



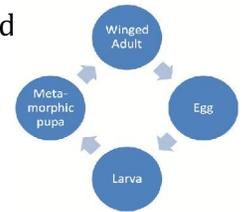
# MISSOURI BOTANICAL GARDEN

## William T. Kemper Center for Home Gardening

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### *Insect Order ID: Hymenoptera (Parasitic Wasps)*

**Life Cycle**—Complete metamorphosis. Solitary adults lay eggs. Larvae eat, grow and molt. This stage is repeated a varying number of times, depending on species, until hormonal changes cause the larvae to pupate. Inside a pupal case, they change in form and color and develop wings. The adults look completely different from the larvae.



**Adults**—Parasitic wasps have hard bodies and membranous wings. The forewing is larger than the hindwing and the two are hooked together as are all Hymenoptera, hence the name "married wings," but this is difficult to see. All have oblong-shaped heads and compound eyes. All have a cinched-in waist (wasp waist). The ovipositor is used to deliver eggs and has not evolved into a stinger, although many can deliver venom via the ovipositor to paralyze their prey. *(Click images to enlarge or orange text for more information.)*



Cinched-in waist



Long ovipositor



Some are tiny



Oblong head

**Eggs**—Delivered through the ovipositor into or onto a host. *(Click images to enlarge or orange text for more information.)*



Ovipositor

**Larvae**—All are vermiform (worm-like), so they have no legs, no prolegs, no wings, no wingbuds. Heads are difficult to discern. Most larvae live inside their host (usually a plant or an insect), finally emerging as winged adults. They produce no frass. *(Click images to enlarge or orange text for more information.)*



Larvae inside a gall



Galls are homes and food for larvae

**Pupae**—All have a pupal stage, during which the adult form develops. The pupa is usually encased within the host or in silken cocoons on the host. *(Click images to enlarge or orange text for more information.)*



Silken cocoons

**Beneficial/Benign Aspects**—Almost all species are important as pollinators or parasites or predators. They parasitize all stages of insects (eggs, larvae, pupae, adults) and all kinds of insects, such as, aphids, caterpillars, borers, and other parasitic wasps. Some are sold or introduced to control certain pests. *(Click images to enlarge or orange text for more information.)*



Pollinators



Parasitoids of pests



Parasitoids of aphids  
Note: the exit hole

**Damage**—None sting. None are social. Both adults and larvae have chewing mouthparts or biting-lapping mouthparts. Most damage is done by gall-makers, especially twig or bud galls. Galls result from the interaction between chemical stimuli produced by the pest and the plant's hormones. Gall wasps are masters in the art of compelling the host plant to provide them with food and shelter. The walls of the gall are structurally strong, rich in protein, and provide the larvae inside with protection and food. Leaf galls usually cause cosmetic damage only. *(Click images to enlarge or orange text for more information.)*



Seed gall  
(on blackberry)



Leaf galls:  
cosmetic damage



Leaf galls:  
cosmetic damage



Twig galls can be damaging



Twig galls  
can be damaging

**Comments**—Parasitic wasps are classified in the order Hymenoptera, Suborder Apocrita. Distinguishing parasitic wasps (suborder Apocrita) from stinging wasps (suborder Aculeata) can be very difficult, unless a long ovipositor is present, indicating Apocrita (parasitic wasps), or a stinger is present, indicating Aculeata (stinging wasps).

For information on wasp species in Missouri, see [MU Guide G7391 "Bees and Wasps."](#)