

A GIANT PALM WEEVIL, *RYNCHOPHORUS CRUENTATUS* (FAB.),
IN FLORIDA (COLEOPTERA: CURCULIONIDAE). 1/

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INTRODUCTION: THE LARGEST WEEVIL IN THE UNITED STATES, *RYNCHOPHORUS CRUENTATUS* (FAB.), IS SOMETIMES A PEST OF PALMS IN THE SOUTHEASTERN U. S. ALTHOUGH THE SPECIES IS WELL KNOWN AND THE IMMATURE STAGES HAVE BEEN DESCRIBED, THE LITERATURE IS SCATTERED. THIS CIRCULAR IS AN ATTEMPT TO CONSOLIDATE THE EXISTING INFORMATION AND TO PRESENT DATA ON THIS SPECIES IN FLORIDA.

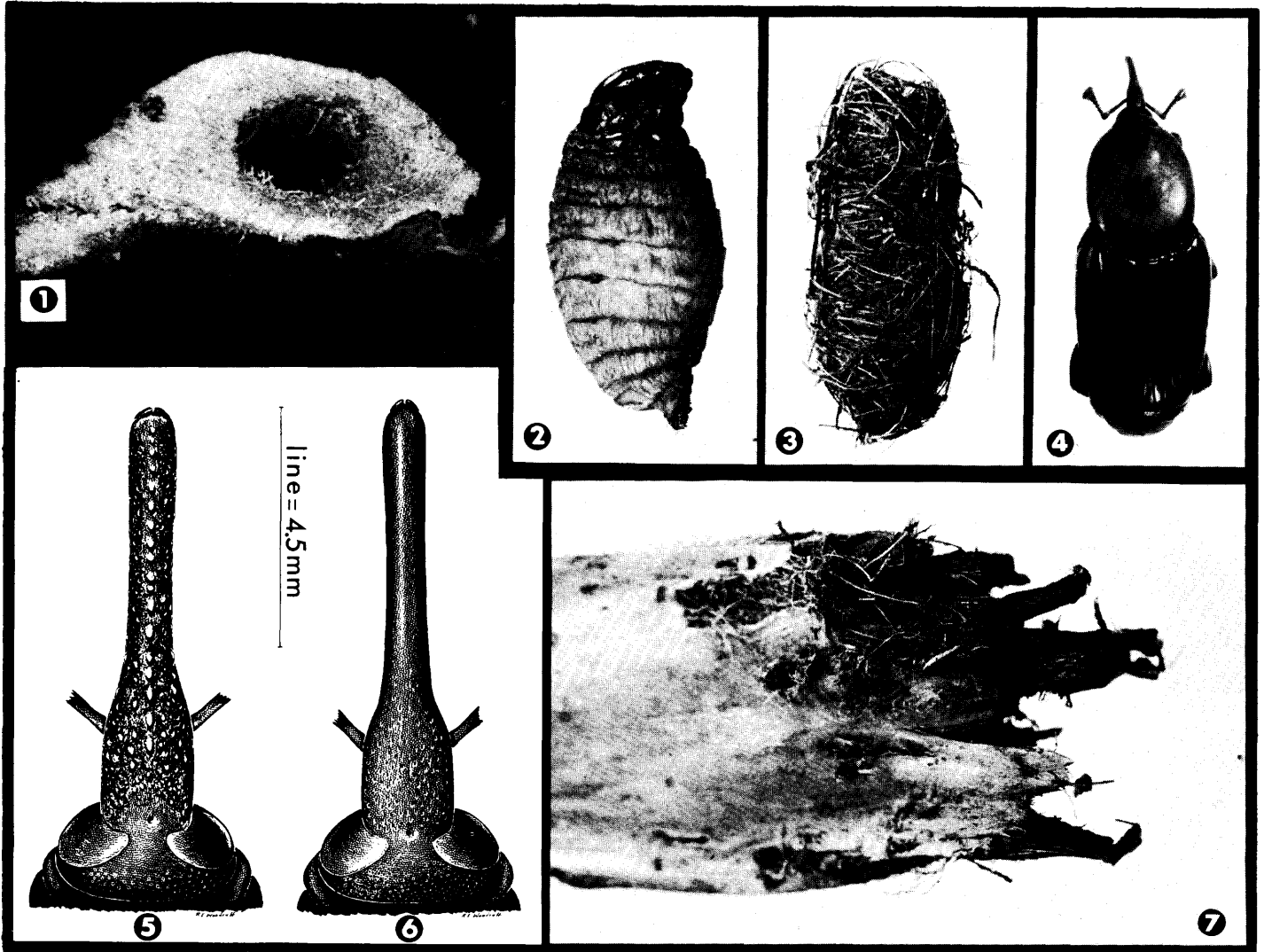


FIG. 1. CROSS SECTION OF LARVAL TUNNEL IN PALM FROND; 2. LARVA; 3. PUPAL CASE; 4. ADULT FEMALE; 5. MALE SNOUT; 6. FEMALE SNOUT; 7. DAMAGED PALM FROND.

DESCRIPTION: LENGTH FROM HEAD TO TIP OF PYGIDIUM $3/4$ "- $1\ 3/16$ " (19-30 MM), TYPICAL WEEVIL SHAPED, THE SNOUT CURVED DOWNWARD AND ABOUT 9 MM LONG. THE BASE OF THE PRONOTUM IS EVENLY ROUNDED AND NOT PROLONGED MEDIANLY AS IN THE RELATED *R. PALMARUM* (L.). COLOR VARIABLE FROM UNIFORMLY BLACK TO MOSTLY RED WITH A VARIABLE BLACK PATTERN. VARIATION IN THIS PATTERN WAS REPORTED AND FIGURED BY JOHNSON (1920). THE SURFACE IS SOMETIMES VELVETY, BUT IT IS USUALLY SOMEWHAT SHINY AS IN FIG. 4. SPECIMENS ARE OFTEN DISCOLORED BY THE RELEASE OF BODY OILS. SEXUAL DIMORPHISM NOTICEABLE, THE MALE SNOUT COVERED WITH WART-LIKE GRANULES (FIG. 5), THAT OF THE FEMALE SMOOTH EXCEPT FOR A FEW BASAL PUNCTURES (FIG. 6). THE LARVA IS YELLOWISH WITH AN ENLARGED, DARK BROWN HEAD. THE GENERAL SHAPE IS FAIRLY DISTINCTIVE AND IS SHOWN IN FIG. 2. FOR A FULL DESCRIPTION OF THE IMMATURE STAGES, SEE THE PAPERS BY ANDERSON & COTTON.

BIOLOGY: THIS SPECIES IS KNOWN TO BREED IN A VARIETY OF PALMS, BUT THE ADULTS ALSO FEED ON SEVERAL

OTHER FERMENTING PLANT PRODUCTS, THE EGGS ARE DEPOSITED NORMALLY IN THE BUD OF PALMS, ESPECIALLY CABBAGE PALMETTO AND COCONUT PALM. THEY WILL ATTACK HEALTHY TREES, BUT ARE MOST OFTEN ATTRACTED TO WEAKENED OR DYING TREES, ESPECIALLY CABBAGE PALMS FROM WHICH THE "HEART" HAS BEEN REMOVED FOR SALAD. THE WEEVILS ARE ATTRACTED TO VARIOUS CHEMICALS, INCLUDING AN AUTOMOBILE PAINT (BARE, 1929), AND FERMENTING MOLASSES AND MALT. THE RELATED SPECIES R. PALMARUM IS ATTRACTED TO A MIXTURE OF MALT, SKATOLE AND ISO-AMYL ACETATE (HAGLEY, 1965A). ADULTS HAVE BEEN FOUND DURING EVERY MONTH OF THE YEAR IN FLORIDA.

THE LARVAE BORE INTO THE BUD OR LEAF SHEATHS, OFTEN KILLING THE TREE. A LARVAL TUNNEL IS SHOWN IN CROSS SECTION IN FIG. 1, AND THE DAMAGED FROND IS SHOWN IN FIG. 7. THE PUPAL CASE IS MADE FROM COARSE PALM FIBERS AND IS ABOUT 2 1/2 INCHES LONG (FIG. 3). THE LARVAE MAKE A FEEDING NOISE WHICH IS DESCRIBED BY CHITTENDEN (1902:26) AS BEING "...LIKE THE ESCAPE OF WATER WITH AN OCCASIONAL SCREECH LIKE A CHOKED HEN." IN THE WEST INDIES, LARVAE OF R. PALMARUM ARE CALLED "GRU-GRU" AND ARE FRIED OR ROASTED AND CONSIDERED A DELICACY. THEY ARE REPUTED TO HAVE THE PROPERTY OF PRODUCING MILK IN WOMEN, AND THE LARVA OF A RELATED SPECIES IN EUROPE IS CLAIMED TO BE A REMEDY FOR TOOTHACHE (BLACHLEY & LENG, 1920).

ECONOMIC IMPORTANCE: THIS SPECIES CAN KILL SINGLE TREES AS WELL AS CAUSE THE DROP OF LARGE FRONDS. THE RELATED R. PALMARUM IS RESPONSIBLE FOR TRANSMITTING THE NEMATODE RHADINAPHELENCHUS COCOPHILUS (COBB), THE CASUAL ORGANISM OF "RED-RING" DISEASE OF COCONUTS (HAGLEY, 1965C). ALTHOUGH THERE HAVE BEEN NO REPORTS OF R. CRUENTATUS ASSOCIATED WITH NEMATODES OR DISEASES, THIS POSSIBILITY HAS NOT BEEN INVESTIGATED IN FLORIDA.

DISTRIBUTION: IT IS APPARENTLY CONFINED TO THE SOUTHEASTERN U.S. AND PROBABLY OCCURS COEXTENSIVELY WITH CABBAGE PALMS. IT HAS BEEN SPECIFICALLY REPORTED FROM SOUTH CAROLINA, GEORGIA, FLORIDA, AND LOUISIANA. IN FLORIDA IT HAS BEEN RECORDED FROM THE FOLLOWING LOCALITIES: APOPKA, ARCADIA, BOKEELIA, CEDAR KEY, CITRA, CLEWISTON, CORAL GABLES, DAYTONA BEACH, DUNDEE, EAU GALLIE, FT. MYERS, FT. PIERCE, GAINESVILLE, HILLSBOROUGH RIVER ST. PARK, HOMESTEAD, KENDALL, KISSIMMEE, LARGO, MANATEE KEY, MELBOURNE, MIAMI, MOORE HAVEN, NORTH BEACH, ORLANDO, PAHOKEE, PARRISH, PIERSON, POLK COUNTY, PORT CHARLOTTE, ST. AUGUSTINE, ST. JOHNS RIVER, SANFORD, SCOTTSMOOR, SEBRING, TAMPA, VERO BEACH, VOLUSIA, WABASSO, WAUCHULA, WEST PALM BEACH, WILDWOOD, WINTER GARDEN, WINTER HAVEN, AND WINTER PARK.

TAXONOMY: THE GENUS WAS RECENTLY REVISED IN A DISSERTATION WHICH HAS NOT BEEN PUBLISHED. (WATTANAPONGSIRI, 1965). THE GENUS CONTAINS ONLY TWO SPECIES IN NORTH AMERICA. R. PALMARUM HAS NOT BEEN FOUND IN THE EASTERN U.S., BUT IT SHOULD BE READILY RECOGNIZED IF IT IS FOUND. IT IS LARGER (LENGTH ABOUT 1 3/8") THAN CRUENTATUS, VELVETY BLACK, THE PRONOTUM MEDIANLY ELONGATE AT THE BASE, AND THE MALE HAS AN ELONGATE TUFT OF HAIRS ON THE TOP OF THE SNOUT. THE GENERIC NAME HAS BEEN SPELLED RHYNCHOPHORUS IN NEARLY ALL THE LITERATURE, INCLUDING THE RECENT BOOK ON THE WEEVILS OF AMERICA NORTH OF MEXICO (KISSINGER, 1964). HOWEVER, IT WAS POINTED OUT BY PIERCE (1925) THAT THE CORRECT SPELLING SHOULD BE RYNCHOPHORUS.

CONTROL: THE OLDER RECOMMENDED CONTROL WAS TO USE TRAP TREES (BY CUTTING THE BUD AND HAND COLLECTING THE WEEVILS). ADULTS CAN NOW BE KILLED WITH SEVERAL INSECTICIDES INCLUDING BHC AND DDT. IT IS RECOMMENDED THAT PALM TREES, WITH EVEN SLIGHT INJURIES OR BRUISES, BE TREATED WITH A DUST OF THE ABOVE MATERIALS.

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