**EENY-403** 



# Potter Wasps of Florida, *Eumenes* spp. (Insecta: Hymenoptera: Vespidae: Eumeninae)<sup>1</sup>

E. E. Grissell<sup>2</sup>

#### Introduction

Currently there are eight species and 10 subspecies of *Eumenes* known in America north of Mexico. Only *E. fraternus* Say and the nominate subspecies of *E. smithii* Saussure occur in Florida. These wasps make the familiar jug-like mud nests found on buildings, window sills, screens, and shrubs around the home. Members of the subfamily Eumenidae may be identified to genus with the aid of a key in Parker (1966). The only key for identifying North American species of *Eumenes* is that of Isley (1917) which is somewhat out of date.

#### Distribution

*E. fraternus* occurs from about the 100 meridian eastward in the United States and Canada. The nominate subspecies of *E. smithii* is found in the southern states from Mississippi eastward and North Carolina southward. The subspecies *E. smithii* belfragei Cresson occurs from Mexico northward through eastern Texas, Oklahoma, Kansas, and eastward to Missouri and Arkansas.



**Figure 1.** Adult potter wasp, *Eumenes fraternus* Say. Credits: Lyle J. Buss, University of Florida

#### Identification

**Nests:** While a number of wasps make mud nests, one is not likely to confuse the jug-like pots of *Eumenes* with those of other species. Nests of this type, found around the home, are almost certainly made by *Eumenes*. According to Isley (1917), the

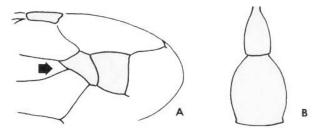
The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Larry Arrington, Dean

<sup>1.</sup> This document is EENY-403 (IN726), one of a series of Featured Creatures from the Entomology and Nematology Department (originally published as DPI Entomology Circular 146), Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Published: May 2007. This document is also available on Featured Creatures Website at <a href="http://creatures.ifas.ufl.edu">http://creatures.ifas.ufl.edu</a>. Please visit the EDIS Website at <a href="http://creatures.ifas.ufl.edu">http://creatures.ifas.ufl.edu</a>.

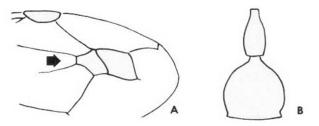
<sup>2.</sup> E. E. Grissell, Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Gainesville, FL (T. R. Fasulo, Department of Entomology & Nematology, University of Florida - project coordinator).

nest of *E. smithii* may be distinguished from that of *E. fraternus* by the more granular and roughened surface due to small lumps of earth. This observation was based on one nest, however, and is probably not a consistent difference.

Adults: Eumenes have a characteristic appearance. Adults are 13 to 17 mm in length (Arnett 2000). The first abdominal segments are rather elongate (i.e., petiolate), increasing gradually in width posteriorly from point of attachment at the thorax. One other genus of eumenid wasp (Zethus) could easily be confused with Eumenes, but it has the second abdominal segment more petiolate and the posterior margin of the second submarginal cell truncate whereas Eumenes has the cell acute.



**Figure 2.** *Eumenes* wing (A) and abdomen (B). Credits: Division of Plant Industry



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

# **Biology**

Little detailed information is available on the biology of any North American species of *Eumenes*. The habits of *E. smithii* are essentially unknown, whereas *E. fraternus* has had only fragmentary consideration. Say (1824) noted that an adult *E. fraternus* emerged through the side of its clay pot in July. Isley (1914) reported and illustrated two nests of *E. fraternus* from a dogwood limb in Kansas. The nests were found in March and adult wasps emerged in May. The two earth pots were attached to each other so that one lateral wall served for both. Isley (1917) listed some of the fragmentary references to

this species. Arnett (2000) states that the adults fly from June to October to visit flowers to gather moth and beetle larvae, and that the female's eggs are suspended from slender threads attached to the top of sides of the pot.

Little detailed information is available on the biology of any North American species of Eumenes. The habits of E. smithii are essentially unknown, whereas E. fraternus has had only fragmentary consideration. Say (1824) noted that an adult E. fraternus emerged through the side of its clay pot in July. Isley (1914) reported and illustrated two nests of E. fraternus from a dogwood limb in Kansas. The nests were found in March and adult wasps emerged in May. The two earth pots were attached to each other so that one lateral wall served for both. Islev (1917) listed some of the fragmentary references to this species. Arnett (2000) states that the adults fly from June to October to visit flowers to gather moth and beetle larvae, and that the female's eggs are suspended from slender threads attached to the top of sides of the pot.

## **Economic Importance**

As with many wasps, destruction of insects that attack cultivated and ornamental plants far outweighs the few mud pots one might find on one's home or in one's garden. The occasional nests which are found may be scraped off with any blade-like object. No wasp will buzz out to sting the destructor.

### **Selected References**

Arnett Jr RH. 2000. American Insects: A Handbook of the Insects of America North of Mexico. CRC Press. Boca Raton. 1003 pp.

Isley D. 1914. The biology of some Kansas Eumenidae. Kansas University Science Bulletin 8: 233-309.

Isley D. 1917. A synopsis of the petiolate wasps of the family Eumenidae (Hymenoptera), found in America north of Mexico. Annals of the Entomological Society of America 10: 345-366.

Iwata K. 1953. Biology of *Eumenes* in Japan. Mushi 25: 25-46.

Linsley EG. 1962. Sleeping aggregations of aculeate Hymenoptera.--II. Annals of the Entomological Society of America 55: 148-164.

Parker FD. 1966. A revision of the North American species in the genus *Leptochilus* (Hymenoptera: Eumenidae). Miscellaneous Publications of the Entomological Society of America. 5: 151-229.

Say T. 1824. In Keating's narrative of an expedition to the source of St. Peter's river, Lake Winnepeck, Lake of the Woods, under the command of Major Long 1823. Philadelphia. Appendix 2. p. 268-378.