



## Yellow Jackets and Paper Wasps



UC Statewide IPM Project  
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**Adult Western Yellow Jacket**



**Paper Wasp**

### **IDENTIFICATION AND LIFE CYCLE**

In western states there are two distinct types of social wasps: yellowjackets and paper wasps. Yellowjackets are by far the most troublesome group. Paper wasps are much less defensive and rarely sting humans. They tend to shy away from human activity except when their nests are located near doors, windows, or other high traffic areas.

Nests of both yellow jacket and paper wasps typically are begun in spring by a single queen who over winters and becomes active when the weather warms. She emerges in late winter/early spring to feed and start a new nest. From spring to midsummer nests are in the growth phase, and the larvae require large amounts of protein. Workers forage mainly for protein at this time (usually in the form of other insects) and for some sugars. By late summer, however, the colonies grow more slowly or cease growth and require large amounts of sugar to maintain the queen and workers. So foraging wasps are particularly interested in sweet things at this time.

Normally, yellow jacket and paper wasp colonies only live one season. In very mild winters or in coastal California south of San Francisco, however, some yellow jacket colonies survive for several years and become quite large.

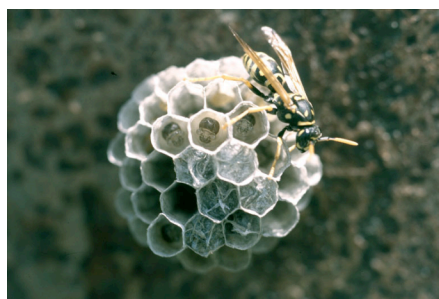
### **Yellowjackets**

The term yellow jacket refers to a number of different species of wasps in the genera *Vespula* and *Dolichovespula* (family Vespidae). Included in this group of ground-nesting species are the western yellow jacket, *Vespula pensylvanica*, which is the most commonly encountered species and is sometimes called the "meat bee," and seven other species of *Vespula*. *Vespula vulgaris* is common in rotted tree stumps at higher elevations and *V. germanica* (the German yellow jacket) is becoming more common in many urban areas of California, where it frequently nests in houses. These wasps tend to be medium sized and black with jagged bands of bright yellow (or white in the case of the aerial-nesting *Dolichovespula* [= *Vespula*] *maculata*) on the abdomen, and have a very short, narrow waist (the area where the thorax attaches to the abdomen).

Nests are commonly built in rodent burrows, but other protected cavities, like voids in walls and ceilings of houses, sometimes are selected as nesting sites. Colonies, which are begun each spring by a single reproductive female, can reach populations of between 1,500 and 15,000 individuals, depending on the species. The wasps build a nest of paper made from fibers scraped from wood mixed with saliva. It is built as multiple tiers of vertical cells, similar to nests of paper wasps, but enclosed by a paper envelope around the outside that usually contains a single entrance hole. If the rodent hole is not spacious enough, yellowjackets will increase the size by moistening the soil and digging. Similar behavior inside a house sometimes leads to a wet patch that develops into a hole in a wall or ceiling.

Immature yellowjackets are white, grublike larvae that become white pupae. The pupae develop adult coloring just before they emerge as adult wasps. Immatures are not normally seen unless the nest is torn open or a sudden loss of adult caretakers leads to an exodus of starving larvae.

Aerial-nesting yellowjackets, *Dolichovespula arenaria* and *D. maculata*, build paper nests that are attached to the eaves of a building or are hanging from the limb of a tree. The entrance is normally a hole at the bottom of the nest. These aerial nesters do not become scavengers at the end of the season, but they are extremely defensive when their nests are disturbed. Defending *D. arenaria* sometimes bite and/or sting, simultaneously. Wasp stingers have no barbs and can be used repeatedly, especially when the wasp gets inside clothing. As with any stinging incident, it is best to leave the area of the nest site as quickly as possible if wasps start stinging.



### **Paper Wasp**

Paper wasps such as *Polistes fuscatus aurifer*, *P. apachus*, and *P. dominulus* are large (1-inch long), slender wasps with long legs and a distinct, slender waist. Background colors vary, but most western species tend to be golden brown, or darker, with large patches of yellow or red. Preferring to live in or near orchards or vineyards, they hang their paper nests in protected areas, such as under eaves, in attics, or under tree branches or vines. Each nest hangs like an open umbrella from a pedicel (stalk) and has open cells that can be seen from beneath the nest. White, legless, grublike larvae sometimes can be seen from below. Paper wasp nests rarely exceed the size of an outstretched hand and populations vary between 15 to 200 individuals. Most species are relatively unaggressive, but they can be a problem when they nest over doorways or in other areas of human activity, such as fruit trees.

### **Mud Daubers**

Mud daubers are black and yellow, thread-waisted, solitary wasps that build a hard mud nest, usually on ceilings and walls, attended by a single female wasp. They belong to the family Sphecidae and are not social wasps but may be confused with them. They do not defend their nests and rarely sting. During winter, you can safely remove the nests without spraying.

### **INJURY OR DAMAGE**

Concern about yellowjackets is based on their persistent, pugnacious behavior around food sources and their aggressive colony defense. Stinging behavior is usually encountered at nesting sites, but scavenging yellowjackets sometimes will sting if someone tries to swat them away from a potential food source. When scavenging at picnics or other outdoor meals, wasps will crawl into soda cans and cause stings on the lips, or inside the mouth or throat.

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