

A SOUTH AMERICAN LEAF BEETLE PEST OF CRUCIFERS IN FLORIDA
(COLEOPTERA: CHRYSOMELIDAE)¹

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INTRODUCTION: *MICROTHERCA OCHROLOMA* STAL WAS FIRST RECORDED IN THE UNITED STATES FROM MOBILE, ALABAMA, 20 MARCH 1947, WHERE IT WAS A PEST OF TURNIP, CABBAGE, COLLARD, MUSTARD, AND RADISH (CHAMBERLIN AND TIPPIN, 1949). GENTRY (1954) REPORTED IT ALSO FROM MARENGO COUNTY, ALABAMA, ON IRISH POTATO. IN 1956 (ANONYMOUS) IT WAS REPORTED FOR THE FIRST TIME IN LOUISIANA (TANGIPAHOA PARISH) ON MUSTARD GREENS. LATER ITS DISTRIBUTION WAS LISTED AS 22 COUNTIES IN 4 STATES (ANONYMOUS, 1962). ALTHOUGH EDWARDS (1949) LISTED THE SPECIES FROM "ALABAMA AND FLORIDA," THERE APPEARS TO BE NO SUBSTANTIATION FOR A FLORIDA RECORD UNTIL IT WAS FOUND AT TAMPA ON 4 APRIL 1972. AT THAT TIME IT WAS FOUND ON WATERCRESS (*NASTURTIUM OFFICINALE* R. BR.) AT AN AQUATIC NURSERY BY DPI PLANT SPECIALIST E. R. SIMMONS. SUBSEQUENT SURVEYS FROM 1972 TO 1974 HAVE NOT PRODUCED ADDITIONAL RECORDS EXCEPT AT THE ORIGINAL FIND. THIS CIRCULAR IS PREPARED TO ACQUAINT REGULATORY PERSONNEL WITH THE BEETLE IN ORDER TO FACILITATE DETECTION DURING FUTURE SURVEYS.

DESCRIPTION: (FIG. 1). THIS IS A TYPICAL LEAF BEETLE (CHRYSOMELIDAE), ABOUT 5 MM LONG, BRONZY BLACK TO DARK BROWN, WITH YELLOW TO WHITISH MARGINS AROUND THE ELYTRA (THE BASIS FOR THE COMMON NAME "YELLOW-MARGINED LEAF BEETLE"). THE THIRD TARSAL SEGMENT IS BILOBED AND THERE ARE 4 PROMINENT ROWS OF PUNCTURES ON EACH ELYTRON. THE EGGS ARE BRIGHT ORANGE, ELONGATE, AND LAID SINGLY OR IN SMALL GROUPS. THE LARVA IS YELLOW-BROWN, NOTICEABLY PUBESCENT, WITH A DARK HEAD CAPSULE. THE MATURE LARVA SPINS A PECULIAR BLACKISH NETWORK AROUND ITSELF PRIOR TO PUPATION. PUPAL CASES (FIG. 3) ARE ATTACHED TO THE UNDERSIDES OF LEAVES, AND THEIR DARK COLOR STANDS OUT AGAINST THE GREEN FOLIAGE BACKGROUND.

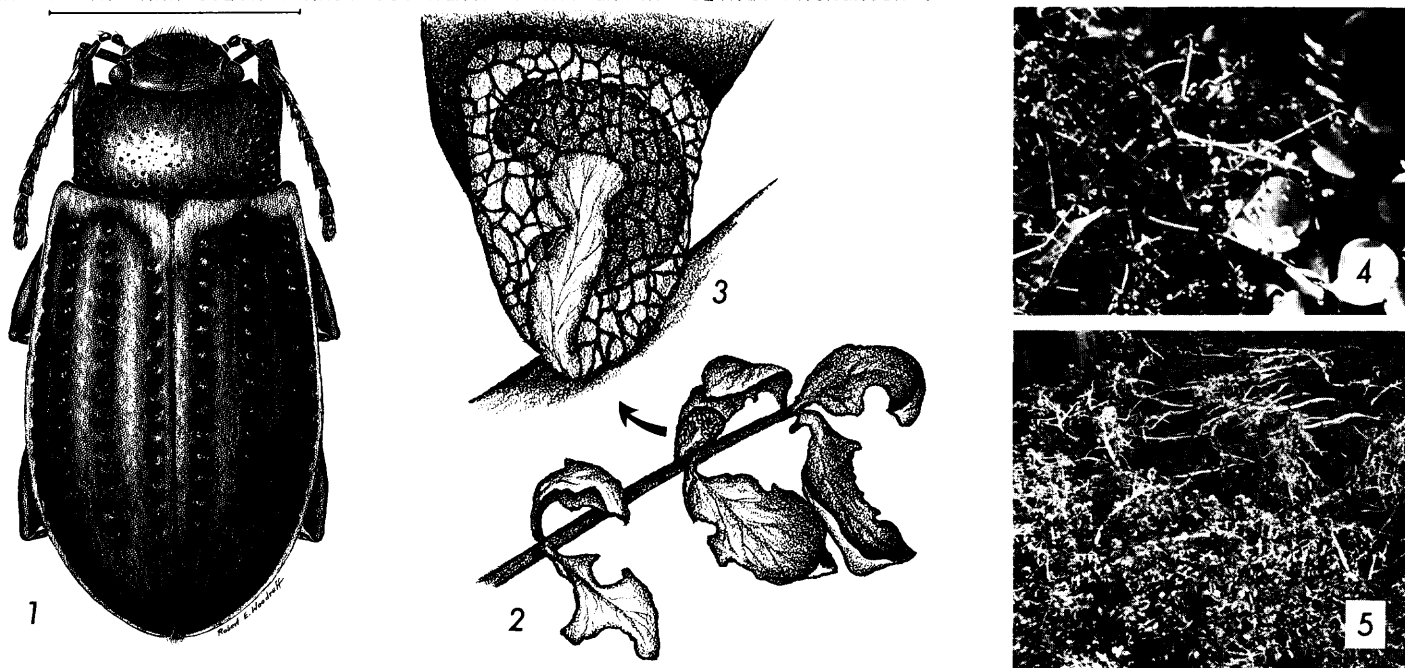


FIG. 1: ADULT MALE *MICROTHERCA OCHROLOMA*, LINE = 2 MM. FIG. 2: STEM OF WATERCRESS SHOWING DAMAGE AND PUPAL CASE AT ARROW, ENLARGED IN FIG. 3. FIG. 3: PREPUPAL LARVA INSIDE NET-LIKE PUPAL CASE. FIG. 4: WATERCRESS DEFOLIATED BY BEETLES. FIG. 5: LARGE AREA OF WATERCRESS SEVERELY DAMAGED BY BEETLES; THIS PLANTING HAS SINCE SUCCEMDED.

TAXONOMY: THE GENUS *MICROTHERCA* WAS MOST RECENTLY TREATED BY JOLIVET (1950), WHO INCLUDED 14 SPECIES. ALTHOUGH SOME PREVIOUS AUTHORS LISTED *M. PUNCTIGERA* ACHARD AS A SYNONYM OF *M. OCHROLOMA*, JOLIVET RECOGNIZED BOTH AS DISTINCT SPECIES ON THE BASIS OF GENITALIC DIFFERENCES. NO OTHER SYNONYMS ARE LISTED IN THE LITERATURE.

HOSTS & BIOLOGY: THE NORMAL HOSTS FOR THIS SPECIES ARE ALL IN THE PLANT FAMILY CRUCIFERAE. BOSQ (1938) REPORTED THE DESTRUCTION OF 500 HECTARES OF TURNIPS IN ARGENTINA. HAYWARD (1942) AND GENTRY (1954) REPORTED DAMAGE ON POTATO FOLIAGE. CHAMBERLIN AND TIPPINS (1949) REPORTED ALABAMA INFESTATIONS ON GARDEN PLANTINGS OF CABBAGE, COLLARD, MUSTARD, TURNIP, AND RADISH. THEY FOUND NO DAMAGE TO COMMERCIAL PLANTINGS, BUT THE POTENTIAL ON THESE CROPS IS APPARENT. ADULTS AND LARVAE OFTEN DEFOLIATE THE HOST. LARVAE, ESPECIALLY EARLY INSTARS, WORK IN GROUPS TO STRIP INDIVIDUAL STEMS.

LITTLE INFORMATION IS AVAILABLE ON THE LIFE CYCLE. SPECIMENS HAVE BEEN COLLECTED DURING APRIL AND JUNE IN FLORIDA. BOSQ (1938) REPORTED IT MOST COMMON DURING MARCH IN ARGENTINA. IT HAS BEEN SUGGESTED

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THAT THE DECLINE IN BEETLE POPULATIONS IN JUNE INDICATES AESTIVATION DURING THE SUMMER (ANONYMOUS, 1962). HE ALSO FOUND THE PUPAL CASES ON OR JUST BELOW THE SOIL SURFACE (IN A SEVERE TURNIP INFESTATION). THE PUPAL CASES FOUND ON WATERCRESS LEAVES MAY BE AN ADAPTATION TO AN AQUATIC SITUATION.

IN FLORIDA, WATERCRESS IS AN IMPORTANT CROP IN A FEW AREAS, ESPECIALLY NEAR OVIEDO WHERE THERE IS A 150-ACRE COMMERCIAL PRODUCTION. MOST OF THE PRODUCTION IS ICED AND SHIPPED THROUGHOUT THE EASTERN UNITED STATES AND CANADA. COMMERCIAL PRODUCTION ALSO EXISTS IN CUBA, ENGLAND, CHINA, FRANCE, ITALY, AND SWITZERLAND. AT THE AQUATIC NURSERY IN TAMPA THE PLANT WAS GROWN ONLY FOR THE OWNER'S CONSUMPTION. AS A RESULT OF THE BEETLE DEFOLIATION, OVERCROWDING BY WATER HYACINTHS, AND RECENT FLOODING, THIS PLANTING APPEARS TO HAVE BEEN ELIMINATED. NO WATERCRESS PLANTS OR BEETLES WERE FOUND ON RECENT SURVEYS (SEPTEMBER 1974).

DISTRIBUTION: OUTSIDE THE UNITED STATES IT IS KNOWN FROM ARGENTINA, BRAZIL, CHILE, AND URUGUAY (ANONYMOUS, 1962). CHAMBERLIN AND TIPPINS (1949) REPORTED IT FROM ALABAMA: MOBILE COUNTY: MOBILE, SPRINGHILL, THEODORE; AND BALDWIN COUNTY: NEAR LOXEY, NEAR FOLEY. IT HAS SINCE BEEN RECORDED FROM MARENGO COUNTY (GENTRY, 1954) AND TANGIPAHOA PARISH, LOUISIANA (ANONYMOUS, 1956). IN FLORIDA IT IS KNOWN ONLY FROM A SINGLE NURSERY IN TAMPA, HILLSBOROUGH COUNTY.

CONTROL: I HAVE FOUND NO CONTROL RECOMMENDATIONS IN THE LITERATURE. CHAMBERLIN AND TIPPINS (1949) MENTIONED THAT A "...HEAVY DOSAGE OF A DUST MIXTURE CONTAINING 0.75 PER CENT OF ROTENONE...[ON NEW CABBAGE SETS] APPARENTLY KILLED ALL THE ADULTS AND LARVAE PRESENT AT THAT TIME." THIODAN (ENDOSULFAN) (1 LB ACTIVE/ACRE) AND MALATHION (2 LB ACTIVE/ACRE) ARE CLEARED FOR USE ON WATERCRESS IN FLORIDA, AS LONG AS NOT APPLIED WITHIN 7 DAYS OF HARVEST.

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