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FLORIDA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES
DIVISION OF PLANT INDUSTRY

A HOVER FLY, ALLOGRAPTA OBLIQUA (SAY) (DIPTERA: SYRPHIDAE) 1/

H. V. WEEMS, JR.

SNYONYMS: SCAEVA OBLIQUA SAY, 1823
SYRPHUS SECURIFERUS MACQUART, 1942
SPHAEROPHORIA BACCHIDES WALKER, 1849
SYRPHUS DIMENSUS WALKER, 1852
SYRPHUS SIGNATUS WULP, 1867

INTRODUCTION: ONE OF THE COLORFUL AND COMMON LITTLE FLIES IN FLORIDA WHICH IS MOST OFTEN MISTAKEN FOR A HARMFUL FRUIT FLY IS ALLOGRAPTA OBLIQUA (SAY), A HOVER FLY, FLOWER FLY, OR SYRPHID FLY. THESE FLIES ARE EXPERT FLIERS AND CAN HOVER OR FLY BACKWARD, AN ABILITY POSSESSED BY FEW INSECTS OTHER THAN SYRPHID FLIES. ADULTS OFTEN VISIT FLOWERS FOR NECTAR OR MAY BE SEEN AROUND APHID COLONIES WHERE THEY FEED ON HONEYDEW SECRETED BY THE APHIDS AND LAY THEIR EGGS. THE ADULTS ARE CONSIDERED TO BE IMPORTANT AGENTS IN THE CROSS POLLINATION OF SOME PLANTS. THE LARVAE ARE IMPORTANT PREDATORS, FEEDING PRIMARILY ON APHIDS THAT ATTACK CITRUS, SUBTROPICAL FRUIT TREES, GRAINS, CORN, ALFALFA, COTTON, GRAPES, LETTUCE AND OTHER VEGETABLES, ORNAMENTALS, AND MANY WILD HOST PLANTS OF THE APHIDS. WHEN LARVAL POPULATIONS ARE HIGH THEY MAY EFFECT 70 TO 100% CONTROL OF APHID POPULATIONS.

DISTRIBUTION: ALMOST ALL OF THE CONTINENTAL UNITED STATES FROM WASHINGTON TO MAINE AND INTO QUEBEC, CANADA, SOUTHWARD TO CALIFORNIA AND FLORIDA; ALSO HAWAII, BERMUDA, MEXICO, AND PARTS OF THE NEOTROPICAL AMERICAS, INCLUDING THE WEST INDIES.

HOSTS: MANY SPECIES OF APHIDS HAVE BEEN REPORTED TO BE HOSTS OF A. OBLIQUA. SPECIES OF MAJOR ECONOMIC IMPORTANCE LISTED BY CAMPBELL AND DAVIDSON (1924), CURRAN (1920), DAVIDSON (1916), HEISS (1938), METCALF (1912, 1916) AND THOMPSON (1928) INCLUDE: ACYTHOSIPHON PISUM (HARRIS), APHIS CRACCIVORA KOCH, APHIS GOSSYPII GLOVER, APHIS POMI DE GEER, APHIS SPIRAECOLA PATCH, BREVICORYNE BRASSICAE (LINNAEUS), CHROMAPHIS JUGLANDICOLA (KALTENBACH), MACROSIPHUM ROSAE (LINNAEUS), MYZUS CERASI (FABRICIUS), MYZUS PERSICAE (SULZER), RHOPALOSIPHUM MAIDIS (FITCH), SCHIZAPHIS GRAMINUM (RONDANI) AND TOXOPTERA AURANTII (FONSCOLOMBE), OTHER APHID HOSTS REPORTED BY THE ABOVE WORKERS ARE: AMPHOROPHORA SONCHI (OESTLUND), APHIS CARDUI LINNAEUS, APHIS LUTESCENS MONELL, APHIS RUMICIS LINNAEUS, APHIS VIBURNICOLA GILLETTE, CAPITOPHORUS BRAGGII (GILLETTE), CAPITOPHORUS FRAGAEFOLII (COCKERELL), HYALOPTERUS ARTIPLICIS (LINNAEUS), MACROSIPHONIELLA SANBORNI (GILLETTE), MACROSIPHUM EUPHORBIAE (THOMAS), MYZOCALLIS ALHAMBRA DAVIDSON, RHOPALOSIPHUM FITCHII (SANDERSON) AND THERIOPHIS BELLA (WALSH). IN ADDITION TO APHIDS, ALEYRODIDAE HAVE BEEN REPORTED TO SERVE AS HOSTS FOR THE LARVAE OF THIS SYRPHID.

PARASITES: A. OBLIQUA LARVAE, AND OCCASIONALLY ALSO PUPAE, ARE HEAVILY PARASITIZED, EVEN EXCEEDING 50% SOME YEARS. THE HYMENOPTEROUS PARASITES WHICH ATTACK A. OBLIQUA AS LISTED IN MUESEBECK ET AL (1951, 1958, 1967) INCLUDE THE FOLLOWING SPECIES OF ICHNEUMONIDAE: DIPLAZON LAETATORIUS (FABRICIUS), DIPLAZON SCUTELLARIS (CRESSON), ETHELURGUS SYRPHICOLA (ASHMEAD), HOMOTROPUS PACIFICUS (CRESSON), SYRPHOCTONUS FLAVOLINEATUS (GRAVENHORST) AND SYRPHOCTONUS FUSCITARSUS (PROVANCHER); ONE SPECIES OF PTEROMALIDAE--PACHYNEURON ALLOGRAPTAE ASHMEAD; AND ONE SPECIES OF CERAPHRONIDAE--CONOSTIGMUS TIMBERLAKEI KAMAL.

LIFE HISTORY AND HABITS: ADULTS OF A. OBLIQUA OCCUR THROUGHOUT THE YEAR IN NORTHERN FLORIDA AND HAVE BEEN TAKEN IN LONG SERIES IN GAINESVILLE IN MID-FEBRUARY, BUT THEY BECOME MUCH MORE ABUNDANT DURING SPRING AND SUMMER. IN SOUTHERN FLORIDA THEY OFTEN ARE ABUNDANT EVEN DURING THE WINTER MONTHS. THE LIFE CYCLE VARIES FROM AS LITTLE AS THEEE WEEKS IN SUMMER TO NINE WEEKS IN WINTER. THE EGGS ARE LAID SINGLY ON THE SURFACE OF A LEAF OR TWIG WHICH BEARS APHIDS. THEY HATCH IN TWO TO THREE DAYS DURING THE SUMMER AND WITHIN EIGHT DAYS IN THE WINTER IN SOUTHERN CALIFORNIA (CAMPBELL AND DAVISDON, 1924). MILLER (1929) REPORTED HATCHING IN ONE TO THREE DAYS, JONES (1922) IN THREE DAYS, AND CURRAN (1920) IN FIVE TO TEN DAYS. THE LARVAL STAGE TAKES NINE TO TEN DAYS IN SUMMER, 16 TO 21 DAYS IN WINTER (CAMPBELL AND DAVIDSON, 1924). WADLEY (1931) FOUND THAT THE LARVAL STAGE TOOK FIVE DAYS, WITH ONE LARVA CONSUMING 242 TOXOPTERA AND ANOTHER 270. JONES (1922) FOUND THAT LARVAE TOOK NINE DAYS TO DEVELOP. MILLER (1929) REPORTED A LARVAL STAGE OF 10 TO 14 DAYS AND THAT THE LARVAE ATE AN AVERAGE OF 34 APHIDS PER DAY. CURRAN (1920) GAVE THE LENGTH OF THE LARVAL STAGE AS 12 TO 20 DAYS AND RECORDED ONE LARVA AS HAVING EATEN 265 APHIDS, AN AVERAGE OF 17 PER DAY. THE LARVA FASTENS ITSELF TO A LEAF OR TWIG WHEN IT IS READY TO PUPATE. THE PUPAL STAGE TAKES EIGHT TO TEN DAYS IN SUMMER AND 18 TO 33 DAYS IN WINTER, ACCORDING TO CAMPBELL AND DAVIDSON (1924). WADLEY (1931) REPORTED A RANGE OF SIX TO 11 DAYS WITH AN AVERAGE OF 8.3 DAYS, MILLER (1929) SIX TO EIGHT DAYS, JONES (1922) AND CURRAN (1920) FIVE TO 17.

IDENTIFICATION: THE EGG IS CREAMY WHITE, MICROSCOPICALLY SCULPTURED, ELONGATE OVAL, ABOUT .84MM IN LENGTH AND .25MM IN DIAMETER. THE FULL-GROWN LARVA IS 8 TO 9MM IN LENGTH, 2MM WIDE, AND ABOUT 1.2MM IN HEIGHT; ELONGATE OVAL, SOMEWHAT FLATTENED ON DORSUM, THE ANTERIOR END DRAWN OUT TO A POINT WHEN THE INSECT EXTENDS ITSELF; INTEGUMENT FINELY PAPILLOSE, TRANSVERSELY WRINKLED, THE FLESHY CONICAL ELEVATIONS SURMOUNTED WITH PALE SPINES, COLOR GREEN, WITH TWO NARROW WHITISH LONGITUDINAL STRIPES FLANKING THE DORSAL VESSEL, POSTERIOR RESPIRATORY TUBES FUSED MESAD, .5MM LONG, THE COMBINED BASE ABOUT 27MM WIDE. LARVAE OF A. OBLIQUA ARE ALMOST INDISTINGUISHABLE FROM THOSE OF A. EXOTICA (WIEDEMANN), WHICH OCCURS UNCOMMONLY IN FLORIDA. THE PUPARIUM IS GREEN; THE TWO WHITISH LARVAL STRIPES APPARENT FOR A DAY OR TWO. AS THE TRUE PUPA INSIDE TAKES ON THE BLACK AND YELLOW COLOR OF THE ADULT, THE COLOR OF THE PUPARIUM CHANGES UNTIL ALL OF THE GREEN DISAPPEARS. THE PUPARIUM LENGTH AVERAGES 5.25MM, WIDTH 2.5MM, HEIGHT 2.3MM. POSTERIOR ELEVATION IS VERY GRADUAL. THE ADULT IS 6 TO 7MM LONG. THIS SPECIES MAY BE RECOGNIZED BY THE GENERIC CHARACTERS--YELLOW THORACIC STRIPES AND ABDOMINAL CROSSBANDS; ON THE FOURTH AND FIFTH SEGMENTS, FOUR LONGITUDINAL, OBLIQUE, YELLOW STRIPES OR SPOTS; AND YELLOW FACE LACKING A COMPLETE MEDIAN STRIPE (FIG. 1). EYES OF THE MALE ARE HOLOPTIC, THOSE OF THE FEMALE DICHOPTIC.

1/CONTRIBUTION NO. 208, BUREAU OF ENTOMOLOGY

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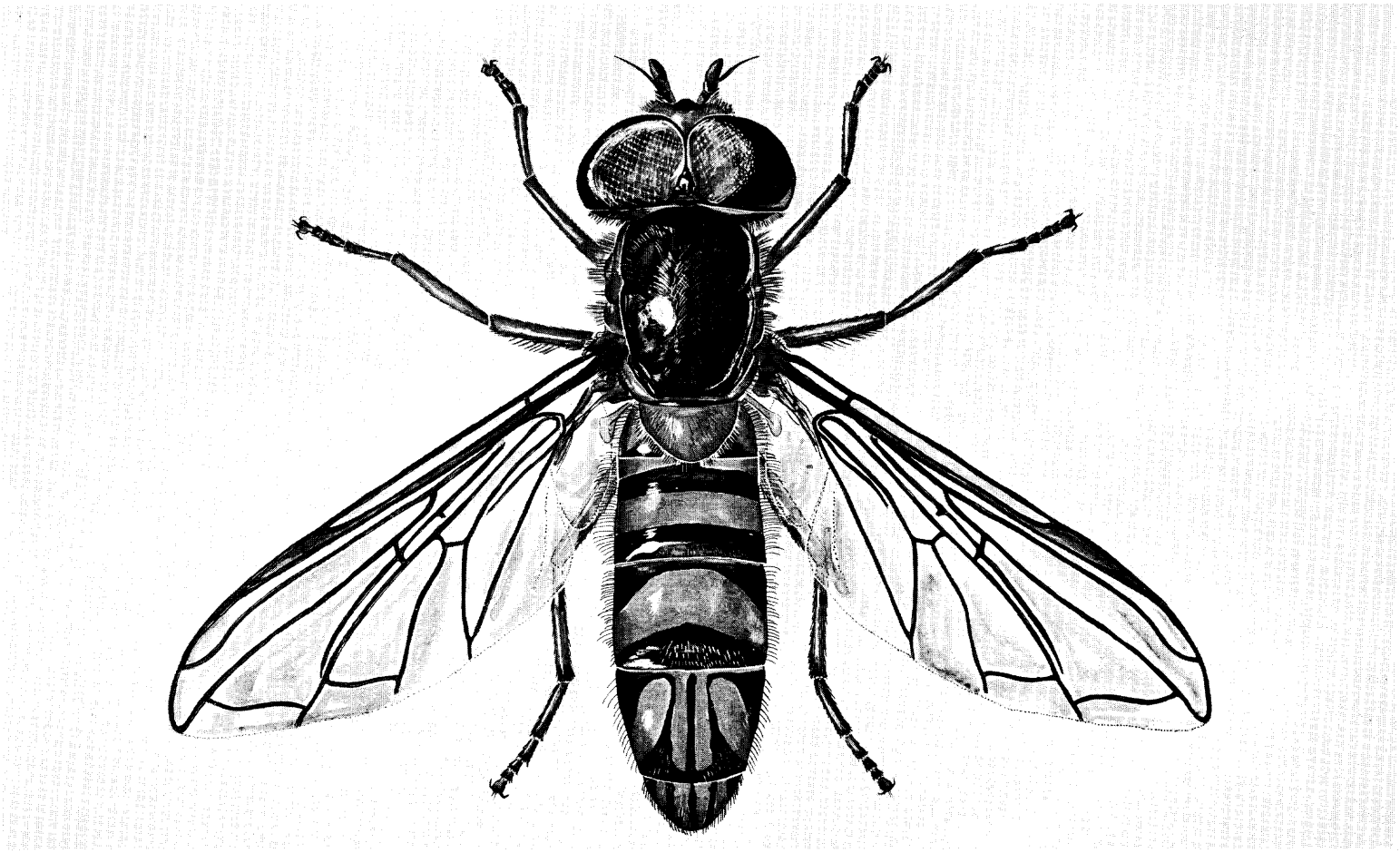

FIG. 1, ALLOGRAPTA OBLIQUA (SAY), ADULT MALE.