



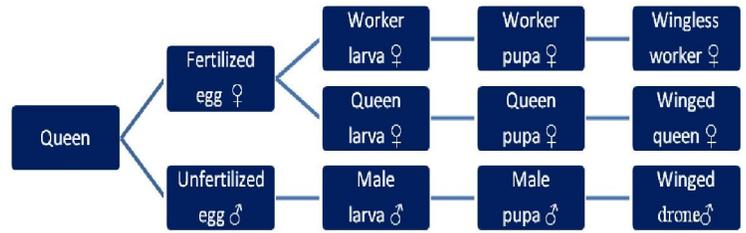
MISSOURI BOTANICAL GARDEN

William T. Kemper Center for Home Gardening

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Insect Order ID: Hymenoptera (Ants)

Life Cycle—All ants are social insects and live in colonies. They go through complete metamorphosis. Queens lay both fertilized eggs (female) and unfertilized eggs (male). 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 the pupal case, they change in form and color. Queens and males develop wings. The rest are wingless female workers. Adults look completely different from the larvae.



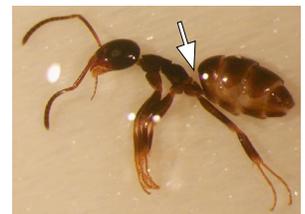
Adults—Ants have hard bodies. Winged forms have membranous wings. The forewing is larger than the hindwing and the two are hooked together as are all Hymenoptera, hence the name "married wings," but this is very difficult to see. Most ants are workers, and all workers are wingless and female. Some species have workers of different sizes. Only males and queens have wings. A queen loses her wings once her colony is established. All forms have elbowed antennae, and a wasp waist (cinched-in) giving them an extremely mobile abdomen. An ant's waist has one or two humps (nodes) on it, depending on species. Eggs are laid from the base of the ovipositor, while the ovipositor itself, in a few species, has evolved into a stinger. So, in species with stingers only females can sting. *(Click images to enlarge or orange text for more information.)*



Ants are social insects and live in a colony



Elbowed antennae



Constricted waist (wasp waist)



Most are wingless workers



Node on waist

Eggs—Queens lay both fertilized and unfertilized eggs. Most are fertilized and become female workers. A few of the fertilized eggs become queens. The few unfertilized eggs are male. Eggs are tended by workers. *(Click images to enlarge or orange text for more information.)*

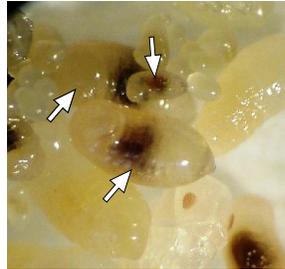


Cluster of ant eggs



Workers tending eggs

Larvae—All are vermiform (worm-like), so they have no legs, no prolegs, no wings, no wingbuds. Heads are difficult to discern. The larvae are the only members of the colony that can ingest solid food, which they regurgitate for the workers to distribute; however they do not create frass. Unable to move on their own, they are transported and tended by workers. *(Click images to enlarge or orange text for more information.)*



Vermiform (worm-like):
no legs, no prolegs

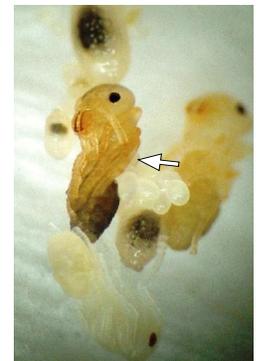


Larvae regurgitate liquid
food for the colony

Pupae—All have a pupal stage, during which the adult form develops. Only males and queens will develop wings. All are exarate pupae, in which the appendages are free and visible. *(Click images to enlarge or orange text for more information.)*



Exarate pupae
Appendages loose



Workers do not
develop wings

Beneficial/Benign Aspects—Ants are important predators, eating the eggs and larvae of many outdoor pests and household pests, including fleas, cockroaches, and termites. They may be as important as earthworms in soil aeration, and are key players in the decomposition of plant and animal matter, the dispersal of seeds, and pollination. In some areas, ants are consumed as food. *(Click images to enlarge or orange text for more information.)*



Ants are as important as
earthworms in soil aeration



Important predators

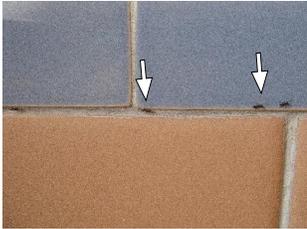


Yummy! Ant adults & larvae
are food for many
people around the world



Ants hunting nectar
are pollinators

Damage—Adult ants can only consume liquid food, such as, nectar and honeydew, although they do have mandibles that they can use to cut up solid food. All solid foods are taken back to the colony where the larvae consume it, then regurgitate it in liquid form for use by the entire colony. Some ants collect honeydew and defend the Hemiptera that produce it. Some even bring phloem-feeding Hemiptera, such as, aphids, scale, and mealybugs, back to their nests to overwinter. Workers, in their search for food, sometimes invade homes and can carry and spread contaminants. Acrobat ants and carpenter ants do not eat wood, but they do excavate into dead and decaying wood for nests. In a few species, such as, acrobat ants, pavement ants and fire ants, the females can sting. All species can bite. *(Click images to enlarge or orange text for more information.)*



Ants following a scent trail into a house



Carpenter ants tunnel into dead wood



Ants also herd scale insects for honeydew



Ants protect aphids for honeydew

Comments—Ants are classified in the order Hymenoptera, Suborder Aculeata, Superfamily Vespoidea, Family Formicidae.

Swarming ants, which have wings, are sometimes mistaken for termites, but ants have a cinched in waist that termites lack, and the forewings of ants are larger than their hindwings whereas termites have wings of equal length. Velvet ants are wingless wasps, not ants. They lack elbowed antennae and the nodes on their waists. For information on ant species in Missouri, see the University of Missouri Extension's [MU Guide G7392 "Ants."](#)