

A BLOTCH LEAFMINER, AMAUROMYZA MACULOSA (MALLOCH)
(DIPTERA: AGROMYZIDAE) PEST OF CHRYSANTHEMUM^{1/}

H. V. WEEMS, JR. AND G. W. DEKLE

SYNONYMY: AGROMYZA MACULOSA MALLOCH, 1913:302. HOLOTYPE FEMALE FROM JAMAICA, NEW YORK, IN U. S. NATIONAL MUSEUM OF NATURAL HISTORY.

PHYTOBIA (AMAUROMYZA) MACULOSA FRICK, 1952:393.

INTRODUCTION: A BLOTCH LEAFMINER, AMAUROMYZA MACULOSA (MALLOCH), IS A PEST OF DOORYARD PLANTINGS OF CHRYSANTHEMUM THROUGHOUT MOST OF FLORIDA. IT IS NOT AN IMPORTANT PEST OF COMMERCIAL CHRYSANTHEMUMS IN THE PRINCIPAL COMMERCIAL PLANTING AREAS OF BRADENTON-Ft. MYERS AND STUART-DELRAY BEACH. THIS SPECIES, WHICH, ACCORDING TO SPENCER AND STEGMAIER (1973), PROBABLY EVOLVED IN SOUTH AMERICA AND HAS EXTENDED ITS RANGE INTO NORTH AMERICA SINCE THE END OF THE PLEISTOCENE PERIOD, MAY BE DISTINGUISHED READILY FROM RELATED SPECIES BY THE VARIEGATED COLOR OF THE HALTERES OF THE ADULT FLIES. THE LARGE BLOTCH MINES, PRODUCED ON FOLIAGE BY THE FEEDING OF THE LARVAE, ARE SIMILAR TO THOSE PRODUCED BY LARVAE OF ANOTHER AGROMYZID FLY, NEMORIMYZA POSTICATA (MEIGEN), WHICH ALSO OCCURS IN FLORIDA, USUALLY ON SOLIDAGO AND ASTER.

DISTRIBUTION: THROUGHOUT MOST OF THE UNITED STATES, INCLUDING FLORIDA AND HAWAII; ANTILLES, BAHAMAS, BERMUDA, COSTA RICA, ARGENTINA, BRAZIL, URUGUAY, VENEZUELA.

HOSTS: POLYPHAGOUS ON COMPOSITAE; KNOWN HOSTS IN FLORIDA INCLUDE BACCHARIS, BIDENS, CHRYSANTHEMUM, EMILIA, ERECHTITES, EUPATORIUM, GAILLARDIA, GNAPHALIUM, HELIANTHUS, MELANTHERA, SENECIO, SONCHUS, AND TAGETES. RECORDED HOSTS ELSEWHERE INCLUDE ARCTIUM, ARTEMISIA, ASTER, ERIGERON, LACTUCA, AND XANTHIUM.

IDENTIFICATION: THE ADULT IS A SMALL, SHINY BLACK, CLEAR-WINGED FLY 2.2-2.7 MM LONG (FIG. 1 A). HEAD ENTIRELY BLACK; MESONOTUM SHINING BLACK; PLEURA AND LEGS ENTIRELY BLACK; SQUAMAE AND FRINGE SILVERY WHITE; HALTERES VARIEGATED, PRIMARILY WHITE, BUT KNOB WITH A CONSPICUOUS BLACK AREA ABOVE; WING LENGTH 2.2-2.7 MM. LARVAE ARE YELLOWISH WHITE, ABOUT 3 MM LONG, AND MAKE BLOTCH-LIKE TUNNELS WITHIN LEAVES WHERE THESE LARVAE ARE READILY VISIBLE AS THEY FEED (FIG. 1 B & 3).

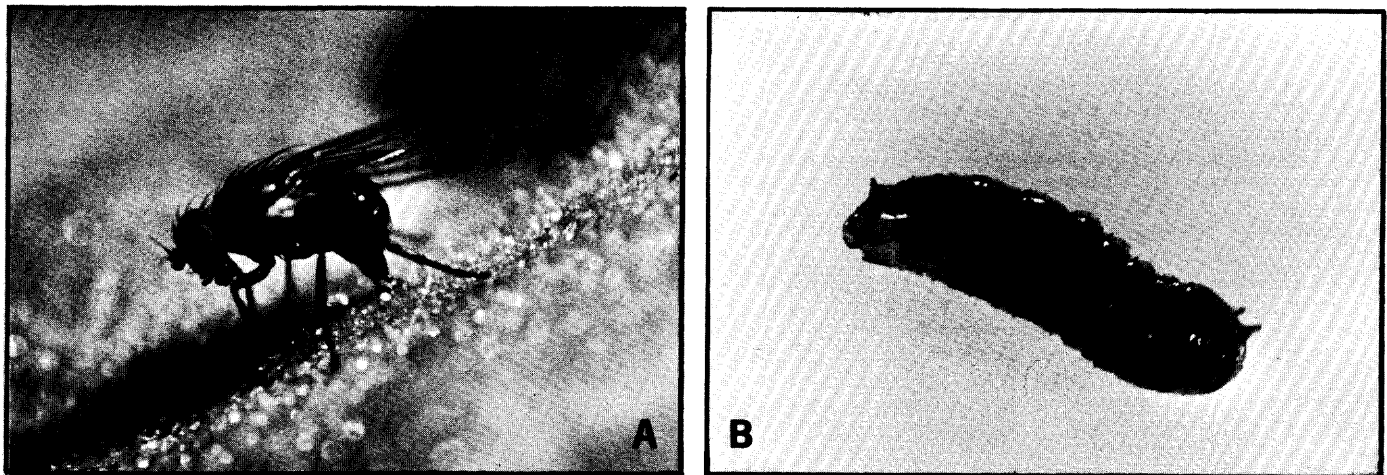


FIG. 1. AMAUROMYZA MACULOSA (MALLOCH), A CHRYSANTHEMUM BLOTCH LEAFMINER: A. ADULT FEMALE (♀) OVIPOSITING IN A CHRYSANTHEMUM LEAF (X10). B. MATURE LARVA (X20).

LEAF DAMAGE: FEEDING LARVAE CAUSE CONSPICUOUS BLOTCH MINES IN FOLIAGE BEFORE THEY EMERGE AND PUPATE EXTERNALLY (FIG. 2 A). INJURY TO FOLIAGE BY MINES AND OVIPOSITION PUNCTURES CAUSES PLANT TO BE UNSIGHTLY (FIG. 2 A & B, & 4). HEAVY INFESTATIONS MAY CAUSE SOME LEAF MORTALITY. THREE TO SIX LARVAE ARE COMMON IN A SINGLE LEAF, FREQUENTLY FORMING A LARGE COMMUNITY MINE.

CONTROL: SPRAYS OF DIAZINON, DIMETHOATE (CYGON OR DE-FEND), LINDANE OR META-SYSTOX-R ARE THE INSECTICIDES RECOMMENDED FOR HOMEOWNER USE. READ MANUFACTURER'S LABEL CAREFULLY FOR DOSAGE RATES, GENERAL INFORMATION AND PRECAUTIONS. PEST MANAGEMENT PROGRAMS FOR COMMERCIAL PRODUCTION OF CHRYSANTHEMUMS ARE SUFFICIENT TO CONTROL A. MACULOSA.



FIG. 2. FOLIAR DAMAGE: A. LEAF WITH MINES AND OVIPOSITION PUNCTURES. B. PLANT SEVERELY INFESTED.

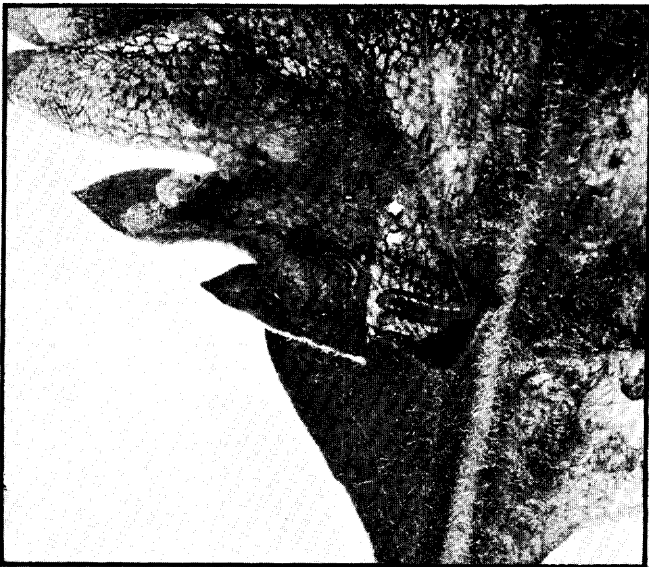


FIG. 3. BLOTCH MINE IN LEAF OPENED TO EXPOSE FEEDING LARVA (X5).



FIG. 4. OVIPOSITION PUNCTURES IN LEAF (GREATLY ENLARGED).

REFERENCES:

- FRICK, K. E. 1952. A GENERIC REVISION OF THE FAMILY AGROMYZIDAE (DIPTERA) WITH A CATALOGUE OF NEW WORLD SPECIES. CALIFORNIA UNIV. PUB. ENT. 8:339-452, 34 FIG.
- FRICK, K. E. 1959. SYNOPSIS OF THE SPECIES OF AGROMYZID LEAFMINERS DESCRIBED FROM NORTH AMERICA (DIPTERA). U. S. NAT. MUS. PROC. 108(3407):347-465, 170 FIG.
- FROST, S. W. 1924. A STUDY OF THE LEAF-MINING DIPTERA OF NORTH AMERICA. NEW YORK (CORNELL) AGR. EXPT. STA. MEM. 78:1-228, 14 PL.
- MALLOCH, J. R. 1913. A REVISION OF THE SPECIES IN AGROMYZA FALLÉN, AND CERODONTHA RONDANI (DIPTERA). ENT. SOC. AMER. ANN. 6:269-336, 4 PL.
- SPENCER, K. A., AND C. E. STEGMAIER, JR. 1973. AGROMYZIDAE OF FLORIDA WITH A SUPPLEMENT OF SPECIES FROM THE CARIBBEAN. ARTHROPODS OF FLORIDA AND NEIGHBORING LAND AREAS 7:1-205, 489 FIG.
- STEGMAIER, C. E., JR. 1967. SOME NEW HOST PLANT RECORDS AND PARASITES OF PHYTOBIA (AMAUROMYZA) MACULOSA IN FLORIDA (DIPTERA: AGROMYZIDAE). FLA. ENT. 50(2):99-101, 1 FIG.
- STONE, ALAN, ET AL. 1965. A CATALOGUE OF THE DIPTERA OF AMERICA NORTH OF MEXICO. USDA AGR. HANDBOOK No. 276. 1696 P.
- WATERS, W. E., AND C. A. CONOVER. 1969. CHRYSANTHEMUM PRODUCTION IN FLORIDA. FLA. UNIV. AGR. EXPT. STA. BULL. 730:1-64, 17 FIG.