

LESSER PUMPKIN FLY (DACUS CILIATUS (LOEW))¹
(DIPTERA: TEPHRITIDAE)

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SYNONYMS: DACUS APOXANTHUS DECOLOR BEZZI
DACUS BREVISTYLUS BEZZI
DACUS MALLYI MUNRO
DACUS SIGMOIDES COQUILLET

INTRODUCTION: THE LESSER PUMPKIN FLY, DACUS CILIATUS (LOEW), IS ONE OF SEVERAL FRUIT FLIES FOUND IN AFRICA AND ASIA WHICH COULD BE EXPECTED TO BECOME SERIOUS PESTS OF FLORIDA AGRICULTURAL CROPS IF INTRODUCED INTO THIS STATE. THIS SPECIES HAS NOT BEEN INTERCEPTED IN THE UNITED STATES, BUT PROSPECTS ARE LIKELY FOR THIS TO OCCUR BECAUSE OF OUR HEAVY INTERNATIONAL TRAFFIC.

THROUGHOUT A LARGE PART OF AFRICA AND INDIA THIS FRUIT FLY IS A COMMON PEST OF CUCURBITS, ALTHOUGH NOT AS SERIOUS AS THE MELON FLY, DACUS CURCUBITAE COQUILLET, IN AREAS WHERE BOTH SPECIES OCCUR. HEAVY INFESTATIONS OF CUCURBITS BY D. CILIATUS HAVE BEEN REPORTED IN EGYPT AND IN SOUTH AFRICA. UNTIL RECENTLY, DAMAGE IN SOME AREAS HAS BEEN MISTAKEN FOR THE SIMILAR INJURY CAUSED BY A CLOSELY RELATED SPECIES, DACUS LONGISTYLUS WIEDEMANN.

D. CILIATUS FIRST WAS REPORTED IN INDIA IN 1914 AND WAS COLLECTED FIRST FROM OMBO, UPPER-EGYPT, IN FEBRUARY 1953.

DISTRIBUTION: D. CILIATUS OCCURS THROUGHOUT MOST OF EASTERN, SOUTHERN, AND CENTRAL AFRICA, MALAGASY REPUBLIC (MADAGASCAR), MAURITIUS ISLAND, THE ARABIAN PENINSULA AND INDIA.

HOSTS: CUCURBITS ARE THE PRINCIPAL HOSTS, WITH SEVERAL OTHER CROPS APPARENTLY OF LESS IMPORTANCE. THE LESSER PUMPKIN FLY HAS BEEN RECORDED FROM BALSAMPEAR, BEAN CHAYOTE, BLUECROWN PASSIONFLOWER, CALABASH GOURD, CITRUS, COMMON TOMATO, CUCUMBER, CUCUMIS METULIFERUS, CUSHAW, EDIBLE SNAKEGOURD, GLIRICIDIA SEPIUM, GOOSEBERRYGOURD, IVYGOURD, MILKWEED, MOMORDICA INVOLUCRATA, M. SCHIMPERIANA, MUSKMELON, PUMPKIN, REDPEPPER, SINGKWA TOWELGOURD, WATERMELON, WINTER SQUASH, AND YELLOWFLOWERGOURD.

LIFE HISTORY: THE COMPLETE LIFE CYCLE TYPICALLY REQUIRES 19-22 DAYS AS RECORDED UNDER LABORATORY CONDITIONS AT COIMBATORE IN SOUTHERN INDIA. THE EGG STAGE LASTS 2-4 DAYS, THE LARVAL STAGE 4-6 DAYS, THE PUPAL STAGE 8-10 DAYS, AND THE PREOVIPOSITION PERIOD AT LEAST 4 DAYS. THREE TO 4 EGGS USUALLY ARE DEPOSITED IN A SINGLE PUNCTURE MADE IN THE FRUIT BY THE OVIPOSITOR OF THE FEMALE FRUIT FLY, BUT SOMETIMES AS MANY AS 8 EGGS ARE DEPOSITED IN A SINGLE HOLE, TYPICALLY NEAR THE STALK. WHEN 10 OR MORE EGGS ARE DEPOSITED IN A SINGLE FRUIT, LARVAE USUALLY DO NOT OBTAIN SUFFICIENT NOURISHMENT, RESULTING IN UNDERSIZED ADULTS. PUPATION TAKES PLACE IN THE SOIL.

IDENTIFICATION: THE EGG IS SHINY WHITE, ABOUT 2.5 MM LONG, SLIGHTLY CURVED, CYLINDRICAL, AND NARROW AT ONE END. THE LARVA IS PURE GLISTENING WHITE, EXCEPT AS APPEARANCES ARE ALTERED BY THE COLOR OF THE FOOD WITHIN THE ALIMENTARY CANAL. THE THIRD-INSTAR LARVA, WHICH IS OF TYPICAL MAGGOT APPEARANCE, IS ABOUT 8 MM LONG AND 1.4 MM WIDE. THE MANDIBULAR HOOKS OF THE MOUTH PARTS ARE PROVIDED EACH WITH A PREAPICAL TOOTH AND ORAL LOBES, WHICH ARE WELL DEVELOPED; EACH HAS 15 LAMINATED RIDGES. EACH ANTERIOR SPIRACLE BEARS 14-16 LOBES. THE PUPARIUM IS ELLIPTICAL, BROWNISH, ABOUT 4.5-5.5 MM LONG AND 2-2.5 MM WIDE. THE ADULT FLY IS 6-7 MM LONG, THE BODY PREDOMINATELY DARK FULVOUS YELLOWISH-BROWN WITH PALE YELLOWISH MARKINGS ON THE THORAX AS VIEWED FROM ABOVE. DISTINCTIVE CHARACTERISTICS OF THE ADULT ARE THE WING PATTERN (FIG. 1), LONG THIRD ANTENNAL SEGMENT, FACE WITH 2 LARGE BLACK SPOTS AND 1 BROWN SPOT ON THE PERISTOME NEAR THE LOWER PART OF THE EYES, AND THORAX WITH THE SCUTUM SLIGHTLY DARKER THAN THE REST OF THE BODY, WITH A MEDIAN PRESUTURAL LINE AND 2 SUBMEDIAN POSTSUTURAL BLACK SPOTS (VERY EVIDENT IN ALCOHOLIC SPECIMENS, ALMOST INVISIBLE IN THOSE PRESERVED DRY); HUMERAL CALLI, SUTURE, PLEURAE OPPOSITE THE SUTURE, HYPOPLEURAL SPOT AND THE SCUTELLUM YELLOWISH-WHITE OR OCHRACEOUS. OVIPOSITOR OF THE FEMALE FROM ABOVE, 1.56 MM LONG, THE TIP WITHOUT SERRATION (FIG. 2); MANY MICROSPINES FORM A BAND MID-LENGTH OF THE OVIPOSITOR SHEATH.

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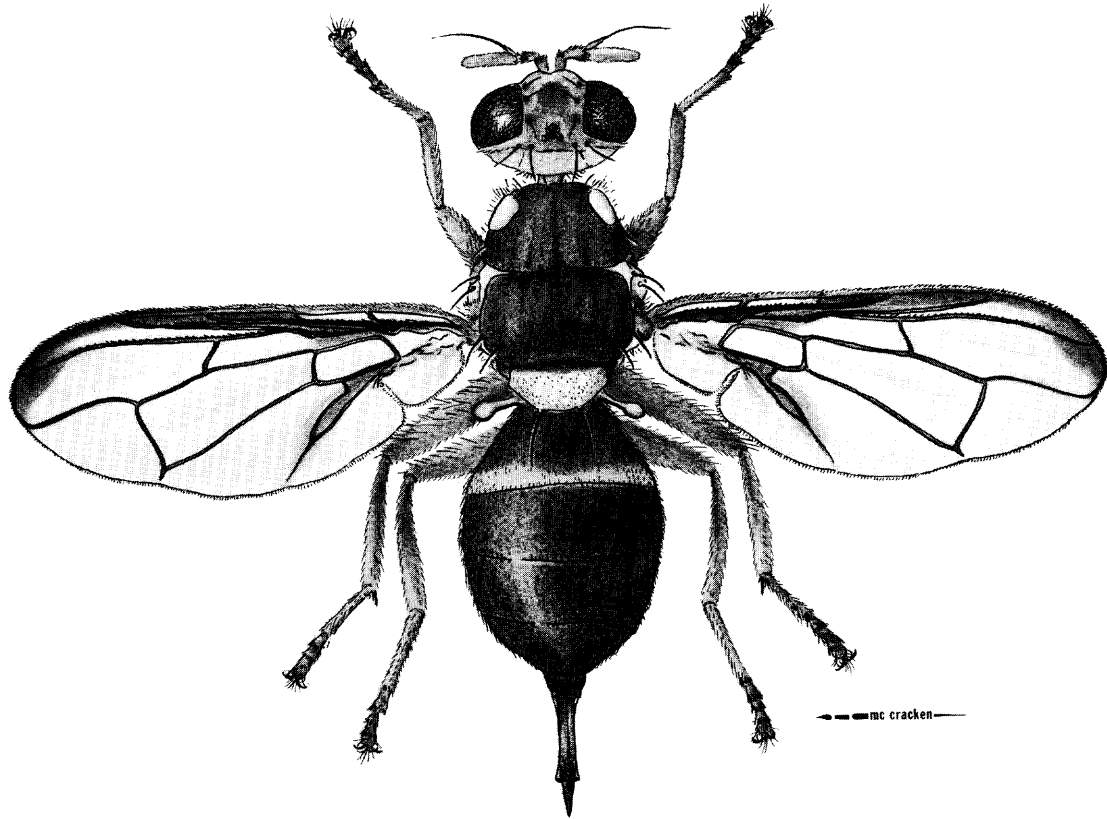


FIG. 1. DACUS CILIATUS (LOEW), ADULT FEMALE



FIG. 2. OVIPOSITOR TIP OF DACUS CILIATUS (LOEW)