

Mason Wasps of Florida, *Zethus* spp. (Insecta: Hymenoptera: Vespidae: Eumeninae)¹

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Introduction

The genus *Zethus* is in the subfamily Eumeninae, which contains the mason and potter wasps. However, many *Zethus* species typically make their nests in twigs and branches (Porter 1978) using old insect burrows, although ground nesting is also common.

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. However, Porter (1978) lists only 187 in the same area. Arnett (2000) and Porter (1978) list seven species in America north of Mexico, two of which occur in Florida.

Z. spinipes Say has two subspecies found in the eastern United States, and *Z. slossonae* Fox is known from southern Florida. *Zethus* are easily mistaken for (*Eumenes*) commonly found around the home. Unlike *Eumenes* spp. which build nests of mud, *Zethus* use either abandoned burrows of other insects

or build nests from vegetable matter and resin.

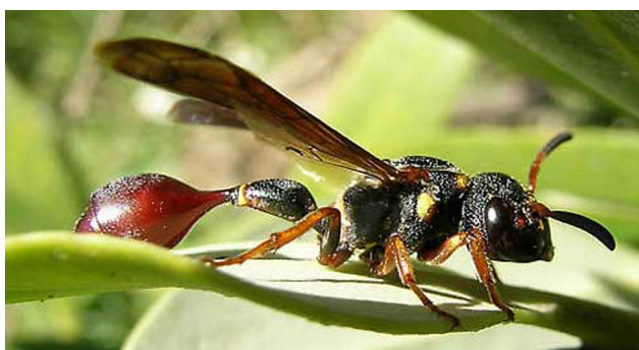


Figure 1. Lateral view of an adult *Zethus slossonae* Say. Credits: Sean McCann, University of Florida

Distribution

Zethus slossonae is endemic to Florida from Orlando southward to Key West. *Zethus spinipes* occurs in two subspecific forms throughout the southeastern and lower northeastern United States. The subspecies *Z. s. 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.

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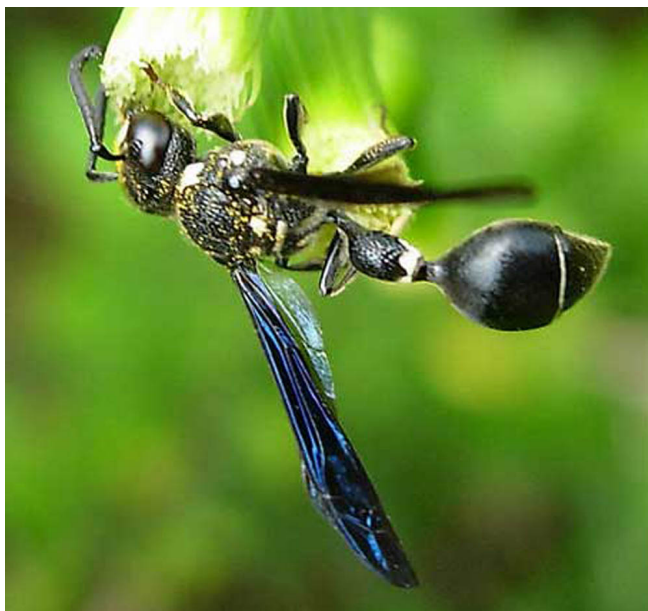


Figure 2. An adult male *Zethus spinipes* Fox. Notice apical curve on antenna that indicates a male. Image taken in Indian River County, Florida, so species is most likely *Z. s. variegatus* Say. Credits: Sean McCann, University of Florida

Identification

Zethus and *Eumenes* are the only genera of Eumeninae with the first abdominal segments narrowly petiolate. Methods for separating *Zethus* from the similar appearing *Eumenes* were discussed in FDACS-DPI Entomology Circular 146 (Grissell 1974). The second abdominal segment of *Zethus* is more petiolate than that of *Eumenes*, and the second submarginal cell of *Zethus* is truncate posterobasally, while that of *Eumenes* is acute.

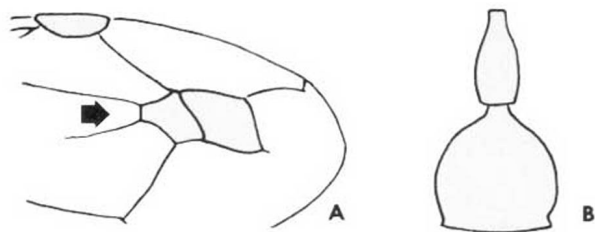


Figure 3. *Zethus* wing (A) and abdomen (B). Credits: Division of Plant Industry

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).

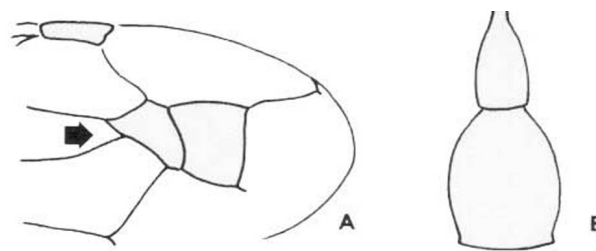


Figure 4. *Eumenes* wing (A) and abdomen (B). Credits: Division of Plant Industry

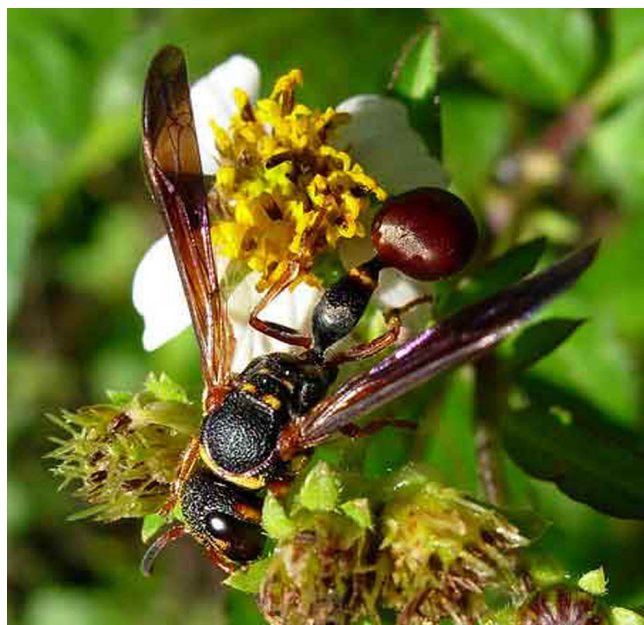


Figure 5. Dorsal view of an adult *Zethus slossonae* Say. Credits: Sean McCann, University of Florida



Figure 6. An adult male *Zethus spinipes* Fox. Notice apical curve on antenna that indicates a male. Image taken in Indian River County, Florida, so species is most likely *Z. s. variegatus* Say. Credits: Sean McCann, University of Florida

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, two 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.

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