ENTOMOLOGY CIRCULAR NO. 70
MARCH 1968

FLORIDA DEPARTMENT OF AGRICULTURE
DIVISION OF PLANT INDUSTRY

BLACKBERRY LEAF-MINER (TISCHERIA AENEA FREY & BOLL)[1]

(LEPIDOPTERA: TISCHERIIDAE)

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INTRODUCTION: THE BLACKBERRY LEAF-MINER IS THE LARVA OF A TINY, MOUSE GRAY MOTH (FIG. 1); IT APPEARS BRONZY IRIDESCENT WHEN EXAMINED WITH A HAND MAGNIFIER. THE LARVA FEEDS ON LEAF TISSUE BETWEEN UPPER AND LOWER LEAF SURFACES. DURING LARVAL DEVELOPMENT AN OVAL BLOTCH MINE IS CONSTRUCTED; THIS IS RECOGNIZABLE ON THE UPPER LEAF SURFACE. THE CRUDE OUTLINE OF THE MINE OFTEN MAY RESEMBLE A TRUMPET (FIG. 2 A). MINES WHICH EXTEND TO THE LEAF MARGIN PRODUCE LEAF CURL OR MARGINAL LEAF FOLD (FIG. 2 B & C). A SINGLE BLACKBERRY LEAF MAY BE INFESTED BY SEVERAL LARVAE.

DESCRIPTION: THE FULLY DEVELOPED LARVA AVERAGES ABOUT 6MM IN LENGTH (FIG. 3 & 4). THE HEAD, CERVICAL SHIELD, AND SURANAL PLATE ARE LIGHT BROWN, THE BODY SEGMENTS WHITE. A PAIR OF BASKET-SHAPED SCLEROTIZED MARKINGS IS PRESENT ON THE CERVICAL SHIELD WHEN VIEWED UNDER LOW MAGNIFICATION (X30); THE BASE OF BASKET IS PARALLEL TO THE MESON (FIG. 3). AN HOUR GLASS-SHAPED SCLEROTIZED PLATE IS PRESENT VENTRALLY ON THE PROTHORAX WHEN VIEWED UNDER LOW MAGNIFICATION (X30) (FIG. 4). THE BODY IS FLAT AND EACH SEGMENT DISTINCT AND TAPERS CAUDAD FROM THE SECOND THORACIC SEGMENT. THORACIC LEGS ABSENT. PROLEGS WITH CROCHETS PRESENT ON ABDOMINAL SEGMENTS 3 TO 6. ANAL PROLEGS WITH CROCHETS PRESENT. LARVA PUPATES IN MINE (FIG. 5).

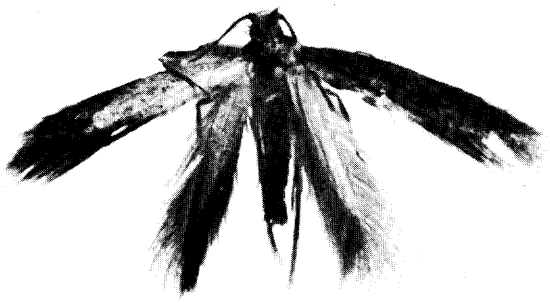

FIG. 1. ADULT MOTH (X12).

FIG. 2. (A) TRUMPET-LIKE MINE (X2).
(B) LEAF CURL. (C) MARGINAL LEAF FOLD.

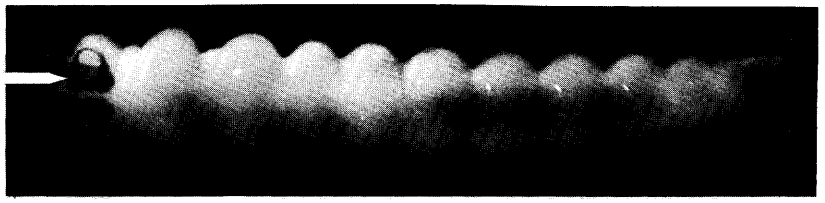

FIG. 3. BASKET-SHAPED MARKINGS ON CERVICAL SHIELD (DORSAL VIEW OF LARVA X20).

FIG. 4. HOUR GLASS-SHAPED PLATE ON PROTHORAX (VENTRAL VIEW OF LARVA X20).

[1]CONTRIBUTION NO. 124, ENTOMOLOGY SECTION

HOST: BLACKBERRY (RUBUS SPP.) IS THE ONLY HOST RECORDED FOR THIS INSECT BY THE DIVISION OF PLANT INDUSTRY.

ECONOMIC IMPORTANCE: THIS LEAF-MINER HAS CAUSED INJURY TO NURSERY AND COMMERCIAL PLANTINGS OF BLACKBERRY. SEVERELY INFESTED PLANTS HAVE THEIR LEAVES SO SERIOUSLY DAMAGED AND DISTORTED THAT NORMAL LEAF FUNCTION AND PLANT VIGOR MAY BE DRASTICALLY REDUCED.

DISTRIBUTION: DIVISION OF PLANT INDUSTRY RECORDS INDICATE THE FOLLOWING DISTRIBUTION IN FLORIDA (FIG.6): AUBURNDALE (JUNE), EUSTIS (SEPT.), FORT MYERS (DEC.), GROVELAND (JAN.), INVERNESS (NOV.), LAKELAND (JAN.), MOUNT DORA (MARCH), OLDSMAR (FEB.), PORT TAMPA (MAY), SAN ANTONIO (JULY), ST. PETERSBURG (APR., AUG., SEPT., & NOV.), TAMPA (JUNE).

FIG. 5. PUPAL SKIN REMAINS ATTACHED TO MINE WHEN ADULT EMERGES (X9).

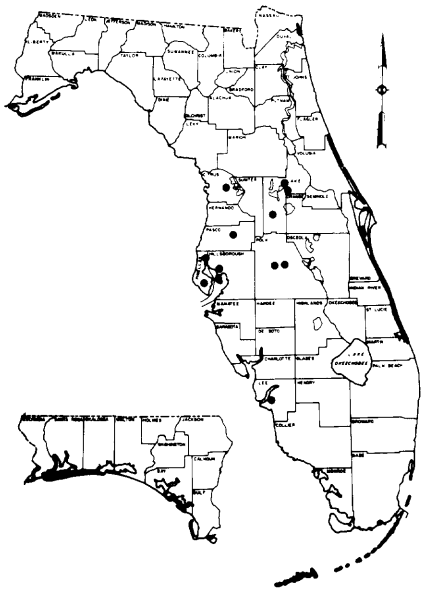

FIG. 6. FLORIDA DISTRIBUTION RECORDS BY DPI. (TISCHERIA AENEA FREY & BOLL) BLACKBERRY LEAF-MINER.

CONTROL: NO RESEARCH HAS BEEN CONDUCTED FOR CONTROL OF THIS INSECT IN FLORIDA. ENTOMOLOGISTS AT THE FLORIDA AGRICULTURAL EXPERIMENT STATION AND THE AGRICULTURAL EXTENSION SERVICE SUGGEST THE USE OF ONE OF THE FOLLOWING SPRAY MIXTURES FOR CONTROL:

1. MALATHION 25% WETTABLE POWDER AT 4 POUNDS PER 100 GALLONS OF WATER.
2. MALATHION 57% EMULSIFIABLE CONCENTRATE AT 1 QUART PER 100 GALLONS OF WATER.

THE SPRAY MIXTURE IS TO BE APPLIED AT THE FIRST SIGN OF THE ADULT MOTH OR WHEN FOLIAR INJURY BY THE LARVA IS FIRST OBSERVED. REPEAT AS NEEDED.

REFERENCES:

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NEEDHAM, J. G., S. W. FROST, AND G. H. TOTHILL. 1928. LEAF-MINING INSECTS. BALTIMORE, MARYLAND: THE WILLIAMS & WILKINS COMPANY, 351 P.