASPIDIDAE) IN FLORIDA[1]

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In Florida, the most common armored scales found on tropical fruits are considered exotics or not native to Florida and 3 examples of introductions in the last 10 years include the white mango scale, *Aulacaspis tubercularis* Newstead, the litchi scale, *Andaspis punicae* (Laing), and the longan scale, *Thysanofiorinia nephelii* (Maskell) (Hodges et al. 2005). The longan scale was first collected in the continental U.S. in Homestead, Florida in 1996. Even though the longan scale is believed to be native to the Orient, it has spread and invaded several regions worldwide prior to this detection including Autralasian, Neotropical, and Palearctic regions. Neotropical introductions detected prior to the Florida report included Brazil, Rio de Janeiro, and Cuba (Ben-Dov et al. 2003). The longan scale is now considered established in southern Florida but has not been catalogued as a significant economic pest in the United States (Miller et al. 2005). Primary hosts of concern in Florida for the longan scale include plants in the Sapindaceae, in particular longan (*Dimocarpus longan*) and lychee (*Litchi chinensis* Sonnerat). Populations may occur on leaves, stems, or fruits. Other potential host plants for the longan scale include Arecaceae (*Kentia* spp.) and Euphorbiaceae (*Euphorbia longena*) (Ben Dov et al. 1993).

Increased sample submissions of pest population reports to the Florida Department of Agriculture, Division of Plant Industry have occurred particularly in Broward, Miami-Dade, and Palm Beach Counties since 2005 (Table 1). Isolated occurrences of detection have also occurred at retail stores of tropical fruit trees, but the established pest distribution will probably be restricted to climate zones suitable for tropical fruit trees. It is unknown if this species will be a significant economic pest for tropical fruits in Florida, but increased report incidences suggest that it may be an emerging pest of concern. Basic life history and control information is unknown for this species. General and taxonomic information are summarized below.

In the field, the covering or "armor" of this scale looks similar to that of a Parlatoria scale but differs both by the color and by the actual formation of the cover. In *Thysanofiorinia*, the cover is light yellow to green and this species is considered pupillarial in that the cover is actually an enlarged shed skin of the second instar. In the *Parlatoria* scales, the covers are gray to dark in color and the covers are not formed as above; waxes are secreted and combined with shed skins. Slide mounted specimens are fairly distinctive with the slightly pyriform body shape and with strongly pronounced anal lobes separated by a considerable distance.

TABLE 1. LONGAN SCALE COLLECTION RECORDS.

Date	Month	County	Host
1996	Dec	Miami-Dade	Longan
1996	Dec	Miami-Dade	Longan
2001	Dec	Miami-Dade	Lychee
2002	Apr	Miami-Dade	Longan
2002	Apr	Miami-Dade	Longan
2002	May	Palm Beach	Lychee
2002	Jul	Miami-Dade	Longan
2004	Dec	Broward	Lychee
2005	Jan	Miami-Dade	Longan
2005	Jan	Miami-Dade	Lychee
2005	Mar	Palm Beach	Longan
2005	Apr	Alachua	Longan
2006	Jan	Collier	Longan
2006	Feb	Polk	Longan
2006	Feb	Collier	Longan
2006	Mar	Miami-Dade	Longan
2006	Mar	Pinellas	Longan
2006	May	Miami-Dade	Longan

Thysanofiorinia nephelii (Maskell)
Fiorinia nephelii Maskell, 1897

Diagnosis. Balchowsky (1954) gave a good description and illustration of *T. nephelii*. A summary of some of the key characters are listed in the following paragraphs. Slide-mounted adult females with median lobes produced out of the broad apical recess of the pygidium, separated from each other by about the width of one anal lobe, divergent, serrate on the inner margin, with

[1]FDACS Contribution No. 1032

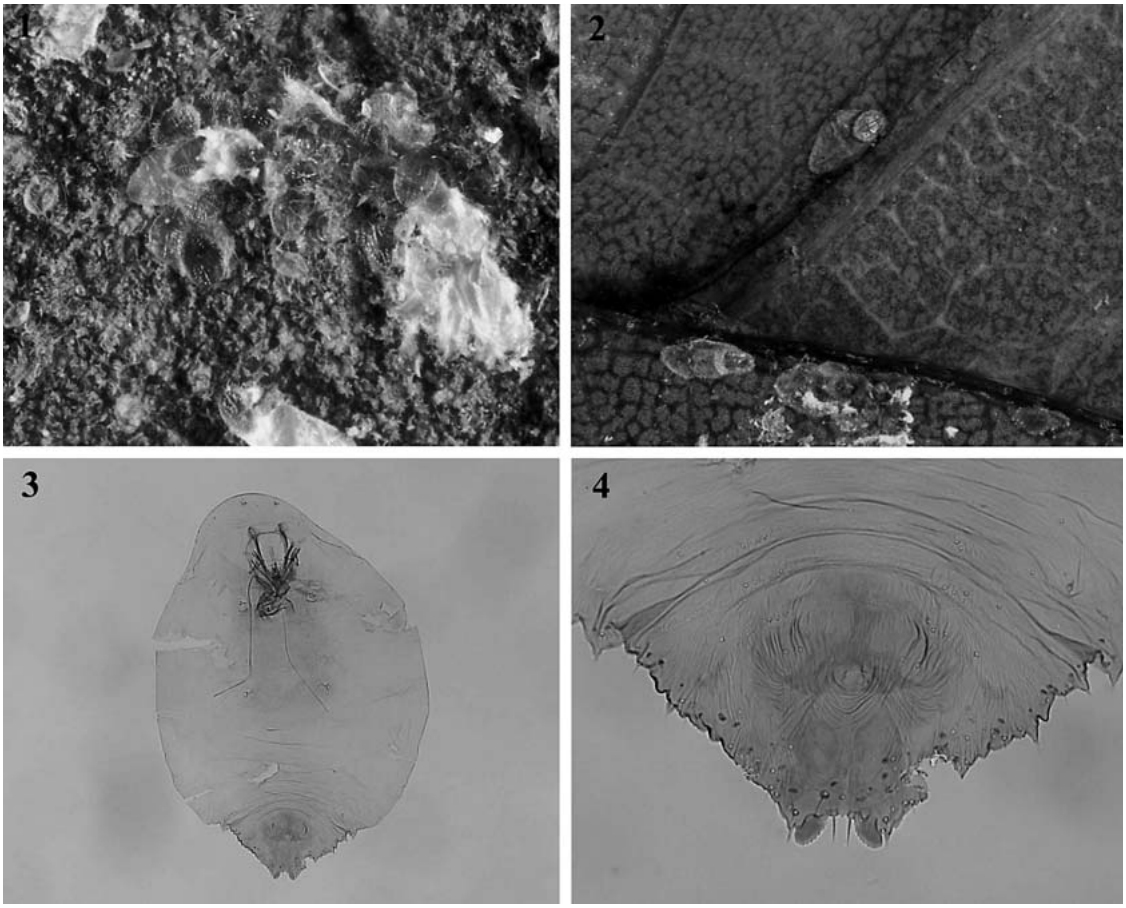

Fig. 1. *Thysanofiorinia nephelii* (Maskell) on the fruit of *Dimocarpus longan* (photo L. Buss, UF 2005).
Figs. 2-4. Adult female; 2: on the leaf of *D. longan*; 3: body; 4: pygidium.

a pair of marginal setae between them, and with the inner margin of the lobe being longer than the outer margin, the apex rounded. Second lobe reduced into a point. One marginal gland spine between the median and 2nd lobes, scarcely extending beyond the apex of the median lobe; one on each of the 3rd and 5th abdominal segments, broadened basally and somewhat conical. Perivulvar pores absent. Dorsal marcroduct distribution as follows: abdominal segment V with 1 on margin, segments VI-VII with 3 on margin, segment VIII with 1 located submarginally. First instar with a marginal series of prominent setae around the body, antennae 6-segmented (Takagi 1970).

Specimens Examined. [United States: Florida] Alachua Co.: Gainesville, on *Dimocarpus longan* (Sapindaceae), 18. IV. 2005 (J. Brambila). Miami-Dade Co.: Homestead, same host plant, 13. VI. 1996, (M. Biondo); same data, except for 23. IX. 1996 (L. Lodyga); same data, except for 5. III. 2005 (J. Brambila); Largo, same host plant, 13. XII. 2001 (D. Mooney); Miami, same host plant, 13. IX. 1996 (M. Biondo).

Summary

The longan scale, *Thysanofiorinia nephelii*, was reported for the first time in Florida in 1996 with 2 independent finds in Miami-Dade County. The scale was not found or reported during the time period of 1996-2000. Longan scale was reported 1 time in 2001, 4 times in 2002, 1 time in 2004, 4 times in 2005 and 6 times in 2006 (as of Jul 6, 2006). This scale is being seen more frequently in the field and field populations are beginning to reach high densities in some areas of Miami-Dade County (personal observation). The overall economic impact of this invasive scale insect is unknown at this time. However, increasing finds, movement on plant material for sale and increasing populations in the field may indicate that the longan scale may be an economic pest in the future for longan and lychee crops in south Florida.

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