

ANASTREPHA SERPENTINA (WIEDEMANN)¹
(DIPTERA: TEPHRITIDAE)
H. V. WEEMS, JR.

SYNONYMS: DACUS SERPENTINA WIEDEMANN, 1830
LEPTOXYSS SERPENTINA (WIEDEMANN), 1843
UROPHORA VITTITHORAX MACQUART, 1851
ANASTREPHA SERPENTINA (WIEDEMANN), 1868
(TRYPETA) ACROTOXA SERPENTINA (WIEDEMANN), 1873

INTRODUCTION: THE "DARK FRUIT FLY" IS INTERCEPTED FREQUENTLY IN UNITED STATES PORTS OF ENTRY IN VARIOUS HOSTS FROM SEVERAL COUNTRIES. IT IS AN IMPORTANT SPECIES IN MEXICO BECAUSE ITS LARVAE INFEST SAPOTE (CALOCARPUM spp.), SAPODILLA (ACHRAS ZAPOTA), WILLOWLEAF LUCUMA (LUCUMA SALICIFOLIA) AND RELATED FRUITS. INFESTATIONS IN TREE-RIPE FRUITS FREQUENTLY ARE SO HIGH THAT IN PARTS OF THE COUNTRY WHERE THESE FRUITS ARE GROWN, ESPECIALLY IN VERACRUZ, THE GROWERS DO NOT PERMIT THEM TO MATURE ON THE TREES, BUT PICK THEM GREEN AND RIPEN THEM ARTIFICIALLY TO AVOID INFESTATION. FRUITS SO RIPENED, HOWEVER, ARE INFERIOR TO TREE-RIPENED FRUITS. LARGE NUMBERS OF ADULTS HAVE BEEN TRAPPED IN THE RIO GRANDE VALLEY OF TEXAS, BUT EXCEPT FOR ONE RECORD FROM GRAPEFRUIT, NO INFESTATION OF THE SPECIES HAS BEEN FOUND IN TEXAS AND THE APPEARANCE AND DISAPPEARANCE OF SUCH LARGE ADULT POPULATIONS THERE REMAINS UNEXPLAINED. ANASTREPHA SERPENTINA POSSIBLY COULD BECOME A SERIOUS PEST OF TROPICAL FRUITS IN SOUTHERN FLORIDA IF IT WERE INTRODUCED INTO THAT AREA.

DISTRIBUTION: RIO GRANDE VALLEY OF TEXAS, MEXICO TO PERU; TRINIDAD, BRAZIL

HOSTS: ACHRAS ZAPOTA, ANNONA GLABRA, BUMELIA LAETEVIRENS, CALOCARPUM SAPOTA, CALOCARPUM VIRIDE, CHRYSOPHYLLUM CAINITO, CHRYSOPHYLLUM PANAMENSE, CITRUS MITIS, CITRUS PARADISI, CITRUS SINENSIS, CYDONIA OBLONGA, DOVYALIS HEBECARPA, FICUS sp., LABATIA STANDLEYANA, LUCUMA OBOVATA, LUCUMA SALICIFOLIA, MALUS SYLVESTRIS, MAMMEA AMERICANA, MANGIFERA INDICA, MANILKARA ZAPOTILLA, MIMUSOPS CORIACEA, PERSEA AMERICANA, PRUNUS PERSICA, PSIDIUM GUAJAVA, PYRUS COMMUNIS, SIDEROXYLON TEMPISQUE, SPONDIAS MOMBIN, ZSCHOKKEA PANAMAENSIS. LARVAE HAVE BEEN REARED EXPERIMENTALLY FROM TOMATO (LYCOPERSICUM ESCULENTUM). THE PREFERRED FOOD PLANTS ARE MEMBERS OF THE FAMILY SAPOTACEAE, PARTICULARLY STAR-APPLE (CHRYSOPHYLLUM CAINITO) AND SAPODILLA (ACHRAS ZAPOTA).

LIFE HISTORY AND HABITS: FEMALES MAY OVIPOSIT UP TO 600 EGGS IN ABOUT 1½ MONTHS. MATURE GREEN FRUITS APPARENTLY ARE PREFERRED. FEMALES HAVE BEEN OBSERVED TO CONTINUE OVIPOSITION OVER PERIODS EXTENDING FROM 21 TO 29 WEEKS UNDER LABORATORY CONDITIONS.

IDENTIFICATION: THE ADULT IS A MEDIUM SIZED TO FAIRLY LARGE, DARK BROWN FLY, MARKED WITH PALE YELLOW AND ORANGE-BROWN. DORSUM OF THORAX DARK BROWN WITH YELLOW MARKINGS (FIG. 1). WING 7.25-8.5MM LONG, THE BANDS PREDOMINANTLY DARK BROWN; COSTAL AND S BANDS RATHER BROADLY COALESCENT, THE HYALINE AREAS TO EACH SIDE OF THE JUNCTURE RARELY TOUCHING VEIN R₄₊₅; NO DISTAL ARM TO V BAND, THE PROXIMAL ARM SLENDER, ENTIRELY SEPARATED FROM S BAND (FIG. 1). DORSUM OF ABDOMEN DARK BROWN MARKED WITH BROWNISH YELLOW AND ORANGE. LEGS VARY FROM PALE YELLOW TO BROWNISH YELLOW OR BROWN ON ONE SIDE AND PALE YELLOW ON THE OTHER. OVIPOSITOR SHEATH OF FEMALE 3.0-3.9MM LONG, ORANGE-BROWN, RATHER STOUT BASALLY AND DEPRESSED APICALLY, THE SPIRACLES ABOUT 1.2MM FROM BASE; OVIPOSITOR 2.8-3.7MM LONG, THE TIP WITH SLIGHTLY MORE THAN APICAL HALF MINUTELY SERRATE (FIG. 2).

MATURE LARVA LARGE, 9-10MM LONG, 1.5MM DIAMETER; OF THE USUAL ELONGATE SHAPE. ANTERIOR RESPIRATORY ORGANS WITH EXTERNAL PARTS SOMEWHAT FAN-SHAPED, BUT NEARLY FLAT ACROSS THE TOP, WITH 17-19 SMALL, THICK, SHORT TUBULES. (FOR DETAILED LARVAL CHARACTERS, SEE PHILLIPS (1946).)

A. SERPENTINA, THE TYPE OF THE GENUS, IS ONE OF A GROUP OF FOUR SPECIES THAT DIFFER NOTICEABLY IN COLOR PATTERN FROM OTHER SPECIES IN THE GENUS. AS ILLUSTRATED BY STONE (1942), ANOMALA STONE HAS THE WING PATTERN AS IN SERPENTINA, BUT HAS A LONGER OVIPOSITOR AND A REDUCED DARK PATTERN ON THE PLEURA AND ABDOMEN; ORNATA ALDRICH HAS THE COSTAL AND V BANDS SEPARATED; PULCHRA STONE HAS A LARGE BLACK SPOT IN THE DISK OF THE WING.

REFERENCES:

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- PHILLIPS, VENIA TARRIS, 1946. THE BIOLOGY AND IDENTIFICATION OF TRYPETID LARVAE (DIPTERA: TRYPETIDAE). AMER. ENT. SOC. MEM. No. 12, 161 P., 16 PL. (192 F.).
- STONE, ALAN. 1942. THE FRUITFLIES OF THE GENUS ANASTREPHA. USDA MISC. PUB. No. 439, WASH., D.C. 112 P., 23 PL.

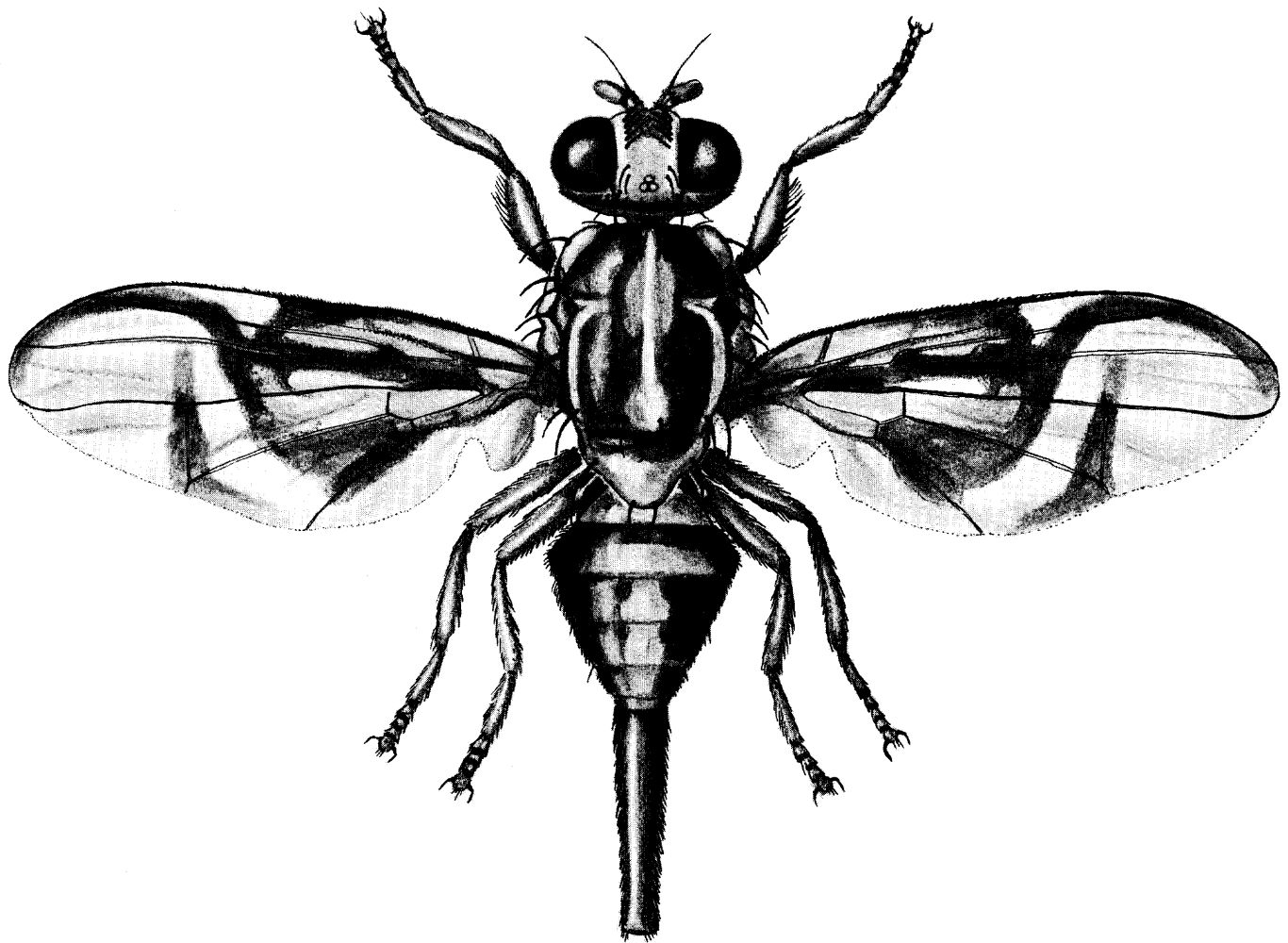


FIG. 1. ANASTREPHA SERPENTINA (WIEDEMANN), ADULT FEMALE.

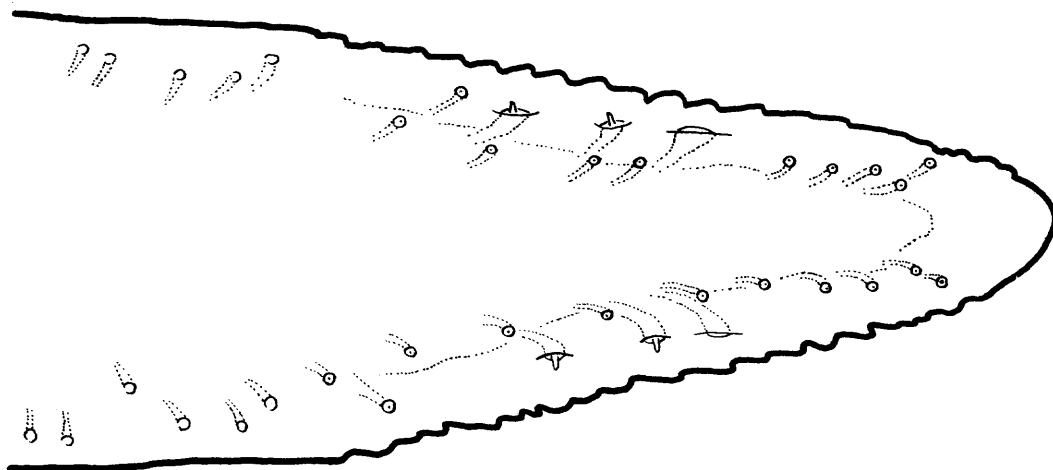


FIG. 2. OVIPOSITOR TIP OF ANASTREPHA SERPENTINA (WIEDEMANN)
(SPECIMEN FROM MEXICO CITY)