Update
NPMA LIBRARY UPDATE

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Getting the BUZZ on Common Stinging Bees and Wasps

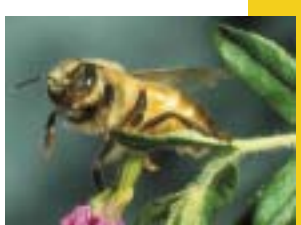
Health-related Bee and Wasp Facts:

- More than 2 million people in the U.S. are allergic to insect stings.
- More than half a million people seek emergency medical assistance each year as a result of insect stings.
- Each year, as many as 100 people die as a result of bee and wasp stings.

Honey Bees

European Honey Bee, *Apis mellifera* L., is a common name for any of several species of highly social bees known for its honey-hoarding behavior and its use as a domesticated species. The European honey bee is important in modern agriculture and in nature, providing pollination for many valuable crops and wild plants. Some fruit crops that rely almost exclusively on honey bees include almonds, apples, apricots, avocados, blueberries, cherries, cranberries, and watermelons. The seeds of many vegetables are also produced with honey bee pollination including asparagus, broccoli, carrots, cotton, cucumbers, onions, and squash.

As much good as European honey bees and their products provide, they can also become a pest to homeowners. Depending upon the type of winter your area has had, honey bees incur a lot of die off typically in their hives over winter months. However, if it is a milder winter, more bees are available to look for nests as they swarm with their new queen. They may find a nice void in your client's home to use as a nest area. Such a void may include the attic, soffits, chimney, or a crawl space. If you start to see honey bees in a client's home, or hear a humming noise behind a wall, or see an oozing substance (honey) behind a wall or ceiling, then it's time to be concerned. Honey bees will construct a new hive in this void area complete with capped honey reserves. This can



European honey bee


Baldfaced hornet


Baldfaced hornet nest

present a real mess for a homeowner. Often times, voids have to be opened up and the nest removed or destroyed. The honey has to be removed as well as the wax comb. If the entire hive is not removed, secondary pests will readily come to it, including rodents, ants, woodpeckers, a variety of dermestid beetles, and wax moths.

If you suspect a honey bee hive in your client's home, call your state beekeeper before applying any pesticides. Your local beekeeper may like to collect the swarm and maintain it as a new managed hive in their bee yard. If pesticide has already been used, then beekeepers will generally refuse it take the hive.

Although considered gentle, domesticated honey bees will sting and a pest professional should always wear PPE (Personal Protective Equipment) to include a full bee veil, rubberized gloves and jacket. Tuck all sleeves, pant legs, collars and belts, so that no surface is exposed. It's probably not a bad idea to keep a cell phone handy in case of a severe allergic reaction to a sting and to have antihistamine tablets close at hand. When removing a stinger, use a credit card or similar surface to brush/scrape the stinger away. Squeezing the stinger will only release more venom and alarm pheromone to alert other bee colony members to sting as well.

Wasps & Hornets

Baldfaced Hornet, *Dolichovespula maculata* L.

These hornets are a single species, yet may be confused with other insects such as related yellowjackets, *Vespula* spp., and cicada killers, *Sphecius speciosus* (Dury). The baldfaced hornet is really a wasp and can be aggressive and may sting repeatedly, so these should be addressed with extreme care.

The workers are large, typically 5/8" to 3/4" but can be up to an inch long. From a distance they may appear to be similar in markings to a common yellowjacket, except that the lighter markings appear white or light yellow.

Baldfaced hornets typically build aerial nests sometimes only being seen after deciduous leaves fall in the autumn months. The nests are bulbous and have the "cells" inside the protected paper exterior, different from paper wasps, *Pollistes* spp., where the cells are visible as inside of an umbrella. Baldfaced hornet nests are usually gray in color and may be found just above ground level to twenty yards or more above ground. Baldfaced hornet nests can reach a size of over a foot in diameter and two feet in length.

Baldfaced hornets can be aggressive and sting repeatedly, especially if the nest is disturbed. These hornets are not

ground dwellers or even typically low shrub dwellers, such as European hornets, *Vespa crabro* L., so it is best to look in areas above the soil line. Nests may also be found inside of rarely used structures such as barns or cottages.

Baldfaced hornet nests have a single queen and she produces all of the eggs in the nest. At the end of the warm season, a new brood of reproductives is released from the nest and these newly inseminated queens will overwinter in a protected area. Other members of the nest, including the original queen, do not survive beyond late fall and the nest is abandoned. The following year, the new queens will start the process over and will begin a new nest.

While these hornets are beneficial insects, if they encounter people, most customers will be alarmed. Nest removal should be done at night when most hornets are in the nest. Some suggest a red light as the hornets cannot see red light well. Control may be achieved by using an aerosol or dust and then removing the nest while wearing full body protection and placing into a trash bag for removal from the site.

Yellowjackets, *Vespula* spp., *Dolichovespula* spp.

Several species of yellowjackets are found throughout the United States. These wasps have characteristic yellow and black markings and workers average 1/2" in length, compared to the slightly larger baldfaced hornet, *Dichovespula maculata* L.

Eastern yellowjacket

According to the *NPCA Field Guide to Structural Pests* by Smith and Whitman, several species are found in the United States. The common yellowjacket *Vespula vulgaris* (Linnaeus), the German yellowjacket, *V. germanica* (Fabricius), and the aerial yellowjacket, *Dolichovespula arenaria* (Fabricius), are found throughout the U.S.

Regionally, the Eastern yellowjacket, *V. maculifrons* (Buysson), is found in the Eastern part of the country, the Southern yellowjacket, *V. squamosa* (Drury), is found in the South and Midwest, and the Western yellowjacket, *V. pennsylvanica* (Saussure), is found in the Western part of the country.

While biology and behavior can vary depending on species, generally, nests can be in the soil or above ground. Nests have a paper coating similar to baldfaced hornets, but the nest is not bulbous in shape and flows between voids, for example in an eave area. Usually yellowjacket nests are not free standing in the exterior areas. Many species prefer protected areas such as between rafters in an attic or between floor joists in an attic.

The biology is similar amongst the species with most having one queen who produces eggs for one season. Late in the season, the males and females are produced, with the females being fertilized towards the end of the season. The new "queens" then leave the nest and over winter in a protected area such as inside tree voids, in walls, etc. In the spring, the queen will leave the site and begin a new nest. Nests are not reused and all other members of the nest will not survive the winter.

Yellowjackets are not usually aggressive unless the nest is threatened. These insects can sting repeatedly and are also a potential health hazard. Populations can soar towards the end of summer and these insects are common pests at picnics and outside functions,

Yellowjacket nest in hay

seeking residual sugars left in sweetened and fermented drinks, such as soft drinks and beer.

Yellowjackets will readily feed on other insects and food preferences can vary from protein to sugars during the season. As yellowjackets are more active during the daytime, the source of the nest, which may be inside, may be traced during the day. Any control measures should be done at night when most workers are back in the nest. Aerosols and dusts are common control measures, depending on the situation. Technicians should wear protective clothing such as a bee suit and veil for all exposed skin. It is also common to remove the nest after treatment if possible, placing the nest into a large secured container for disposal by the pest management firm.

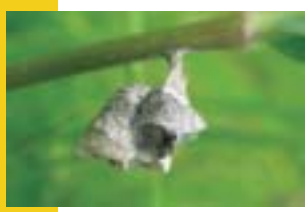
Paper wasps, *Polistes* spp.

Paper wasps get their common name from the umbrella-shaped paper nesting material. Cells of the paper wasps are exposed, unlike nests of baldfaced hornets and exposed yellowjacket nests. While these wasps can appear to be yellowjackets or European hornets at a distance, these yellow and brown wasps are more docile and usually are not aggressive. Coloring and markings will vary according to species.

This wasp will build nests in any protected place such as garage door overhangs, porch ceilings, eaves, and inside covered boats and recreational vehicles. Differing from most other wasps, the paper wasps have no worker caste but use other fertilized queens to tend the nest. Nests have a tendency to be quite small in comparison to wasps with a worker caste. The secondary queens only lay eggs if the primary queen dies.

Paper wasps are resilient in that if the nest is destroyed, they will rebuild the nest quickly. As there is no queen in residence, it is common to find an active nest early in the season with no adult wasps found. Larvae are actively fed through open cells in the nest and are sealed only when the larva is ready to pupate. Food sources are mostly insect derived proteins. The entire nest is held in place by a single strong thin built stem, possibly to protect from predators such as ants.

Treatment should be done when most of the wasps are in the nest, such as at night or early morning. Treatment may include a combination of liquid products including aerosols and in some cases, dusts. Proper personal protection should be used. As the nest is open and exposed, the nest should be removed after treatment.



Paper wasp nest

Paper wasp

Stinging References

1. *Baldfaced hornet*
   Credit: Edward L. Manigault, Clemson University Donated Collection, www.insectimages.org
2. *Baldfaced hornet nest*
   Credit: Jerry A. Payne, USDA Agricultural Research Service, www.insectimages.org
3. *Yellowjacket nest in hay*
   Credit: Georgia Forestry Commission Archives, Georgia Forestry Commission, www.insectimages.org
4. *Paper wasp*
   Credit: Russ Ottens, The University of Georgia, www.insectimages.org
5. *Paper wasp nest*
   Credit: Maja Jurc, University of Ljubljana, www.insectimages.org
6. *Bee and Wasp Facts: NPMA member Web site www.npmapestworld.org*
7. *NPCA Field Guide to Structural Pests, Chapter II. Smith & Whitman.*