

THE TORTOISE BEETLES OF FLORIDA III, EURYPEPLA CALOCHROMA FLORIDENSIS BLAKE  
(COLEOPTERA: CHRYSOMELIDAE)<sup>1</sup>

ROBERT E. WOODRUFF<sup>2</sup>

**INTRODUCTION:** IN ENTOMOLOGY CIRCULARS 35 AND 155 I TREATED 2 EASILY RECOGNIZED FLORIDA TORTOISE BEETLES (WOODRUFF, 1965, 1975). THE PRESENT SPECIES, EURYPEPLA CALOCHROMA FLORIDENSIS BLAKE, IS ANOTHER DISTINCTIVE ONE, THE LARGEST IN THE STATE, AND CONFINED TO THE SOUTHERN TIP OF THE PENINSULA AND THE KEYS.

**DESCRIPTION:** THE ADULT (FIG. 3) IS OVAL, CONVEX, TORTOISE-SHAPED, AND THE CARAPACE IS PUNCTATE, GLABROUS, WITH FEW MARKINGS. THE COLOR IS VARIABLE AS IN MANY OTHER CASSIDINAE, DEAD SPECIMENS LOSING ALL THEIR BRILLIANT METALLIC SHEEN. IN THIS CASE THE LIVE BEETLES ARE A SPECTACULAR SHINY LIME GREEN AND SOMETIMES DIFFICULT TO SEE ON HOST LEAVES. DEAD MUSEUM SPECIMENS ARE SOMETIMES NOT ASSOCIATED WITH LIVE ONES BECAUSE OF THE DRASTIC COLOR CHANGE. DEAD SPECIMENS ARE DULL YELLOW TO CREAM-COLORED, AND OPAQUE TO TRANSLUCENT ON THE CARAPACE MARGINS. LENGTH VARIES FROM 8 TO 10.5MM; WIDTH FROM 7.8 TO 8.2MM.

IN DESCRIBING THE FLORIDA SUBSPECIES, BLAKE (1966) STATED THAT "...ON THE PRONOTUM THERE IS A TINY MEDIAN BASAL SPOT AND USUALLY A FAINTER LATERAL SPOT ON EACH SIDE, AND ALSO A DARK SPOT IN THE MIDDLE OF EACH ELYTRON, TO DISTINGUISH IT FROM E. JAMAICENSIS AS WELL AS TYPICAL E. CALOCHROMA." HOWEVER, SHE SAW ONLY 6 FLORIDA SPECIMENS. I HAVE EXAMINED OVER 500 SPECIMENS AND FIND THE MARKINGS EXTREMELY VARIABLE. THE MEDIAN PRONOTAL SPOT DOES NOT REACH THE BASE IN ANY SPECIMENS THAT I EXAMINED. IT IS USUALLY ELONGATE, SOMETIMES AN ELONGATE DIAMOND SHAPE, AND EXTENDS FROM JUST BEHIND THE MIDDLE FOR HALF THE DISTANCE TO THE BASE. IN NONE OF THESE SPECIMENS ARE THERE ANY "LATERAL SPOTS." THE TRUE PATTERN IS DIFFICULT TO DISCERN IN TRANSLUCENT TORTOISE BEETLES BECAUSE SOME SHOW THE CARAPACE SURFACE, BUT OTHERS HAVE AREAS SHOWING THROUGH FROM BENEATH. IN OPAQUE SPECIMENS (OBTAINED BY DEGREASING WITH BARBER'S SOLUTION) THE ELYTRA ARE NEARLY UNIFORMLY CREAM-COLORED, WITH NO DARK SPOTS OR MARKINGS, AND THE PRONOTAL MEDIAN SPOT IS DARK BLACK.

THE LARVA (FIG. 1) IS TYPICAL FOR TORTOISE BEETLES, BUT APPARENTLY HAS NOT BEEN PREVIOUSLY DESCRIBED OR FIGURED. IT IS BROAD, LADY BEETLE LARVA-SHAPED, WITH LATERAL SPINES AND PROJECTIONS FROM THE ANTERIOR PART OF THE PRONOTUM TO THE ANTEPENULTIMATE ABDOMINAL SEGMENT. THE LEGS ARE SHORT AND BLUNT WITH A SINGLE TERMINAL CLAW. THE HEAD IS SOMEWHAT FLATTENED AND HIDDEN BENEATH THE PRONOTUM. THE COLOR IS BASICALLY BLACK WITH A MEDIAN WHITISH STRIPE AND MARKINGS AS SHOWN IN FIG. 1.

THE PUPA (FIG. 2) RETAINS MANY OF THE LARVAL FEATURES, INCLUDING LATERAL ABDOMINAL PROJECTIONS. IT IS SHORTER AND BROADER, BUT THIS VARIES WITH THE EXTENT OF HARDENING AND CONDITION OF PRESERVATION. THE DORSAL SURFACE IS TUBERCULATE, NEARLY GRANULAR ON SOME OF THE PRONOTUM. THE COLOR IS DARK TAN WITH FAINT LIGHTER MARKINGS, ESPECIALLY ON THE PRONOTUM WHERE THERE IS A CRISP MEDIAN LONGITUDINAL LINE AND AN IRREGULAR TRANSVERSE BAND IN THE CENTER, NOT REACHING THE SIDES. THE ANTERIOR MARGIN OF EACH SIDE HAS 2 LARGER CURVED PROJECTIONS ALONG WITH NUMEROUS SMALLER TUBERCLES. THE GENERAL APPEARANCE IS DISTINCTIVE.

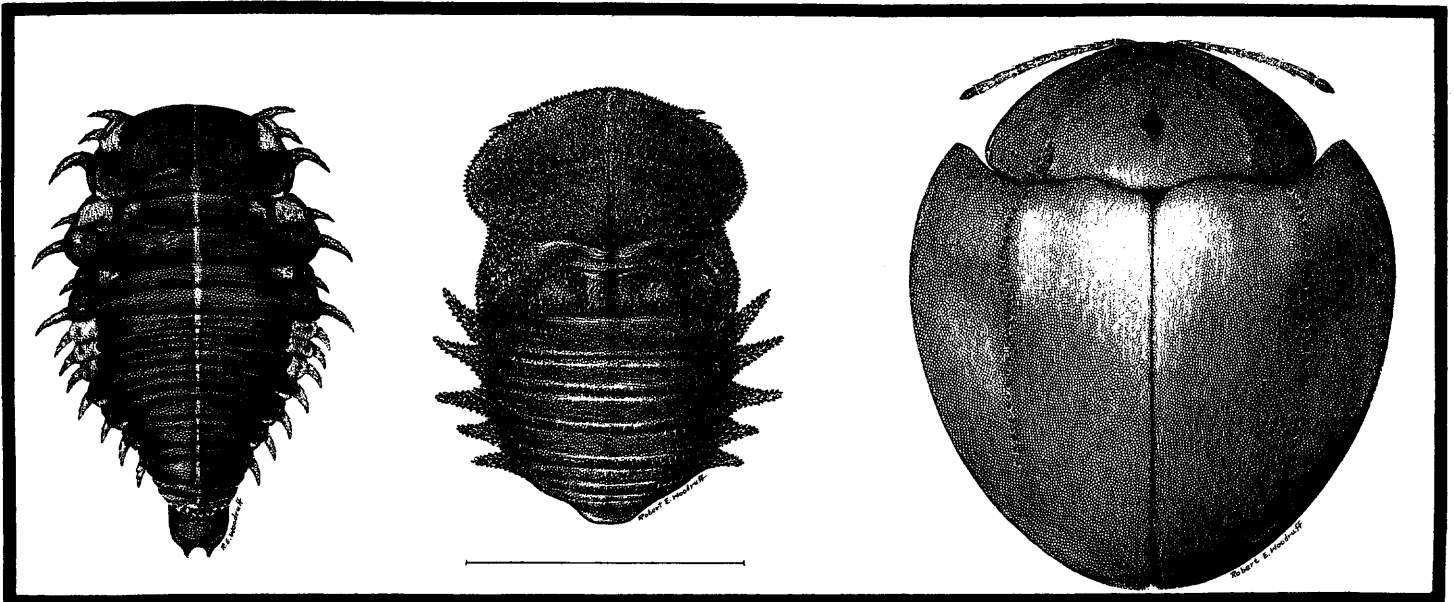


FIG. 1-3 EURYPEPLA CALOCHROMA FLORIDENSIS BLAKE: 1) LARVA, 2) PUPA, 3) ADULT (LINE = 5MM).

**TAXONOMY:** UNTIL 1966 THIS BEETLE HAD BEEN IDENTIFIED AS EURYPEPLA JAMAICENSIS (LINNAEUS). AT THAT TIME MRS. BLAKE DESCRIBED THE FLORIDA POPULATION AS A SUBSPECIES (FLORIDENSIS) OF A BAHAMAN SPECIES (CALOCHROMA) WHICH SHE HAD DESCRIBED IN 1965. AFTER EXAMINING THE LARGE SERIES FROM FLORIDA, I BELIEVE THAT ALL MEMBERS OF THE GENUS NEED FURTHER STUDY. CONSIDERING THAT ALL MAY BE RELATIVELY HOST SPECIFIC TO THE PLANT GENUS CORDIA, (PERHAPS EVEN TO THE SPECIES SEBESTENA), SUBSPECIES ARE UNLIKELY IF THE POPULATIONS OF BEETLES RESULTED FROM INTRODUCED PLANTS. BARBER (1916) SUGGESTED THAT "E. BREVLINAEATA BOH. FROM YUCATAN MAY NOT BE DISTINCT FROM THIS SPECIES."

<sup>1/</sup> CONTRIBUTION No. 365, BUREAU OF ENTOMOLOGY

<sup>2/</sup> TAXONOMIC ENTOMOLOGIST, DIV. PLANT IND., P.O. Box 1269, GAINESVILLE, FL 32602

**HOSTS:** ALL FLORIDA FEEDING AND LARVAL RECORDS ARE FROM THE GEIGER TREE, CORDIA SEBESTENA LINNAEUS (= C. SPECIOSA WILLD.). THE FLORIDA STATE COLLECTION OF ARTHROPODS CONTAINS RECORDS OF SCATTERED ADULTS ON CITRUS, WILD FIG, AND WILD COTTON, BUT THESE ARE PROBABLY ACCIDENTAL OR NON-FEEDING RECORDS. BLAKE (1966) ALSO LISTED IT FROM AVOCADO, WITH NO INDICATION WHETHER FEEDING WAS INVOLVED.

THE GENUS CORDIA CONTAINS ABOUT 230 SPECIES (BAILEY, 1942) OF WHICH SEBESTENA IS THE ONLY TREE-LIKE, RED-FLOWERED SPECIES FOUND IN FLORIDA. I HAVE MADE A SPECIAL EFFORT TO DETERMINE WHETHER THE SPECIES IS NATIVE TO FLORIDA OR WAS A VERY EARLY INTRODUCTION. LITTLE (1953:118) STATED THAT "THE COMMON NAME HONORS THE MAN WHO REPORTEDLY FIRST PLANTED THIS TREE AT KEY WEST, FLA." IN A LATER PUBLICATION (LITTLE ET AL., 1974) HE STATED THAT THE NAME "...HONORS JOHN GEIGER, A SHIP PILOT OF THE EARLY 19TH CENTURY, WHO FIRST PLANTED THIS TREE AT KEY WEST, FLORIDA." THESE STATEMENTS IMPLY INTRODUCTION, BUT I HAVE NOT BEEN ABLE TO VERIFY THIS. OTHER BOTANICAL LITERATURE (WEST & ARNOLD, 1956; MENNINGER, 1962) SUGGESTS THAT IT IS NATIVE TO SOUTH FLORIDA. IT APPEARS TO HAVE A WIDE DISTRIBUTION INCLUDING FLORIDA, THE WEST INDIES, GRAND CAYMAN, AND IS CULTIVATED IN BOTH THE OLD AND NEW WORLD TROPICS (ADAMS, 1972). LITTLE (1953) LISTED IT ALSO FROM SOUTHERN MEXICO (YUCATAN) SOUTH TO NORTHERN SOUTH AMERICA. IN FLORIDA IT GROWS WILD ON THE KEYS AND IS CULTIVATED COMMONLY NORTH OF THAT, BUT IT IS SUSCEPTIBLE TO FROST.

IN ADDITION TO GEIGER TREE, COMMON NAMES FOR CORDIA SEBESTENA ARE AS FOLLOWS (WITH GEOGRAPHIC ORIGIN IN PARENTHESES): VOMITEL COLORADO (PUERTO RICO & CUBA); ANACONDA, CEREZA AMARILLA, SAN BARTOLOMÉ (PUERTO RICO); AVELANO CRIOLLO (DOMINICAN REPUBLIC); ANACAQUITA (CUBA); ANACAHUITA (MEXICO); SIRICOTE (MEXICO, GUATEMALA); SAN JOAQUIN (COLOMBIA); JOAQUIN, NO-ME-OLVIDES (VENEZUELA); SCARLET CORDIA (BARBADOS & JAMAICA); COQUELICOT, PETIT SOLEIL (HAITI); SCARLET ACCORDIA, SCARLET FLOWER, CAWARA SPANO, MANHAGE (DUTCH ANTILLES) (LITTLE ET AL., 1974).

**DISTRIBUTION:** IN FLORIDA E. C. FLORIDENSIS HAS BEEN FOUND FROM PALM BEACH IN THE NORTH TO KEY WEST IN THE SOUTH. SPECIFIC RECORDS ARE AS FOLLOWS: BROWARD CO.: DANIA, FT. LAUDERDALE, HOLLYWOOD; DADE CO.: CORAL GABLES, CUTLER (BLATCHLEY'S 1924 RECORD OF "CUTTER" IS PROBABLY A MISSPELLING OF THIS); HOMESTEAD, LITTLE RIVER, MIAMI, N. MIAMI BEACH; MONROE CO.: BOCA GRANDE KEY, KEY LARGO, KEY WEST, MARATHON, PIGEON KEY, STOCK ISLAND, SUGAR LOAF KEY, TAVERNIER; PALM BEACH CO.: BOYNTON BEACH, DELRAY BEACH, LAKE WORTH, WEST PALM BEACH.

AS MENTIONED UNDER TAXONOMY ABOVE, SPECIMENS OF THE GENUS EURYPEPLA REQUIRE FURTHER STUDY BEFORE THE EXACT STATUS OF SEVERAL SPECIES CAN BE DETERMINED. DESCRIBED SPECIES AND THEIR DISTRIBUTIONS ARE AS FOLLOWS: BREVILINEATA BOH. FROM YUCATAN, CALOCHROMA CALOCHROMA (BLAKE) FROM ANDROS ISLAND, BAHAMAS, CALOCHROMA FLORIDENSIS BLAKE FROM SOUTHERN FLORIDA, JAMAICENSIS (L.) FROM JAMAICA, AND VITREA BOH. FROM CUBA.

**ECONOMIC IMPORTANCE:** ALTHOUGH OFTEN ABUNDANT ON GEIGER TREE, THIS TORTOISE BEETLE RARELY CAUSES SEVERE INJURY. LEAVES ARE DAMAGED, BUT THE TREE QUICKLY RECOVERS. NO INSECTICIDE TESTS HAVE BEEN CONDUCTED, AND NONE ARE CURRENTLY RECOMMENDED.

**REFERENCES:**

- ADAMS, C. D. 1972. FLOWERING PLANTS OF JAMAICA. R. MACLEHOSE & Co., LTD., UNIV. PRESS, GLASGOW, SCOTLAND. 848p.
- BAILEY, L. H. 1942. THE STANDARD CYCLOPEDIA OF HORTICULTURE. VOL. I. MACMILLAN Co., NEW YORK. 1200p.
- BARBER, H. S. 1918. A REVIEW OF NORTH AMERICAN TORTOISE BEETLES (CHRYSOMELIDAE: CASSIDINAE). PROC. ENT. SOC. WASHINGTON 18(2):113-127.
- BLACKWELDER, R. E. 1946. CHECKLIST OF THE COLEOPTEROUS INSECTS OF MEXICO, CENTRAL AMERICA, THE WEST INDIES, AND SOUTH AMERICA. PART 4. U. S. NAT. MUS. BULL. 185:551-763.
- BLAKE, D. H. 1965. TWELVE NEW SPECIES OF CHRYSOMELID BEETLES FROM THE WEST INDIES (COLEOPTERA, CHRYSOMELIDAE). AMER. MUS. NOVITATES 2217:1-13; 14 FIG.
- BLAKE, D. H. 1966. TEN NEW CHRYSOMELID BEETLES FROM THE WEST INDIES AND KEY WEST. PROC. ENT. SOC. WASHINGTON 68(3):213-225; 15 FIG.
- BLATCHLEY, W. S. 1924. THE CHRYSOMELIDAE OF FLORIDA. FLORIDA ENT. 8(3-4):33-46.
- BOHEMAN, C. H. 1854. MONOGRAPHIA CASSIDARUM 2:1-506; 2 PL.
- HINCKS, W. D. 1952. THE GENERA OF THE CASSIDINAE (COLEOPTERA: CHRYSOMELIDAE). TRANS. ROY. ENT. SOC. LONDON 103(10):327-362; 4 PL.
- LENG, C. W. 1920. CATALOGUE OF THE COLEOPTERA OF AMERICA, NORTH OF MEXICO. JOHN D. SHERMAN, JR., MT. VERNON, N.Y. 470p.
- LINNAEUS, C. VON. 1758. SYSTEMA NATURAE PER REGNA TRIA NATURAE, SECUNDUM CLASSES, ORDINES, GENERA, SPECIES CUM CHARACTERIBUS, DIFFERENTIS, SYNONYMIS, LOCIS. TOMUS I. EDITIO DECIMA, REFORMATA. LAURENTII SALVII, HOLMIAE. 824p.
- LITTLE, E. L., JR. 1953. CHECK LIST OF NATIVE AND NATURALIZED TREES OF THE UNITED STATES (INCLUDING ALASKA). USDA AGR. HANDBOOK 41:1-472.
- LITTLE, E. L., JR., R. O. WOODBURY, AND F. H. WADSWORTH. 1974. TREES OF PUERTO RICO AND THE VIRGIN ISLANDS. USDA AGR. HANDBOOK 449(2):1-1024.
- MENNINGER, E. A. 1962. FLOWERING TREES OF THE WORLD FOR TROPICS AND WARM CLIMATES. HEARTHESIDE PRESS, INC., NEW YORK. 336p.
- WEST, E., AND L. E. ARNOLD. 1956. NATIVE TREES OF FLORIDA. UNIV. FLORIDA PRESS, GAINESVILLE, FLORIDA. 218p.
- WOODRUFF, R. E. 1965. A TORTOISE BEETLE (HEMISPHEROTA CYANEA (SAY)) ON PALMS IN FLORIDA (COLEOPTERA: CHRYSOMELIDAE). FLORIDA DEPT. AGR., DIV. PLANT IND., ENT. CIRC. 35:1-2; 4 FIG.
- WOODRUFF, R. E. 1975. THE TORTOISE BEETLES OF FLORIDA II, PLAGIOMETRIONA CLAVATA (FAB.). FLORIDA DEPT. AGR., DIV. PLANT IND., ENT. CIRC. 155:1-2; 5 FIG.