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Atheloca subrufella (Hulst), a pest of coconuts[1]

(LEPIDOPTERA: PYRALIDAE: PHYCITINAE)

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INTRODUCTION: Atheloca subrufella (Hulst), an occasional pest of coconut, Cocos nucifera L., is a small moth which occurs throughout Florida. It also occurs in Cuba and the Virgin Islands (Kimball, 1965; Heinrich, 1956). At the time Heinrich (1956) established the genus Atheloca for this species, nothing was known about its biology. Kimball (1965) reported cabbage palm, Sabal palmetto (Walt.) Lodd, and saw palmetto, Serenoa repens (Bartr.) Small, as hosts of A. subrufella. A related species, A. bondari Henrich, was reported (as Hyalospila ptychis Dyar) to be a pest of coconut, as well as several other species of Cocos and Attalea in Brazil (Bondar, 1940).

ADULT (fig. 1): Wing span 12-19 mm. Forewings pale gray with many reddish or purplish scales particularly prominent in the apical half. Two more or less distinct transverse bands, one about one-fourth wing length from base and one same distance from apex. Hindwings smoky gray with darkened veins. Labial palpi conspicuous and pinkish. Thorax pinkish, especially the prothorax.

LARVAE (fig. 2): Maximum length about 15 mm. Body finely shagreened, pinkish, sometimes almost purplish. Head, prothoracic shield, lateral sclerite on prothorax, and anal shield brown. Head inconspicuously mottled. Stemmata 3 and 4 nearly touching. Seta SD2 on mesothorax and 8th abdominal segment in membranous area surrounded by sclerotized ring as characteristic of Phycitinae. Pinacula conspicuous to indistinct. Crochets in a triordinal circle.

BIOLOGY: Little is known about the biology. Collection of large numbers of larvae from inflorescences of coconut in Kendall, Dade County, in May 1979 and saw palmetto on Longboat Key, Sarasota County, in May 1981 indicate that the insect is multivoltine, since all stages seemed to be present. Adult collection records from January through September (Kimball, 1965) further support this hypothesis. Larvae feed on newly emerged inflorescences and destroy flower buds and young developing coconuts. Coconuts up to 1.5 inches in diameter may be completely hollowed out. Larvae spin silk over the inflorescences (fig. 3 and 4) and incorporate frass and plant material into the webs. Pupation occurs amid the plant material under the webbing.

ECONOMIC IMPORTANCE: Severe infestations of this insect may greatly reduce the number of developing coconuts. Breeding programs involving Malayan Dwarf and Panama Tall coconut palms were severely curtailed by the depredations of this insect. In addition to coconut palms, cabbage palms and saw palmetto are also reported as hosts. It is not known whether this insect attacks the many other species of palms that grow in Florida.

SURVEY AND DETECTION: Palm inflorescences that are still partially in the sheath or are newly emerged should be examined for damage to the flower or fruit. Infested parts will be covered with webbing and frass from the caterpillars.

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CONTROL: The application of dimethoate to the developing inflorescences at weekly intervals has effectively controlled this insect in coconut breeding plots. The larval habit of living under the webbing makes larvae difficult to control, since insecticide applications may not reach the larvae. This combined with the height of the flower stalks from the ground make control measures impractical for most homeowners.

LITERATURE CITED:

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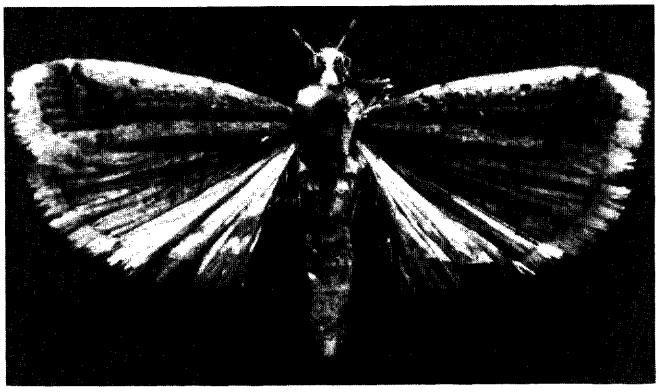

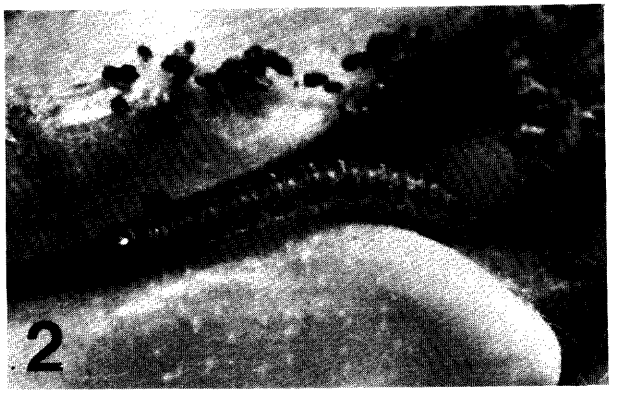

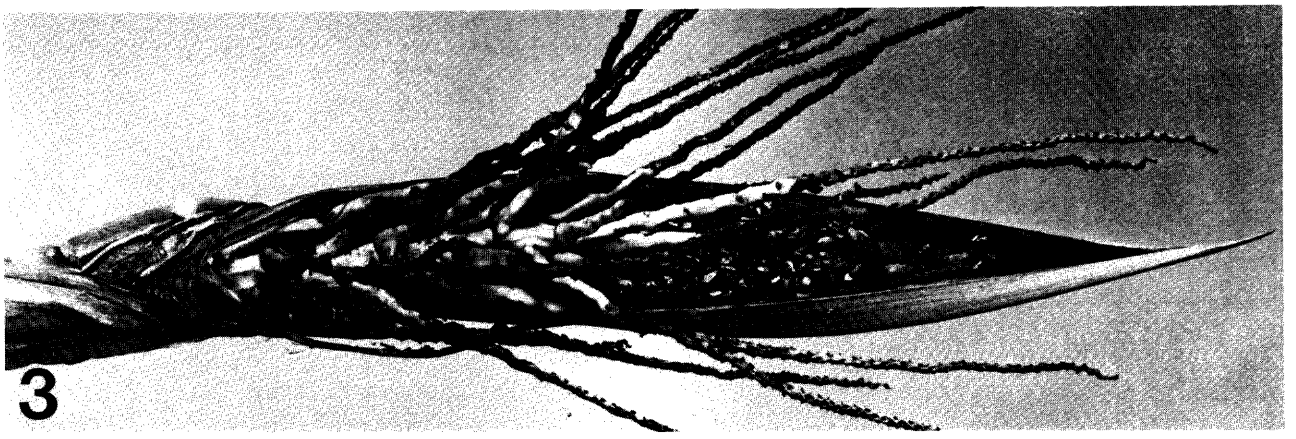

Fig. 1-4. Atheloca subrufella (Hulst): 1) adult; 2) larva; 3) damage to coconut palm inflorescence; 4) frass and webbing on damaged flower spike. (DPI Photo #701717-A, 701717-10A and 701717-7A.