

THE PALM SEED "WEEVIL," CARYOBRUCHUS GLEDITSIAE (L.),  
IN FLORIDA (COLEOPTERA: BRUCHIDAE)<sup>1/</sup>

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**INTRODUCTION:** THIS SPECIES IS THE LARGEST MEMBER OF THE FAMILY BRUCHIDAE IN THE U. S., AND ALTHOUGH IT IS COMMONLY ENCOUNTERED BY NURSERY INSPECTORS, IT IS RARELY RECOGNIZED. THIS CIRCULAR IS AN ATTEMPT TO CONSOLIDATE THE AVAILABLE INFORMATION ON THIS SPECIES IN FLORIDA AND TO FACILITATE ITS RECOGNITION.

**DESCRIPTION:** LENGTH 5-8 MM; COLOR GREY-BLACK TO BROWNISH (FIG. 1). THE DORSAL SURFACE IS COVERED WITH FINE PUBESCENCE. THE PRONOTUM HAS AN IMPRESSED LINE EXTENDING AROUND ITS BORDER, A CHARACTER WHICH SEPARATES THIS GENUS FROM ALL OTHERS IN THE U. S. THE POSTERIOR FEMORA ARE GREATLY SWOLLEN WITH A TOOTHED VENTRAL MARGIN (FIG. 3). THE POSTERIOR TIBIAE ARE CURVED AND NORMALLY FIT TIGHTLY AGAINST THE FEMORA (FIG. 3). THE TIP OF THE POSTERIOR TIBIA IS PROLONGED INTO A SPINE, BUT WITHOUT ARTICULATED SPURS. THE ELYTRA ARE INDIVIDUALLY ROUNDED AT THE TIP AND COVER MORE OF THE PYGIDIUM THAN IN MOST BRUCHIDAE. THE FINE SETAE ARE WHITISH AND UNEVENLY DISTRIBUTED BUT WITHOUT ANY DEFINITE PATTERN. THE ANTENNAE ARE SERRATE FROM THE THIRD SEGMENT (FIG. 1).

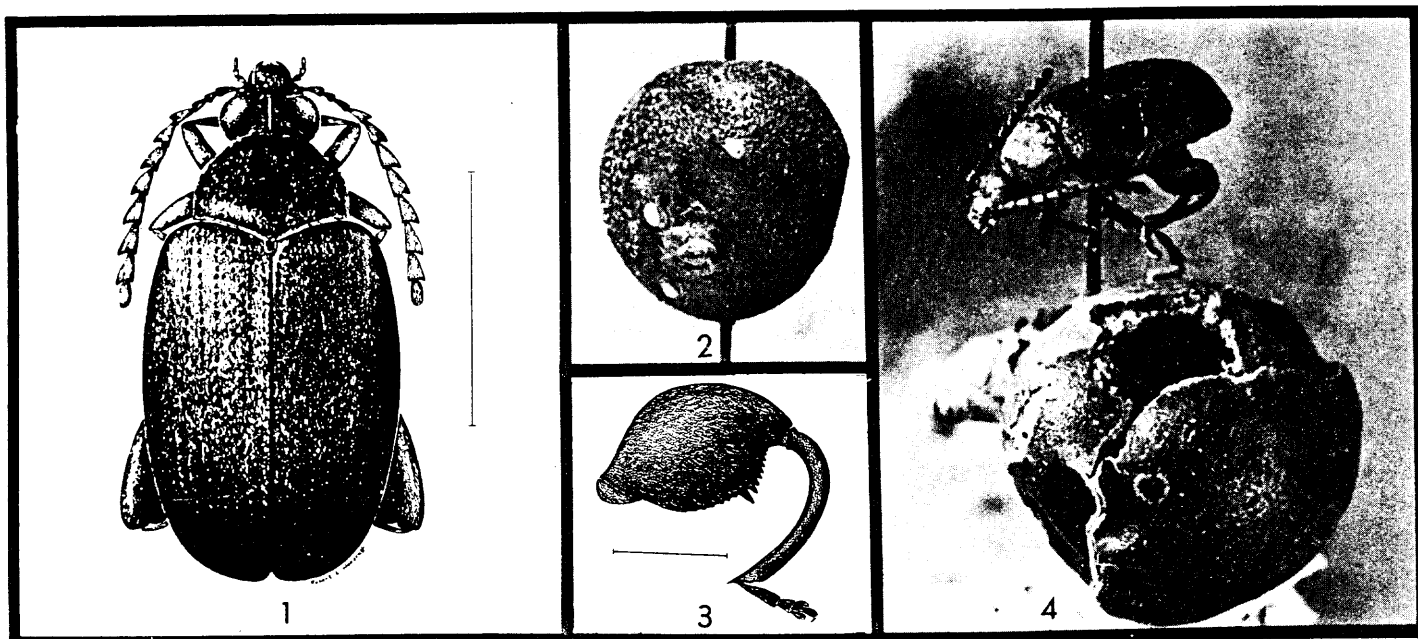


FIG. 1.-ADULT MALE (DORSAL VIEW), LINE = 4.5 MM; FIG. 2.-SEED OF SABAL MINOR WITH THREE EGGS; FIG. 3.-LEFT POSTERIOR LEG (EXTERNAL VIEW), LINE = 1.5 MM; FIG. 4.-SPECIMEN ASSOCIATED WITH THE SEED FROM WHICH IT EMERGED.

**BIOLOGY:** ALTHOUGH THE BRUCHIDAE OR "PEA AND BEAN WEEVILS" BREED PREDOMINANTLY IN LEGUME SEEDS, THIS SPECIES BREEDS IN PALM SEEDS AS DO MOST MEMBERS OF THE SUBFAMILY PACHYMERINAE TO WHICH IT BELONGS. THE EGGS ARE LAID ON THE OUTSIDE OF THE PALM SEED (FIG. 2) AND USUALLY ONLY A SINGLE ADULT WILL EMERGE FROM EACH SEED. I HAVE NOT BEEN ABLE TO ASCERTAIN WHETHER THE LARVA HAS BEEN DESCRIBED.

ADULTS ARE CAPABLE OF JUMPING CONSIDERABLE DISTANCES WITH THE AID OF THE ENLARGED HIND FEMORA. SPECIMENS HAVE BEEN COLLECTED EVERY MONTH OF THE YEAR IN FLORIDA, ESPECIALLY IN STEINER FRUIT FLY TRAPS. THEY HAVE ALSO BEEN TAKEN IN MCPHAIL TRAPS, JAPANESE BEETLE TRAPS, AND UNCOMMONLY IN BLACKLIGHT TRAPS. SPECIMENS HAVE BEEN REARED OR EGGS FOUND ON THE FOLLOWING SPECIES OF PALMS; COCCOTHRINAX ARGENTATA (JACQ.) BAILEY, PHOENIX SYLVESTRIS (L.) ROXB., SABAL YAPA C. WRIGHT EX BECC., SABAL PARVIFLORA BECC., COCCOTHRINAX MARTII (GRISEB. ET WENDL.) BECC., SABAL MINOR (JACQ.) PERS., SABAL GLAUCESENS LODD., LIVISTONA CHINENSIS (JACQ.) R. BROWN EX MART., SABAL MAURITIAEFORMIS (KARST.) GRISEB. EX WENDL., SABAL PALMETTO (WALT.) LODD. EX SCHULT., SERENOA REPENS (BARTRAM) SMALL. THE SIZE OF THE INDIVIDUAL IS PARTIALLY DEPENDENT ON THE SIZE OF THE HOST SEED.

**ECONOMIC IMPORTANCE:** SINCE THIS SPECIES IS WIDESPREAD AND OFTEN ABUNDANT, IT UNDOUBTEDLY IS RESPONSIBLE FOR DAMAGE TO A GREAT NUMBER OF PALM SEEDS. IT HAS NOT BEEN REPORTED AS A SERIOUS PROBLEM BY THE NURSERYMEN GROWING PALMS, BUT IT IS PROBABLY THE REASON FOR POOR GERMINATION IN MANY PLANTINGS.

**DISTRIBUTION:** ACCORDING TO BRIDWELL (1929:156), THIS SPECIES OCCURS "...FROM NORTH CAROLINA TO BROWNSVILLE, TEXAS." HE STATED FURTHER "...I DO NOT KNOW IF IT OCCURS ELSEWHERE FOR SOME OF THE RECORDS OF IT OCCURRING IN THE WEST INDIES ARE PROBABLY BASED ON UNDESCRIBED SPECIES KNOWN TO OCCUR THERE."

I HAVE SEEN SPECIMENS INTERCEPTED AT NEW ORLEANS, LOUISIANA, IN SEEDS OF WASHINGTONIA FILIFERA SHIPPED FROM SAFETY HARBOR, FLORIDA.

IN FLORIDA, IT APPEARS TO BE CONFINED TO THE PENINSULA AS SHOWN IN FIG. 5. IT IS LIKELY THAT IT OCCURS IN THE WESTERN PANHANDLE WHERE TWO OF ITS HOSTS, SAW PALMETTO AND CABBAGE PALM, OCCUR COMMONLY. SPECIFIC FLORIDA RECORDS IN THE FLORIDA STATE COLLECTION OF ARTHROPODS ARE AS FOLLOWS (COUNTY NAMES ARE LISTED IN PARENTHESES):

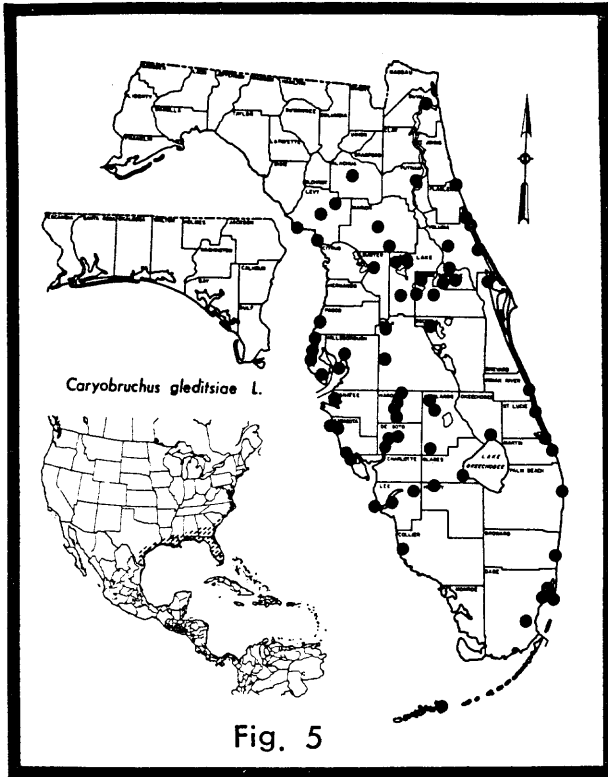


Fig. 5

ALTAMONTE SPRINGS (SEMINOLE), ALVA (LEE), ARCADIA (DESOTO), AVON PARK (POLK), BELLEAIR BEACH (PINELLAS), BOCA CIEGA ISLE (PINELLAS), BOCA GRANDE ISLAND (LEE), BRONSON (LEVY), BUCHANAN (HARDEE), CASSELBERRY (SEMINOLE), CEDAR KEY (LEVY), CLEARWATER (PINELLAS), DAYTONA BEACH (VOLUSIA), DELAND (VOLUSIA), DUNEDIN (PINELLAS), LAKE WIER (MARION), EAST NOCATEE (DESOTO), E. ZOLFO (HARDEE), EGMONT KEY (PINELLAS), ENGLEWOOD (SARASOTA), EUSTIS (LAKE), FT. DESOTO PARK (PINELLAS), FT. LAUDERDALE (BROWARD), FT. MYERS (LEE), FT. OGDEN (DESOTO), FT. PIERCE (ST. LUCIE), FT. WINDER (DESOTO), GAINESVILLE (ALACHUA), GROVELAND (LAKE), GULFPORT (PINELLAS), HIALEAH (DADE), HICORIA (HIGHLANDS), HOBE SOUND (MARTIN), HOLLY HILL (VOLUSIA), HORNSBY (HARDEE), JACKSONVILLE (DUVAL), JENSEN (MARTIN), JENSEN BEACH (MARTIN), KEY BISCAYNE (DADE), KISSIMMEE (OSCEOLA), LABELLE (HENDRY), LAKELAND (POLK), LEESBURG (LAKE), LONG BOAT KEY (SARASOTA), MADEIRA BEACH (PINELLAS), MANASOTA KEY (SARASOTA), MARINELAND (FLAGLER), MASCOTTE (LAKE), MIAMI (DADE), MIMS (BREVARD), MINNEOLA (LAKE), NAPLES (COLLIER), NEW SMYRNA BEACH (VOLUSIA), NORTH MIAMI (DADE), OAK GROVE (HARDEE), OCALA (MARION), OKEECHOBEE (OKEECHOBEE), OKLAWAHA (MARION), OLDSMAR (PINELLAS), ORLANDO (ORANGE), ORMOND BEACH (VOLUSIA), ORSINO (SEMINOLE), OTTER CREEK (LEVY), OVIEDO (SEMINOLE), PALATKA (PUTNAM), PALMETTO (MANATEE), PALM HARBOR (PINELLAS), PANASOFFKEE (SUMTER), PASS-A-GRILLE (PINELLAS), PINELLAS PARK (PINELLAS), PLYMOUTH (ORANGE), PORT RICHEY (PASCO), REDINGTON BEACH (PINELLAS), RIVIERA BEACH (PALM BEACH), SAFETY HARBOR (PINELLAS), SANIBEL ISLAND (LEE), SANFORD (SEMINOLE), SARASOTA (SARASOTA), SEA HORSE KEY (LEVY), SEBRING (HIGHLANDS), SIESTA KEY (SARASOTA), SNEADS ISLAND (MANATEE), SNELL ISLAND (PINELLAS),

So. VENICE (SARASOTA), ST. ARMOND'S KEY (SARASOTA), ST. PETERSBURG (PINELLAS), TAMPA (HILLSBOROUGH), TARPON SPRINGS (PINELLAS), THONOTOSASSA (HILLSBOROUGH), VERO BEACH (INDIAN RIVER), W. PALM BEACH (PALM BEACH), WIERSDALE (MARION), WINTER GARDEN (ORANGE).

TAXONOMY: BRIDWELL (1929) PLACED THE GENUS CARYOBRUCHUS IN THE TRIBE PACHYMERINI ALONG WITH THE OTHER PALM BRUCHIDS, CARYOBORUS AND PACHYMERUS. PREVETT (1966a) ADDED A FOURTH GENUS, PACHYMEROIDES, TO THE TRIBE, BUT BECAUSE THIS NAME WAS PREOCCUPIED, HE CHANGED IT TO BUTIOBRUCHUS (1966b).

OUR SPECIES C. GLEDITSIAE (L.) (= ARTHROITICUS FAB.) WAS MADE THE TYPE OF THE GENUS CARYOBRUCHUS BY BRIDWELL (1929). THIS SPECIES WAS ORIGINALLY THOUGHT TO BREED IN SEEDS OF THE HONEY LOCUST (GLEDITSIA TRIACANTHOS L.) AND WAS THEREFORE GIVEN THE MISLEADING SPECIFIC NAME GLEDITSIAE, ALTHOUGH IT BREEDS EXCLUSIVELY IN PALM SEED. PRIOR TO ITS PRESENT PLACEMENT, IT HAD BEEN PLACED IN THE GENERA BRUCHUS, CARYOBORUS, AND PACHYMERUS.

CONTROL: J. E. BROGDON, UNIVERSITY OF FLORIDA EXTENSION SERVICE, RECOMMENDS THAT SEEDS TO BE PLANTED IMMEDIATELY AFTER HARVEST OR THOSE TO BE STORED SHOULD BE DUSTED WITH 5% DDT AT THE RATE OF ABOUT 1 OZ. PER BUSHEL OF SEED.

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- PREVETT, P. F. 1966b. THE IDENTITY OF THE PALM KERNEL BORER IN NIGERIA, WITH SYSTEMATIC NOTES ON THE GENUS PACHYMERUS THUNBERG (COLEOPTERA: BRUCHIDAE). BULL. ENT. RES. 57(1):181-192; 34 FIG.