

THE ZETHUS OF FLORIDA  
(HYMENOPTERA: EUMENIDAE)<sup>1</sup>

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**INTRODUCTION:** MEMBERS OF THE GENUS ZETHUS ARE WIDESPREAD THROUGHOUT THE NEW WORLD TROPICS. ACCORDING TO BOHART AND STANGE (1965) THERE ARE 189 RECOGNIZED SPECIES IN THE WESTERN HEMISPHERE WITH THE GREATEST NUMBER IN THE BRAZILIAN REGION OF SOUTH AMERICA. ONLY 4 SPECIES OCCUR IN AMERICA NORTH OF MEXICO, 2 OF WHICH OCCUR IN FLORIDA. Z. GUERREROI (SUBSPECIES ARIZONENSIS R. BOHART) IS KNOWN FROM ARIZONA AND NEW MEXICO, AND Z. MISCOGASTER SAUSSURE IS FROM ARIZONA. Z. SPINIPES SAY HAS 2 SUBSPECIES FOUND IN THE EASTERN UNITED STATES, AND Z. SLOSSONAE FOX IS KNOWN FROM SOUTHERN FLORIDA. ZETHUS ARE EASILY MISTAKEN FOR POTTER WASPS (EUMENES) COMMONLY FOUND AROUND THE HOME. UNLIKE EUMENES WHICH BUILD NESTS OF MUD, ZETHUS USE EITHER ABANDONED BURROWS OF OTHER INSECTS OR BUILD NESTS FROM VEGETABLE MATTER AND RESIN.

**IDENTIFICATION:** ZETHUS AND EUMENES ARE THE ONLY GENERA OF EUMENIDAE WITH THE FIRST ABDOMINAL SEGMENTS NARROWLY PETIOLATE (FIG. 1). METHODS FOR SEPARATING ZETHUS FROM THE SIMILAR APPEARING EUMENES WERE DISCUSSED IN ENTOMOLOGY CIRCULAR No. 146 (GRISSELL, 1974). THE SECOND ABDOMINAL SEGMENT OF ZETHUS IS MORE PETIOLATE (FIG. 2B) THAN THAT OF EUMENES (FIG. 3B), AND THE SECOND SUBMARGINAL CELL OF ZETHUS IS TRUNCATE POSTEROBASALLY (FIG. 2A), WHILE THAT OF EUMENES IS ACUTE (FIG. 3A). ZETHUS SLOSSONAE IS MOST READILY SEPARATED FROM Z. SPINIPES BY COLOR: Z. SLOSSONAE IS BLACK AND RED WITH YELLOW MARKINGS, WHILE Z. SPINIPES IS BLACK WITH IVORY MARKINGS. OTHER MORPHOLOGICAL DIFFERENCES, NOT AS READILY APPARENT AS COLOR, ARE GIVEN BY ISELY (1917) AND BOHART AND STANGE (1965).

**DISTRIBUTION:** ZETHUS SLOSSONAE IS ENDEMIC TO FLORIDA FROM ORLANDO SOUTHWARD TO KEY WEST. ZETHUS SPINIPES OCCURS IN 2 SUBSPECIFIC FORMS THROUGHOUT THE SOUTHEASTERN AND LOWER NORTHEASTERN UNITED STATES. THE SUBSPECIES VARIEGATUS RANGES FROM MARYLAND SOUTHWARD TO THE TIP OF PENINSULAR FLORIDA AND WESTWARD TO TEXAS. THE NOMINATE SUBSPECIES RANGES NORTHWARD FROM VIRGINIA TO MASSACHUSETTS AND WESTWARD TO KANSAS.

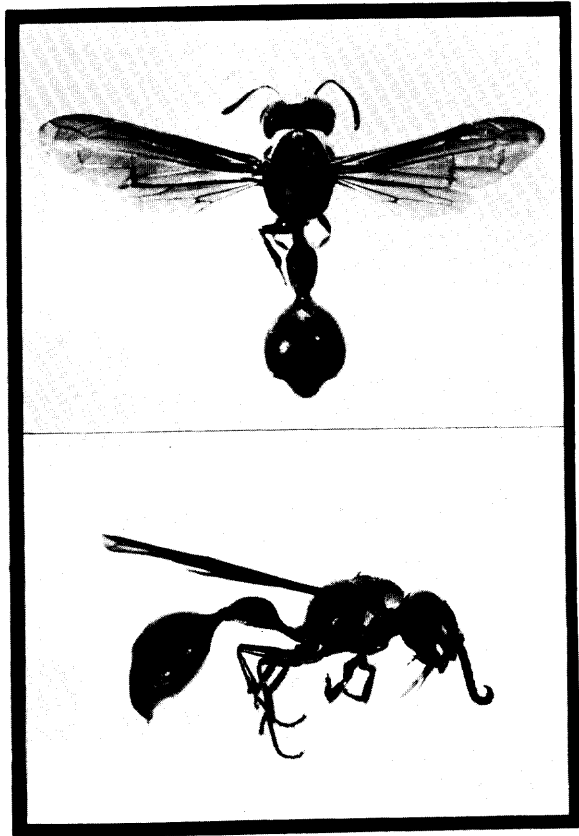


FIG. 1 ZETHUS SPINIPES SAY  
(ABOVE, DORSAL VIEW; BELOW, SIDE VIEW)

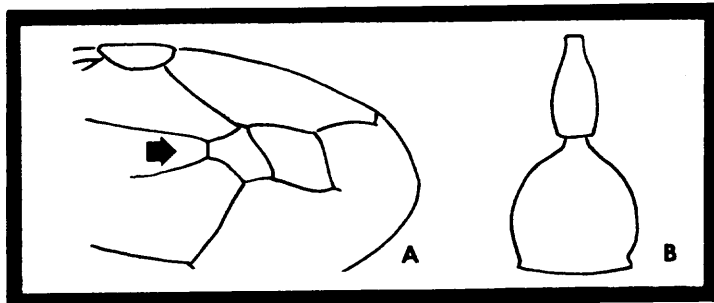


FIG. 2 ZETHUS WING (A) AND ABDOMEN (B)

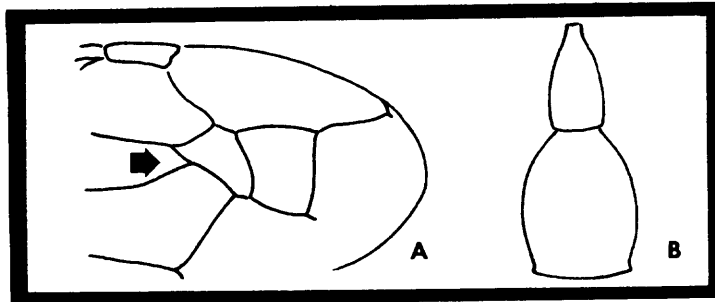


FIG. 3 EUMENES WING (A) AND ABDOMEN (B)

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BIOLOGY: BOHART AND STANGE (1965) REVIEWED LITERATURE OF THE KNOWN BIOLOGIES FOR 15 OF THE 189 NEW WORLD ZETHUS. NOTHING HAS BEEN ADDED SINCE THAT TIME. IN GENERAL, 2 TYPES OF NESTING BEHAVIOR ARE KNOWN. SOME SPECIES USE OLD INSECT BURROWS IN TWIGS, WOOD, OR IN THE GROUND. THE FEMALE WASP CLEANS OUT THE OLD BURROW, LAYS AN EGG IN THE CELL, AND THEN PROVISIONS IT WITH LEPIDOPTEROUS LARVAE. IN SOME SPECIES THE CELLS ARE CAPPED OFF OR SEPARATED FROM THE NEXT CELL BY CEMENTED LEAF FRAGMENTS. ONE SPECIES FORMS A CAP OF SAWDUST. THE OTHER TYPE OF NESTING BEHAVIOR INVOLVES THE CONSTRUCTION OF ORIGINAL NESTS FROM MASTICATED VEGETABLE MATTER (USUALLY LEAVES) PASTED TOGETHER WITH A RESINOUS SUBSTANCE. THESE NESTS ARE USUALLY FASTENED TO SHRUBS, VINES, OR TREES. SOME FEMALES WHICH MAKE THIS TYPE OF NEST ARE KNOWN TO CONSTRUCT COMMUNAL NESTS AND EACH PROGRESSIVELY FEEDS ITS OWN LARVAE UNTIL MATURE. THE NESTING HABITS OF FLORIDA ZETHUS ARE VIRTUALLY UNKNOWN. BOTH Z. SPINIPES AND Z. SLOSSONAE ARE RELATED TO OTHER SPECIES WHICH USE OLD INSECT BURROWS FOR NESTS. ASHMEAD (1894) REPORTED BOTH ZETHUS AND EUMENES FORMING GLOBULAR CLAY CELLS, AND HE CLAIMED Z. SPINIPES MADE CELLS ATTACHED TO A ". . . TWIG OF THE IRON-TREE." THIS OBSERVATION IS ALMOST CERTAINLY IN ERROR. ASHMEAD PROBABLY MISIDENTIFIED EUMENES (THE POTTER WASP) FOR ZETHUS. THE ONLY BIOLOGICAL NOTE FOR Z. SLOSSONAE WAS GIVEN BY BOHART AND STANGE (1965) WHO SAW A MUSEUM SPECIMEN REARED FROM A TWIG NEST. IT IS EVIDENT THAT MUCH WORK REMAINS TO BE DONE ON THE BIOLOGY OF THIS GENUS.

ECONOMIC IMPORTANCE: SO LITTLE IS KNOWN OF THE BIOLOGY OF ZETHUS, ITS ECONOMIC IMPORTANCE IS OBSCURE. SINCE MEMBERS OF THE GENUS PROVISION THEIR NESTS WITH LEPIDOPTEROUS LARVAE (INCLUDING GEOMETRIDAE AND GELECHIOIDEA), ZETHUS SHOULD PROVISIONALLY BE CONSIDERED BENEFICIAL.

LITERATURE CITED:

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