

Ensign Wasps ¹

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Ensign wasps are small, spider-like black insects that occasionally fly into or live in homes, warehouses, or other buildings. They do not sting or bite humans or their pets or cause any damage indoors, so their presence should not be of concern. The female adult lays her eggs in the oothecae of cockroaches, parasitizing them. These insects, therefore, are beneficial to us.

Ensign wasps belong to a group of insects called Evaniidae, or evaniid wasps. They are called ensign wasps because they have a small, compressed, black abdomen that they often move up and down (it seems as if they were signaling with a small flag). Sometimes they are thought to look like spiders because of their black color and their relatively long legs on a stout thorax.

Adult ensign wasps (Figure 1) are usually entirely black in coloration. They have three pairs of legs, two pairs of wings, and are 1/4 to 3/4 inch long with a general body shape that makes them easily distinguishable from other wasps. They have a broad head, a stout thorax, and a small, laterally compressed oval or somewhat triangular abdomen that is attached high on the thorax by a narrow, cylindrical petiole, instead of down near the bases of the hind legs. The ovipositor is occasionally conspicuous. The males

are similar to the females, except for a smaller abdomen.



Figure 1.

Distribution

About 400 species of evaniids have been described, being most abundant in the tropics with a few species being cosmopolitan. Eleven species are known to occur in the U.S. and Canada, six within Florida. *Evania appendigaster* is the most conspicuous of these two species, being the largest of all the eleven species in U.S. and Canada (fore

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wing 1/4 to 1/3 inch in length). It has a cosmopolitan distribution, thought to have been introduced into the United States via ships hundreds of years ago along with their hosts, cockroaches of the genus *Periplaneta*. Several species of *Periplaneta* invade houses, some of the most common being the American cockroach, *P. americana*, Australian cockroach, *P. australasiae*, brown cockroach, *P. brunnea*, and smoky brown cockroach, *P. fuliginosa*. The American cockroach is about 1 to 1 3/4 inches long and reddish brown to dark brown with well-developed wings. They lay twelve eggs, which they protect in a capsule glued to objects in a protected place.

Biology

Evaniids are solitary wasps that are said to be predatory, but in reality they are parasitic since they develop inside egg cases of cockroaches. Their typical habitat is outdoors on the forest floor, tree holes, piles of wood, and palm bracts, where most cockroaches deposit and conceal their oothecae; however, *E. appendigaster*, the most conspicuous evaniid found inside homes in Florida, parasitizes the egg cases of the home-infesting American cockroach and so it is found indoors, where these cockroaches often occur. Females lay a single egg in each ootheca within one of the eggs, which is the food for the first instar larva; the following four instars feed on the other eggs, eventually consuming all of them. Pupation takes place within the ootheca, without a cocoon. At maturity the adult cuts and escapes through a small and round but jagged hole near one of the ends of the cockroach egg case.

Pest Status and Biological Control Potential

Adults of ensign wasps are normally outdoors, are attracted to flowers and to honeydew, and live two to three weeks. They do not bite or sting or feed on humans but they occasionally wander indoors. Although their larvae feed on cockroach eggs they cannot be depended upon to reduce quickly a cockroach infestation but they help keep cockroach populations down. Their most important competitor is the Eulophid wasp *Aprostocetus hagenowii*, a gregarious parasitoid that has a faster development

and hence more generations per year than the evaniids. However, evaniids are more efficient than *A. hagenowii* at locating well-hidden ootheca.

Control

Evaniids may come into a house looking for cockroach egg cases to parasitize if cockroaches are found in the area; they are most often noticed when they are at windows. Since evaniid wasps cause no damage inside the home they could be ignored, removed to the outdoors with a broom and a dustpan, or killed with a fly swatter. Host reduction may be helpful; elimination of hiding places, food material, and moisture sources for cockroaches will reduce the presence of the latter and of the wasps inside homes. Pesticide treatments for cockroaches, especially with pyrethroid insecticides, may kill these beneficial wasps, and so they should be limited in their use to spot treatments, according to pesticide label directions. The best treatment for cockroaches is the preservation of beneficial insects. If a true cockroach infestation exists one could contact either the local extension agent for recommendations or a certified pest control company.

Some References

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