The Royal Palm Bug

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Fig. 47. Portion of royal palm leaflet showing type of damage caused by *x. luteolus.*

The royal palm bug, *Xylastodoris luteolus*, was described by Barber in 1920 from specimens collected in Cuba. The first record of its occurrence in the United States was reported by Moznette in 1921. At that time it was causing severe damage to royal palms in Coconut Grove, Florida. There has been no further report of serious damage from this pest until very recently. During the spring and summer of 1957, the royal palm bug increased in numbers sufficiently to cause damage throughout the range of its host in Florida.

The royal palm bug is a member of the family Thaumastocoridae (Hemiptera: Heteroptera). This is a rather small family that has recently been revised by Drake and Slater (1957). *Xylastodoris luteolus* is the only member of the family known to occur in the United States and it has been reported only from Florida.

The adult is a very small flat insect, about 2.0-2.25 mm. (1/12 in.) in length, pale yellow in color with red eyes. The adults are winged, carrying the wings folded flat over the thorax and abdomen. The immature insects vary in size from 0.7 mm. to 2.0 mm. (1/36 to 1/12 in.). All of the instars are yellow and possess the characteristic red eye color. The egg is an elongate structure approximately 0.5 mm. (1/50 in.) in length and oval in cross-section. It is pale tan in color and has a flat white operculum at one end.

The royal palm bug is a sucking insect that feeds by inserting its stylets into the plant tissue. The plant tissue around the entrance point of the stylets turns yellow due to the destruction of the cells caused by the withdrawal of sap. (Fig. 47) If the infestation is severe, entire leaflets will turn yellow and eventually brown.

Many of the heavily infested trees in the South Florida area are characterized by a stratified appearance. The newest of upper fronds are green, not yet showing evidence of damage. The next lower group of fronds is brown. These fronds unfolded when the royal palm bug population was high. Below these fronds are old green fronds that developed before the royal palm bug population built up enough to cause observable damage. The lowest fronds on the tree are brown due to natural processes concerned with aging.

The royal palm bug primarily attacks the newly opened fronds. It is doubtful that the bud is directly injured. As soon as the frond breaks away from the terminal bud and the leaflets start to unfold, the adults migrate to this new growth. At this stage the population on the new fronds is made up mainly of adults although occasionally a few immature stages are found. The females deposit the eggs in the cover of membranous scales on the ventral surface of the leaflet midrib. The eggs hatch in 8-9 days and during the next several days various stages will be found on the leaflets. The time for development, from the hatching of the egg to

the last molt into the adult stage, varies from 23-37 days. It is of interest to note that, during the period when the royal palms were under observation, new fronds were produced at about the same rate as new generations of royal palm bugs.

Observations indicate that most damage is found on older trees. Several small trees have been examined in areas where large, old trees were heavily infected, but only a few bugs were found. No small trees have been found with entire fronds injured as is the case with the larger trees.

Tests for the control of the royal palm bug conducted by the author and D. O. Wolfenbarger indicate that dieldrin 50% wettable powder, one-half pound per 100 gallons of water or chlordane, 40% wettable powder, two and one-half pounds per 100 gallons of water will provide adequate control. Good coverage is essential. The spray should be directed primarily at the new growth and at the base of the fronds. Since the eggs take from 8-9 days to hatch, a second application is desirable about 10-14 days after the first. None of the materials tested had a long enough residual effect to kill the first instars after hatching.

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ADDITIONS TO LIBRARY

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"Yes, indeed it has been a very great pleasure to receive PRINCIPES, a great experience in one's old age to learn so much new material on those lovely plants. My daughter Dorothy found a few years ago a handsome variegated palms of a species new to me. Somewhere I have an Ektachrome of it which I will send to the Society if I can find it. The plant was killed at Dr. Imle's home after he left Costa Rica by a careless weeding gang."—*C. H. Lankester,* Cartago, Costa Rica.