PEST ALERT

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Florida Department of Agriculture and Consumer Services
Division of Plant Industry

Lepidosaphes laterochitinosa (Green), an adventive mussel scale in south Florida

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INTRODUCTION

Lepidosaphes laterochitinosa is a species of armored scale of Asian origin. This mussel scale has been frequently intercepted in USDA port inspections. In Florida, it had been detected twice. First, in 1987, *L. laterochitinosa* was intercepted on two shipments of *Aglaonema* sp. (Araceae) from the Philippines. In 2016, it was again intercepted on *Dracaena* sp. (Asparagaceae) plants imported from Costa Rica in a nursery in Palm Beach County. In 2018, additional specimens were submitted from the same nursery.

On November 9, 2022, FDACS-DPI inspectors Mark Zenoble and Keith Zugar collected *Dracaena* sp. plants in horticultural waste from a roadside in Hollywood, Florida. The armored scale *Lepidosaphes laterochitinosa* (Green) (Hemiptera: Diaspididae) was found on the plant material. The origin of the plant material, and whether it was ever planted in the landscape, was unknown. A month later, on December 9, 2022, FDACS-DPI inspector Mark Zenoble again collected specimens of *L. laterochitinosa* on an *Epipremnum pinnatum* (L.) Engl. (Araceae) (Fig. 7) vine growing in the landscape in Hollywood, Florida. This species was once again collected in March 2023 by Mark Zenoble in Snake Warrior Island Natural Area in Miramar, Florida on *E. pinnatum*. COI barcodes from the Molecular Diagnostics Laboratory verified the species identification with a 99% match to specimens from Korea, Indonesia, Papua New Guinea, and the Philippines. These data are accessioned and available in BOLD (FLDPI001-23, FLDPI002-23).

IDENTIFICATION

Mussel scales on host stems or leaves are very distinctive; the scale cover is 3.0-3.5mm in length, elongate with a variously tapered 'tear-drop' outline, and is generally a light to dark brown color. Feeding induces an irregular but prominent chlorosis, or yellowing, in the leaf tissue (Figs. 1 and 2; white arrows) suggestive of a natural variegated leaf color pattern. The chlorotic patch expands as the female matures and as other females settle and form a mixed-age group (Fig. 2, white arrows); typically, the chlorosis yields to tissue necrosis, which results in unsightly blemishes and leaf death if sufficiently extensive. The dorsal scale cover of an adult female in the egg production phase consists of the exuviae of the first two immature stages (Figs. 3a and b) attached at the anterior end and the elongated fibrous section composed of secreted fluids (Fig. 3c); ventrally there is a thin, white, waxy 'membrane' (Fig. 4e) attached to the leaf surface and continuous with the lateral margins of the cover. If the membrane is torn, the mouthparts (Fig. 4d), eggs (Fig. 4f) or body (Fig. 5) are visible. If eggs are present, the female body is shriveled toward the anterior end of the scale cover and a 'crawler flap' is evident at the posterior margin of the cover (Fig. 4g); if the eggs have hatched and the crawlers dispersed, only white paper-like egg cuticles, or 'shells', are present. Females that have not begun egg production, and are therefore not shriveled, display the pygidium (Fig. 6h) and pronounced lateral abdominal lobes with prominently protruding 'gland spines' (Fig 6i).

In Florida, there are now ten species of *Lepidosaphes* established in the landscape. The external morphology of these species is all very similar, and specimens should be slide-mounted to confirm identification. Slide-mounted *L. laterochitinosa* may be distinguished from other *Lepidosaphes* in Florida by the granulated margin of the head and the absence of cicatrices (bosses) on the dorsum of the abdomen among other characters.

REFERENCES

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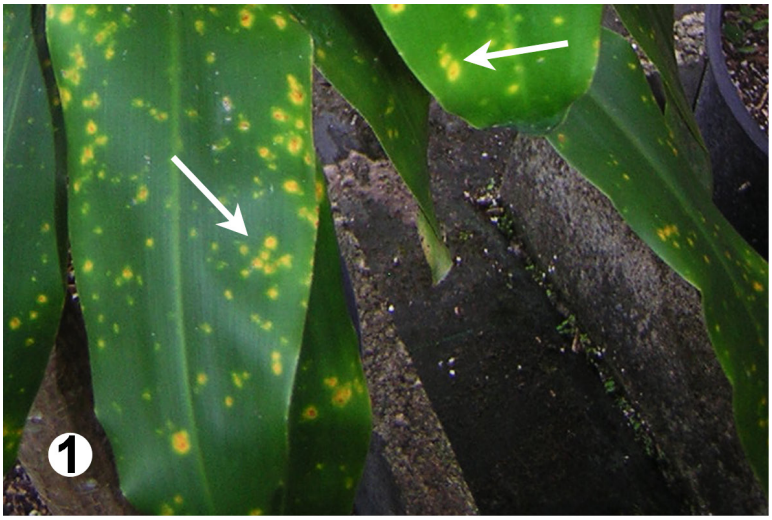

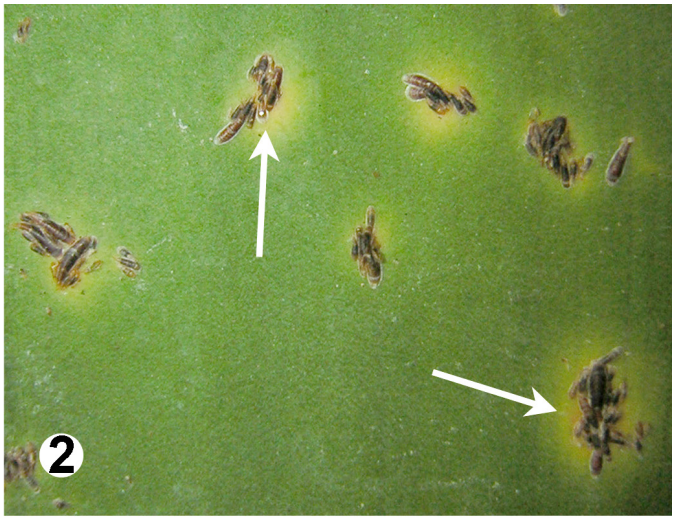

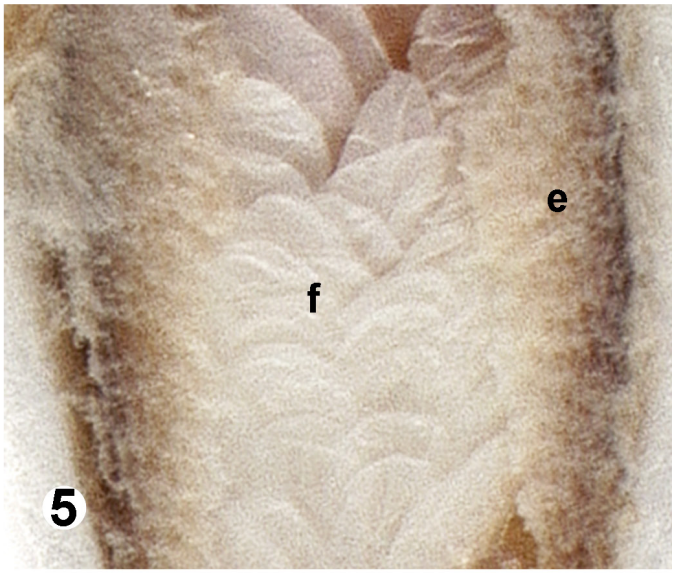

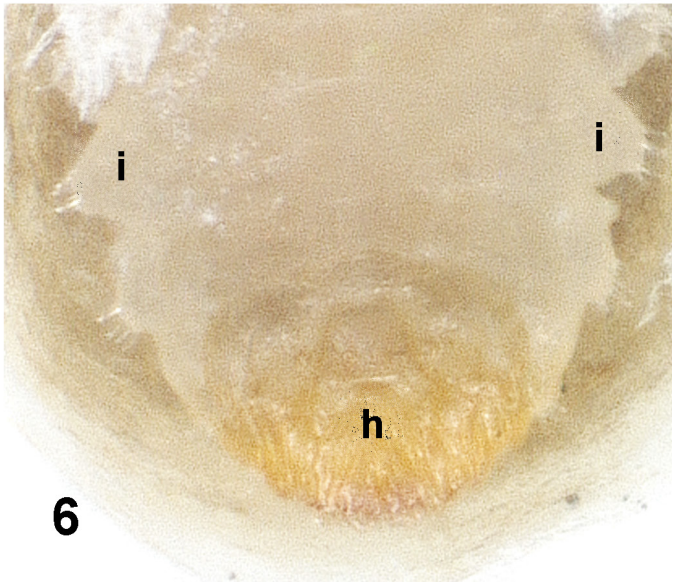

Figs. 1 and 2. *Lepidosaphes laterochitinosa* (Green) on Dracaena sp. leaves. Photo by Lane Smith, FDACS-DPI. Fig. 1. Patches of variously sized chlorotic lesions resulting from feeding. Fig. 2. Close-up of clusters of different age stages of female *L. laterochitinosa*. **Figs. 3–6. Close-up and details of the adult female and scale cover of *L. laterochitinosa*.** Photo by Ian Stocks (Photo rights retained by FDACS-DPI). Fig. 3. Dorsal view of the adult female *L. laterochitinosa* at the egg-production stage; a. Exuvial cuticle of the crawler, or first stage immature, forming the anterior end of the scale cover; b. Exuvial cuticle of second stage immature; c. scale cover of third stage, or adult female, formed from exudates and waxes. Fig. 4. Ventral view of the adult female *L. laterochitinosa* at the egg-production stage; a. exuvial cuticle of the crawler; d. mouth parts of adult female; e. ventral wax layer of the scale cover, which was adhered to the leaf and bears the imprint of the leaf surface; f. rows of eggs filling the cavity beneath the dorsal scale cover; g. 'crawler flap', the posterior lip of the dorsal scale cover that allows for crawlers to disperse. Fig. 5. Details of the ventral scale cover after hatching and dispersal of the crawlers; e. ventral wax layer; f. egg cuticle, or 'shell', that remains after hatching. Fig. 6. Close-up of female *L. laterochitinosa* prior to the egg-production stage; h. ventral pygidium; i. lateral abdominal lobes with projecting gland spines.

Fig. 7. A heavy infestation of *Lepidosaphes laterochitinosa* on the stem of *Epipremnum pinnatum.* Photo by Erin C. Powell, FDACS-DPI.