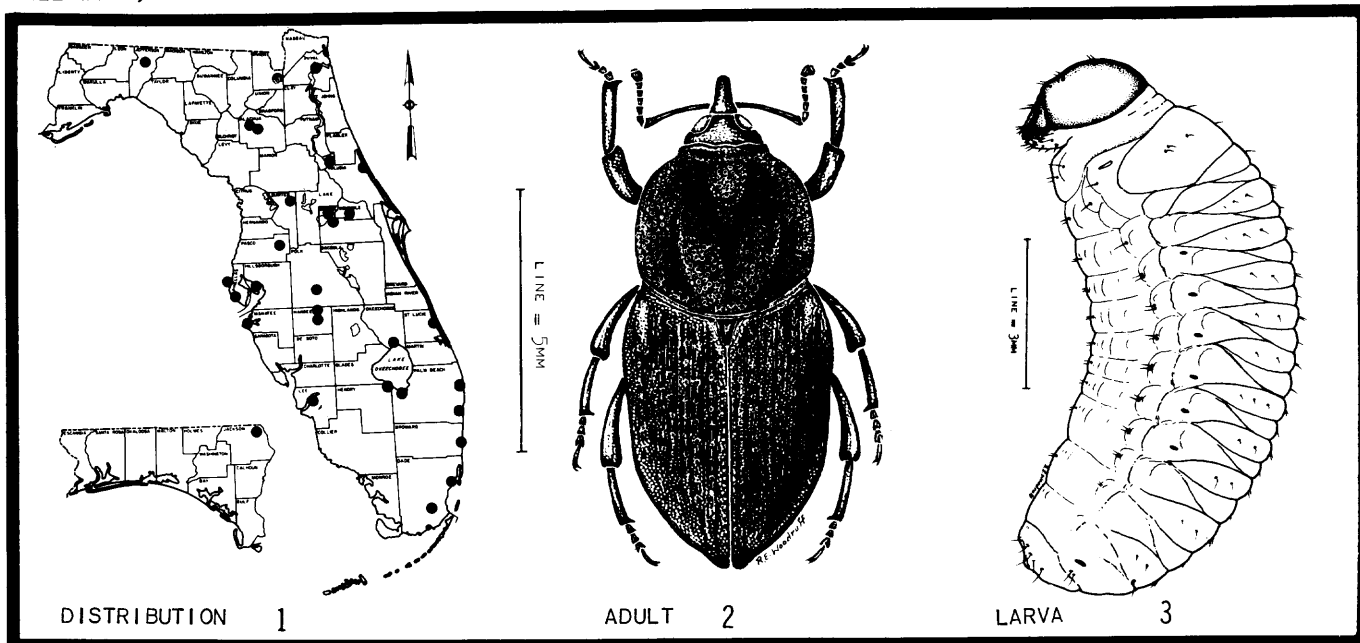


THE HUNTING BILLBUG, SPHENOPHORUS VENATUS VESTITUS CHITTENDEN,
IN FLORIDA (COLEOPTERA: CURCULIONIDAE)^{1/}

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INTRODUCTION: THE WEEVIL, SPHENOPHORUS VENATUS VESTITUS CHITT., IS COMMONLY KNOWN AS "HUNTING BILLBUG" OR "ZOYSIA BILLBUG" IN FLORIDA, WHERE IT HAS BEEN REPORTED AS A PEST OF VARIOUS GRASSES, ESPECIALLY IN NURSERIES.

DESCRIPTION: THE GENERAL HABITUS OF THE ADULT IS SHOWN IN FIG. 2; LENGTH 6-11 MM. IT IS TYPICALLY WEEVIL-LIKE IN APPEARANCE WITH A SHORT, FAIRLY BROAD, RECURVED SNOUT. THE COLOR IS VARIABLE FROM GRAY TO BLACK WITH REDDISH OR BROWN AREAS SOMETIMES VISIBLE. THE SURFACE IS OFTEN COATED WITH SOIL AS WELL AS A NATURALLY PRUINOSE, CLAYEY COATING, GIVING THE WEEVIL A DIRTY APPEARANCE. SPECIMENS ARE ALSO SUSCEPTIBLE TO GREASING FROM BODY OILS. THESE TWO CONDITIONS ARE RESPONSIBLE FOR CONSIDERABLE VARIATION IN APPEARANCE. THE PRONOTUM IS COARSELY PUNCTATE EXCEPT FOR A "Y"-SHAPED AREA IN THE CENTER AND A PARENTHESIS-LIKE MARKING ON EACH SIDE. THIS PATTERN IS CHARACTERISTIC OF THE SPECIES. THE LARVA (FIG. 3) IS TYPICAL OF MOST WEEVIL LARVAE, BEING THICKEST AT THE MIDDLE. THE BODY IS WHITE TO YELLOWISH, THE HEAD TAN TO BROWN AND MANDIBLES MOSTLY BLACK.



BIOLOGY: MOST OF THE DETAILS OF THE LIFE HISTORY ARE NOT KNOWN, BUT THIS ASPECT IS CURRENTLY UNDER INVESTIGATION BY DR. S. H. KERR OF THE UNIVERSITY OF FLORIDA AGRICULTURAL EXPERIMENT STATION. ACCORDING TO KELSHEIMER (1956), THE EGGS ARE LAID IN THE LEAF SHEATHS OR TOP OF THE CROWN; THEY HATCH IN THREE TO TEN DAYS, AND THE NEWLY EMERGED LARVAE FEED ON THE INNER LEAVES AS THEY WORK THEIR WAY TO THE ROOTS. LARVAE HAVE BEEN FOUND AT DEPTHS OF EIGHT INCHES, AND ALTHOUGH AS MANY AS 72 PER SQUARE FOOT WERE REPORTED, THE AVERAGE FIND WAS 10 TO 14. PUPATION IN THE SOIL OR IN THE ROOTS OCCURS AFTER THREE TO FIVE WEEKS. THE PUPAL PERIOD WAS NOTED AS THREE TO SEVEN DAYS. ADULTS HAVE BEEN FOUND EVERY MONTH OF THE YEAR, BUT MOST ACTIVITY HAS BEEN NOTED IN THE FALL AND WINTER.

HOSTS: NEARLY ALL THE MEMBERS OF THIS GENUS FEED ON GRASSES AND SEDGES. MOST OF THE DAMAGE RESULTS WHEN LAWN GRASSES ARE PLANTED IN AREAS WHICH FORMERLY HAD HIGH POPULATIONS ON NATURAL GRASS AND SEDGE COVER. THIS SEEMS TO BE PARTICULARLY TRUE IN MOIST AREAS SUCH AS THE MUCKLAND AROUND LAKE OKEECHOBEE

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WHICH IS USED FOR COMMERCIAL SOD PRODUCTION. BY FAR, THE MOST COMMONLY RECORDED HOST IN FLORIDA IS ZOYSIA GRASS (ZOYSIA MATRELLA (L.) MERR.). OTHER HOSTS RECORDED IN FLORIDA ARE: BERMUDA GRASS (CYNODON DACTYLON (L.) PERS.), PENSACOLA BAHIA GRASS (PASPALUM NOTATUM FLUGGE), ST. AUGUSTINE GRASS (STENOTAPHRUM SECUNDATUM (WALT. KUNZE), CENTIPEDE GRASS (EREMOCHLOA OPHIUROIDES (MUNRO) HACK.), CORN (ZEA MAYS L.), SUGARCANE (SACCHARUM OFFICINARUM L.) AND LEATHER-LEAF FERN (POLYSTICHUM ADIANTIFORME J. SMITH). SATTERTHWAIT (1931) LISTED HOSTS FOR S. VENATUS, SOME OF WHICH MIGHT APPLY TO S. VESTITUS: YELLOW NUT GRASS (CYPERUS ESCULENTUS L.), WHEAT (TRITICUM AESTIVUM L.), TIMOTHY (PHLEUM PRATENSE L.), AND A BULRUSH (SCIRPUS VALIDUS VAHL.).

ECONOMIC IMPORTANCE: KERR (1964) STATED THAT THIS SPECIES IS NOT A MAJOR TURF PEST IN FLORIDA, BUT IT IS PRIMARILY A PEST OF ZOYSIA GRASS IN NURSERIES. THE DAMAGE IS MOST SERIOUS ON THE ROOTS, BUT YOUNG LARVAE APPARENTLY CAUSE SOME LEAF OR SHOOT DAMAGE. KELSHEIMER (1956) NOTED THAT THE DAMAGE CAUSED PROBLEMS IN HANDLING THE CUT SOD SQUARES FOR SHIPMENT. THE ROOT SYSTEM IS OFTEN SO WEAKENED THAT THE SQUARES WILL NOT HOLD TOGETHER.

CONTROL: SEVERAL INSECTICIDES AND SOME NEMATICIDES ARE SUCCESSFUL IN CONTROLLING THIS PEST. KERR (1964) INDICATED THAT BAYGON (10 POUNDS/ACRE), DI-SYSTON (10 POUNDS/ACRE), N 2790 (10 POUNDS/ACRE), B 25151 (20 POUNDS/ACRE), AND PHORATE (10 POUNDS/ACRE) WERE EFFECTIVE IN A COMMERCIAL EMERALD ZOYSIA GRASS NURSERY ON MUCKLAND SOIL.

TAXONOMY: THE GENUS SPHENOPHORUS CONTAINS 64 SPECIES IN THE UNITED STATES, WITH 20 OF THESE BEING RECORDED FROM FLORIDA (VAURIE:1951). SPHENOPHORUS VENATUS (SAY) HAS BEEN DIVIDED INTO FIVE SUBSPECIES, OF WHICH ONLY ONE (VESTITUS CHITT.) IS FOUND IN THE SOUTHEAST. THIS GENUS WAS PREVIOUSLY CALLED CALANDRA AND CALENDRA, BUT THESE NAMES HAVE BEEN SUPPRESSED IN FAVOR OF SPHENOPHORUS BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE (1959). SPECIMENS OF THIS GROUP ARE OFTEN DIFFICULT TO IDENTIFY AND SHOULD BE SENT TO A SPECIALIST FOR CONFIRMATION.

DISTRIBUTION: THE FLORIDA DISTRIBUTION IS SHOWN IN FIG. 1 (BASED ON DIVISION OF PLANT INDUSTRY RECORDS). THE SPECIFIC LOCALITIES ARE AS FOLLOWS: APOPKA, BARTOW, BOWLING GREEN, BRADENTON, CLEARWATER, CLEWISTON, CORAL GABLES, DADE CITY, DAYTONA BEACH, DAVIE, DELRAY BEACH, EMPORIA, FT. LAUDERDALE, FT. MYERS, FT. PIERCE, GAINESVILLE, GRAND RIDGE, HAGUE, HOMESTEAD, JACKSONVILLE, LAKE HARBOR, LARGO, MACCLENNY, MANATEE, MIAMI, MONTICELLO, OKEECHOBEE, OXFORD, PALMETTO, SANFORD, SOUTH MIAMI, TAMPA, WAUCHULA, WEST PALM BEACH, ZELLWOOD. VAURIE (1951) RECORDS IT FROM ALABAMA, ARKANSAS, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KANSAS, LOUISIANA, MISSISSIPPI, MISSOURI, NORTH CAROLINA, SOUTH CAROLINA, TEXAS AND VIRGINIA AS WELL AS AS THE BAHAMAS, CUBA, DOMINICAN REPUBLIC, AND PUERTO RICO.

REFERENCES:

- BLATCHLEY, W.S. & C.W. LENG. 1916. RHYNCHOPHORA OR WEEVILS OF NORTH EASTERN AMERICA. NATURE PUBL. CO., INDIANAPOLIS, IND. 682P.
- INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE. 1959. BULL. ZOOLOG. NOMENCLATURE 17:112-116.
- KELSHEIMER, E.G. 1956. THE HUNTING BILLBUG, A SERIOUS PEST OF ZOYSIA. PROC. FLORIDA STATE HORT. SOC. 69:415-418.
- KERR, S.H. 1964. CONTROL OF HUNTING BILLBUGS. FLORIDA ENT. 47(4):269-270.
- KISSINGER, D.G. 1964. CURCULIONIDAE OF AMERICA NORTH OF MEXICO, A KEY TO THE GENERA. TAXONOMIC PUBLICATIONS, SOUTH LANCASTER, PENN. 143P.
- SATTERTHWAIT, A.F. 1931. KEY TO KNOWN PUPAE OF THE GENUS CALENDRA, WITH HOST-PLANT AND DISTRIBUTION NOTES. ANN. ENT. SOC. AMER. 24:143-172; PLS. 1-3.
- VAURIE, P. 1951. REVISION OF THE GENUS CALENDRA (FORMERLY SPHENOPHORUS) IN THE UNITED STATES AND MEXICO (COLEOPTERA: CURCULIONIDAE). BULL. AMER. MUS. NAT. HIST. 98(2):33-186; 116 FIG.