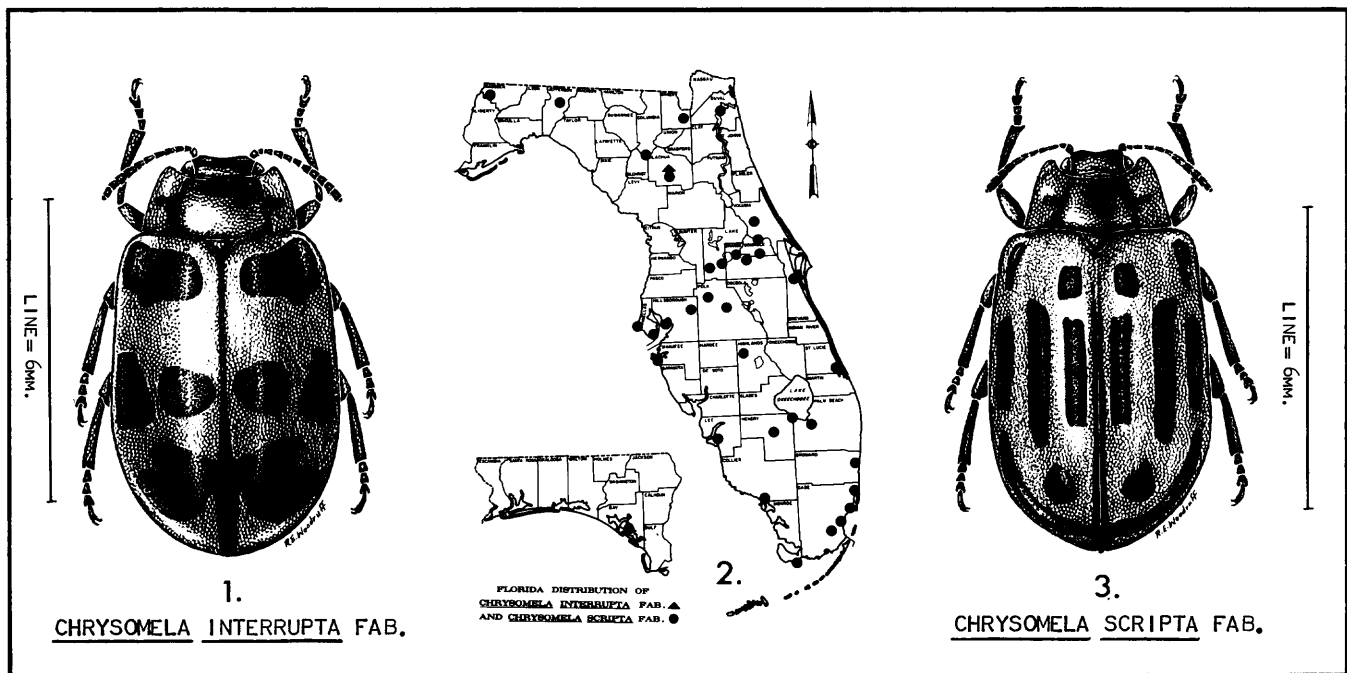


THE LEAF BEETLE GENUS CHRYSOMELA IN FLORIDA
(COLEOPTERA: CHRYSOMELIDAE)^{1/}

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INTRODUCTION: THE GENUS CHRYSOMELA CONTAINS TWO SPECIES IN FLORIDA, ONE OF WHICH (C. SCRIPTA FAB., FIG. 3) IS OFTEN DESTRUCTIVE TO WILLOWS AND POPLARS. THE OTHER SPECIES (C. INTERRUPTA FAB., FIG. 1) IS UNCOMMON AND OCCURS ONLY ON ALDER.

DESCRIPTION: BOTH SPECIES ARE SOMEWHAT VARIABLE IN GROUND COLOR AND IN THE PATTERN OF BLACK SPOTS OR BANDS. HOWEVER, THE COLOR PATTERNS SHOWN IN FIGS. 1 AND 3 ARE REPRESENTATIVE AND ARE DISTINCT IN THESE TWO SPECIES. SPECIES RELATED TO EACH HAVE SIMILAR PATTERNS, BUT THEY HAVE NOT BEEN FOUND IN FLORIDA. THE GROUND COLOR IN BOTH SPECIES IS YELLOWISH TO ORANGE WITH THE PRONOTAL AND ELYTRAL BORDERS ORANGE TO REDDISH. THE SPOTS AND BANDS ARE BLACK. THE CENTER OF THE PRONOTUM IS BLACK BUT OFTEN HAS A METALLIC GREEN OR BLUE SHEEN. BOTH SPECIES ARE ABOUT 1/4 INCH LONG, BUT C. SCRIPTA IS USUALLY LARGER THAN C. INTERRUPTA.



BIOLOGY: THE LIFE HISTORIES OF MOST SPECIES IN THE GENUS ARE NOT WELL KNOWN AND DETAILED STUDIES HAVE NOT BEEN CONDUCTED ON THESE BEETLES IN FLORIDA. A GENERALIZED ACCOUNT (BROWN 1956: 10-11) FOLLOWS, ALTHOUGH FLORIDA CONDITIONS PROBABLY MODIFY THE SITUATION. THE BEETLES USUALLY OVERWINTER AS SEXUALLY IMMATURE ADULTS IN PROTECTED PLACES, SUCH AS UNDER BARK, STONES, ETC. THEY LEAVE THESE SHELTERS EARLY IN THE SPRING WHEN NEW GROWTH APPEARS ON THE HOST PLANTS. ON THESE PLANTS THEY FORM COLONIES, AND MATING BEGINS SHORTLY AFTER FEEDING. ABOUT ONE WEEK LATER THE EGGS ARE LAID IN MASSES OF 25 TO 50 ON THE LEAVES. THERE ARE THREE LARVAL INSTARS AND THE COLOR MAY CHANGE AFTER THE FIRST INSTAR. BOTH PALE YELLOW AND BLACK LARVAL FORMS ARE FOUND WITHIN THE SAME COLONY. THE MATURE LARVA ATTACHES ITSELF TO A LEAF BY ITS CAUDAL DISC AND PUPATES WITHIN THE ANTERIOR PORTION OF THE LAST LARVAL SKIN. MORE

^{1/}CONTRIBUTION No. 64, ENTOMOLOGY SECTION.

THAN ONE GENERATION HAS BEEN FOUND IN EACH SPECIES IN AREAS NORTH OF FLORIDA. SEVERAL GENERATIONS PROBABLY OCCUR UNDER FLORIDA CONDITIONS. SPECIMENS OF C. SCRIPTA EXAMINED BEAR DATES BETWEEN MARCH AND SEPTEMBER WITH MOST SPECIMENS BEING FOUND IN APRIL, MAY, AND JUNE. THE TWO RECORDS FOR C. INTERRUPTA ARE BOTH FOR APRIL.

HOSTS: MOST MEMBERS OF THE GENUS ARE RELATIVELY HOST SPECIFIC. C. SCRIPTA IS MOST OFTEN FOUND ON WILLOW BUT WILL ALSO ATTACK POPLAR. ON ONE OCCASION IT WAS FOUND DAMAGING GOVERNOR'S PLUM (FLACOURTIA INDICA MERR.). OTHER HOST RECORDS FOR FLORIDA ARE: WEEPING WILLOW (SALIX BABYLONICA L.), COASTAL-PLAIN WILLOW (SALIX CAROLINIANA MICHX.), BLACK WILLOW (SALIX NIGRA MARSH.), LOMBARDI POPLAR (POPULUS NIGRA L. VAR. ITALICA DUROI). C. SCRIPTA HAS ALSO BEEN TAKEN IN STEINER TRAPS AND BLACKLIGHT TRAPS. C. INTERRUPTA IS MORE HOST SPECIFIC AND HAS BEEN FOUND ONLY ON HAZEL ALDER OR BLACK ALDER (ALNUS SERRULATA (AIT.) WILLD.).

ECONOMIC IMPORTANCE: DAMAGE BY C. SCRIPTA IS SOMETIMES EXTENSIVE ON ORNAMENTAL WILLOWS AND POPLARS. LEAVES ARE STRIPPED, AND THE CAST SKINS PRESENT AN UNSIGHTLY APPEARANCE. HOWEVER, MOST OF THE DAMAGE IS USUALLY CONFINED TO INDIVIDUAL TREES. DEFINITE CONTROL TESTS HAVE NOT BEEN CONDUCTED BUT THE BEETLES COULD PROBABLY BE CONTROLLED WITH DDT (2 LBS. OF 50% WETTABLE POWDER PER 100 GAL. WATER OR 2 TABLESPOONS PER GAL. OF WATER). LINDANE PROBABLY WOULD ALSO BE SATISFACTORY. FOLLOW INSTRUCTIONS ON THE LABEL CLOSELY!

DISTRIBUTION:^{2/} C. SCRIPTA OCCURS OVER MOST OF THE U. S. FROM CANADA TO FLORIDA, WEST TO NEW MEXICO AND WASHINGTON. IN FLORIDA IT PROBABLY OCCURS THROUGHOUT THE STATE (FIG. 2), THE LACK OF RECORDS FOR THE "PANHANDLE" PROBABLY REFLECTING INADEQUATE COLLECTING THERE. SPECIMENS IN THE FLORIDA STATE COLLECTION OF ARTHROPODS ARE FROM THE FOLLOWING LOCALITIES: APOPKA, AVON PARK, BELLE GLADE, BRADENTON, CHATTAHOOCHEE, CLEARWATER, CLEWISTON, COCOA, DELAND, DEVIL'S GARDEN, EVERGLADES, FERNDALE, FT. MYERS, GAINESVILLE, GLEN ST. MARY, HAINES CITY, HOMESTEAD, JACKSONVILLE, KENDALL, LAKE MONROE, LARGO, LOCKHART, MACCLENNY, MASCOTTE, MIAMI, MONTICELLO, NORTH MIAMI BEACH, OLENO STATE PARK, ORLANDO, ORANGEDALE, OVIEDO, PANAMA CITY, PLANT CITY, POMPANO BEACH, ST. LUCIE, ST. PETERSBURG, SANFORD, TAMPA, WINDERMERE, WINTER PARK. C. INTERRUPTA IS RECORDED FROM PENNSYLVANIA, SOUTH TO GEORGIA AND WEST TO ALABAMA. BROWN (1956: 27) DOES NOT RECORD IT FROM FLORIDA AND THE FOLLOWING REPRESENT THE FIRST PUBLISHED FLORIDA RECORDS: ALACHUA COUNTY, FLA., 2 MI. N. E. OF GAINESVILLE, 21-IV-64, E. M. COLLINS, JR., ON ALDER; ALACHUA COUNTY, FLA., AUSTIN CARY FOREST, 4-IV-64, L. A. HETRICK, ALNUS SPECIES. SINCE THIS SPECIES IS HOST SPECIFIC ON ALNUS SERRULATA, ITS DISTRIBUTION IS PROBABLY LIMITED TO THAT OF THE PLANT. WEST AND ARNOLD (1956: 32) RECORDED ALDER FROM "...NORTHERN AND CENTRAL FLORIDA AS FAR SOUTH AS ALACHUA AND PUTNAM COUNTIES WHERE IT MAY FREQUENTLY BE FOUND ALONG STREAM BANKS, IN WET THICKETS, AND IN LOW WOODS."

TAXONOMY: THERE ARE 19 SPECIES IN AMERICA NORTH OF MEXICO AND A SINGLE SPECIES ENDEMIC TO CUBA. THE GENUS CHRYSOMELA IS A DIFFICULT ONE BECAUSE MUSEUM SPECIMENS CANNOT ALWAYS BE IDENTIFIED TO SPECIES. HOWEVER, THE TWO FLORIDA SPECIES ARE QUITE DISTINCT AND EASILY SEPARATED ON THE BASIS OF COLOR PATTERN (FIGS. 1 AND 3).

REFERENCES:

BLATCHLEY, W. S. 1924. THE CHRYSOMELIDAE OF FLORIDA. FLA. ENT. 8:1-7.

BROWN, W. J. 1956. THE NEW WORLD SPECIES OF CHRYSOMELA L. (COLEOPTERA: CHRYSOMELIDAE). CANADIAN ENT. 88(SUPPL. 3): 1-54.

WEST, E. AND L. E. ARNOLD. 1956. THE NATIVE TREES OF FLORIDA. UNIV. FLORIDA PRESS, GAINESVILLE. xx + 218 p.

^{2/} THE AUTHOR WISHES TO THANK DR. D. B. WARD, UNIVERSITY OF FLORIDA HERBARIUM, FOR INFORMATION ON THE DISTRIBUTION OF ALNUS IN FLORIDA.