

DIACHLORUS FERRUGATUS (FABRICIUS), A FIERCE BITING FLY (DIPTERA: TABANIDAE)¹

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SYNONYMY: CHRYSOPS FERRUGATUS FABRICIUS, 1805:111. TYPE LOCALITY: CAROLINA, U.S.A. TYPE FEMALE LOST.

TABANUS AMERICANUS PALISOT DE BEAUVOIS, 1819:222 (PREOCC. FORSTER, 1771).

DIABASIS ATAENIA MACQUART, 1838:156. TYPE LOCALITY: CAROLINA, U.S.A.

CHRYSOPS CONVERGENS WALKER, 1848:198. TYPE LOCALITY: HONDURAS.

CHRYSOPS APPROXIMANS WALKER, 1848:198. TYPE LOCALITY: FLORIDA.

TABANUS RONDANI BELLARDI, 1859:68. TYPE LOCALITY: MEXICO.

COMMON NAMES: YELLOW FLY (FLORIDA TO VIRGINIA), DOCTOR FLY (BRITISH HONDURAS).

DISTRIBUTION: SOUTHEASTERN U.S. FROM NEW JERSEY TO TEXAS; BAHAMAS; MEXICO TO COSTA RICA. THE GENUS DIACHLORUS CONTAINS 23 NEOTROPICAL SPECIES, RECENTLY KEYED BY FAIRCHILD (1972), BUT DIACHLORUS FERRUGATUS (FABRICIUS) IS THE ONLY SPECIES THAT HAS REACHED THE U.S., PROBABLY COMING BY WAY OF MEXICO. ITS OCCURRENCE IN THE BAHAMAS SEEMS TO BE A RECENT EXTENSION FROM FLORIDA, AS IT HAS NOT BEEN FOUND ELSEWHERE IN THE WEST INDIES.

ADULT HABITS: THE FEMALE IS ONE OF THE MOST SERIOUS BITING FLY PESTS WHEREVER IT OCCURS (MALES DO NOT BITE). IT ATTACKS MAN VIGOROUSLY, AND THE BITES USUALLY ARE PAINFUL, CAUSING LARGE AND PERSISTENTLY ITCHING SWELLINGS IN MANY PERSONS. ALTHOUGH IT ATTACKS THROUGHOUT THE DAY, IT IS MOST ACTIVE DURING THE LATE AFTERNOON AND ON CLOUDY DAYS. IT IS ESPECIALLY COMMON NEAR LARGE BODIES OF WATER, BUT TENDS TO REMAIN IN OR NEAR FORESTS, SELDOM ATTACKING IN NUMBERS FAR FROM THE SHELTER OF TREES. IT IS ONE OF THE FEW TABANIDS WHICH ATTACKS INDOORS. ALL EXPOSED PARTS OF THE VICTIM'S BODY MAY BE ATTACKED, AND SINCE THE FLIGHT IS RATHER QUIET, A PERSON IS NOT AWARE OF THE FLIES UNTIL THE SHARP PAIN OF THE BITE IS FELT. DOMESTIC ANIMALS, INCLUDING DOGS, ARE ATTACKED READILY, ALTHOUGH THE FLY'S PREFERENCE FOR SHADE MAKES IT LESS OF A PEST TO CATTLE AND HORSES IN OPEN PASTURES. FLIES ARE ON THE WING IN FLORIDA FROM MARCH TO NOVEMBER, ALTHOUGH THE PEAK SEASON IS APRIL THROUGH JUNE. WILLIAMS (1971) STUDIED BITING HABITS OF D. FERRUGATUS IN BRITISH HONDURAS, BUT NOTHING COMPARABLE HAS BEEN DONE IN FLORIDA.

LIFE HISTORY: FEW DETAILS ABOUT THE LIFE HISTORY ARE KNOWN. MATURE LARVAE HAVE BEEN COLLECTED AND REARED TO THE ADULT STAGE ON A FEW OCCASIONS, BUT EGGS AND YOUNGER LARVAL STAGES ARE NOT KNOWN, NOR IS ANYTHING KNOWN WITH CERTAINTY OF LARVAL FOOD IN NATURE OR OF POSSIBLE PARASITES AND PREDATORS. WE PRESUME THAT MOST OF THE YEAR IS SPENT IN THE LARVAL STAGE, AS WITH MOST OTHER TABANIDS. MALES RARELY HAVE BEEN COLLECTED; MOST OF THOSE KNOWN WERE TAKEN IN LIGHT TRAPS. NOTHING IS KNOWN OF MATING HABITS.

LARVAL ECOLOGY: LARVAE ARE SLENDER, WHITISH GRUBS NEARLY COVERED BY VERY FINE, YELLOWISH PUBESCENCE AND BEARING ONLY 3 PAIRS OF PSEUDOPODIA ON EACH SEGMENT. THEY HAVE BEEN FOUND ONLY IN DEEPLY SHADED AREAS IN ROOT MATS OF CYPRESS, SHINGLE OAK, AND OTHER WOODY PLANTS, ALWAYS BENEATH THE WATER SURFACE (JONES AND ANTHONY 1964).

IDENTIFICATION: THE ADULT IS A PREDOMINANTLY YELLOW FLY ABOUT 1 CM ($3/8$ INCH) LONG, SIMILAR IN APPEARANCE TO A DEER FLY (CHRYSOPS) (FIG. 1). THE FORE LEGS ARE PREDOMINANTLY BLACK, THE OTHER PAIRS YELLOW. THE WINGS ARE CLEAR, WITH BLACK STIGMA, YELLOW COSTAL CELL, AND A PROMINENT BROWN PATCH AT THE APEX. THE EYES OF THE LIVE FLY ARE BRILLIANT BLUE-GREEN, WITH 2 SEMICIRCULAR PURPLE BANDS. THE FEMALE CAN BE DISTINGUISHED FROM DEER FLIES BY THE VERY NARROW FRONS (SPACE BETWEEN THE EYES IN FRONT), AND (IN BOTH SEXES) THE BROWN WING PATCH AT THE APEX, RATHER THAN ACROSS THE MIDDLE OF THE WING. THE ABDOMEN IS YELLOW, BLACK-HAIRED ON THE SIDES, BUT WITH A BROAD YELLOW-HAIRED STRIPE DOWN THE MIDDLE.

CONTROL: NO EFFECTIVE METHODS FOR LARVAL CONTROL ARE KNOWN. MOSQUITO REPELLENTS ARE MODERATELY EFFECTIVE AGAINST THE ADULTS EXCEPT WHEN THE FLIES ARE VERY ABUNDANT OR VERY HUNGRY. GLOVES AND HEADNETS OFFER THE ONLY SURE MEANS OF PROTECTION. WE HAVE FOUND DEET (DIETHYL TOLUAMIDE, OFF^R) TO BE THE MOST EFFECTIVE REPELLENT. TO PREVENT POSSIBLE DEVELOPMENT OF DANGEROUS HYPERSENSITIVITY AND SYSTEMIC REACTIONS, PERSONS SENSITIVE TO THE BITES SHOULD AVOID EXPOSURE TO THE FLIES.

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REFERENCES:

- BANKS, N. 1904. THE "YELLOW FLY" OF THE DISMAL SWAMP. ENT. NEWS 15(9):290-291.
- BEQUAERT, J. 1924. REPORT OF AN ENTOMOLOGICAL TRIP TO THE TRUXILLO DIVISION, HONDURAS, TO INVESTIGATE THE SAND-FLY PROBLEM. 13TH ANN. REP. MED. DEPT. UNITED FRUIT CO., P. 193-206.
- BEQUAERT, J. 1931. TABANIDAE OF THE PENINSULA OF YUCATAN, MEXICO, WITH DESCRIPTIONS OF NEW SPECIES. J. NEW YORK ENT. SOC. 39:533-553, FIG. 1.
- BLICKLE, R. L. 1958. EYE COLOR OF MALE DIACHLORUS FERRUGATUS (FAB.). ENT. NEWS 69(9):230.
- FAIRCHILD, G. B. 1937. A PRELIMINARY LIST OF THE TABANIDAE OF FLORIDA. FLA. ENT. 19(4):58-63; 20(1):10-11.
- FAIRCHILD, G. B. 1972. NOTES ON NEOTROPICAL TABANIDAE. XII. THE GENUS DIACHLORUS O. S. FLA. ENT. 55(4):219-229.
- GOODWIN, J. T. 1973. IMMATURE STAGES OF SOME EASTERN NEARCTIC TABANIDAE. II. GENERA OF THE TRIBE DIACHLORINI. J. GEORGIA ENT. SOC. 8(1):5-11, FIG. 1-6.
- JONES, C. M., AND D. W. ANTHONY. 1964. THE TABANIDAE (DIPTERA) OF FLORIDA. USDA TECH. BULL. 1295. 85 P., FIG. 1-18.
- MEASE, J. A. 1943. DEER FLY DESENSITIZATION. J. AMER. MED. ASS. 122:227.
- PHILIP, C. B. 1947. A CATALOGUE OF THE BLOOD-SUCKING FLY FAMILY TABANIDAE (HORSE FLIES AND DEER FLIES) OF THE NEARCTIC REGION NORTH OF MEXICO. AMER. MIDL. NAT. 37(2):257-324.
- SHEWELL, G. E. 1947. THE MALE OF DIACHLORUS FERRUGATUS (FAB.). CAN. ENT. 79:32.
- STONE, A., ET AL. 1965. A CATALOGUE OF THE DIPTERA OF AMERICA NORTH OF MEXICO. USDA AGR. HANDBOOK 276. 1696 P.
- WILLIAMS, P. 1971. SOME RECORDS OF TABANIDAE (DIPTERA) FROM BRITISH HONDURAS (BELIZE). J. MED. ENT. 8(1):98-107.

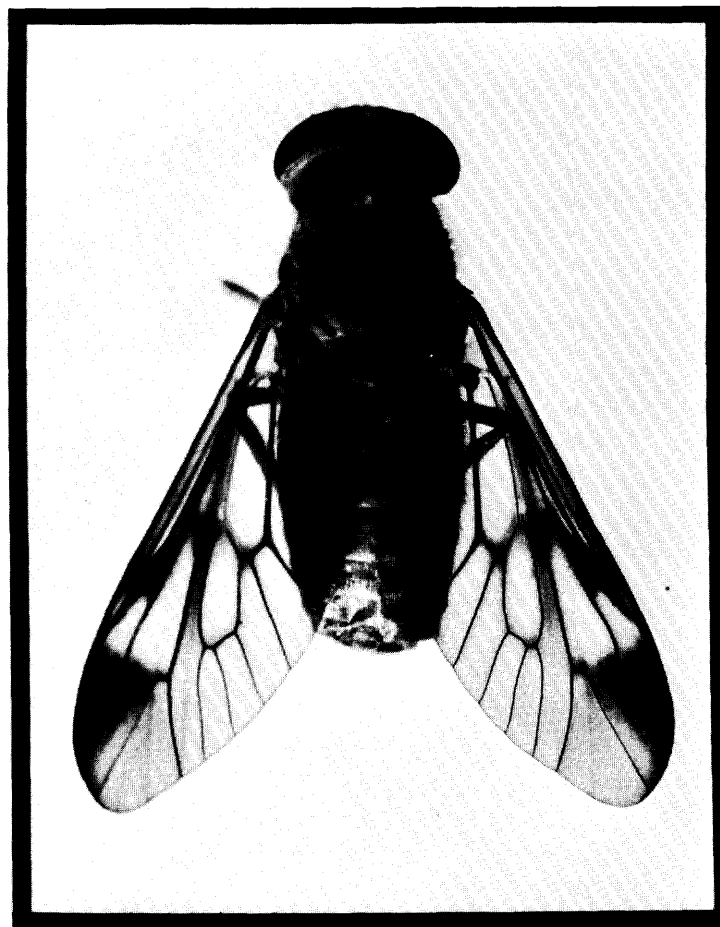


FIG. 1. DIACHLORUS FERRUGATUS (FABRICIUS), ADULT FEMALE.