

# Baldfaced Hornet & Aerial Yellowjacket

**Scientific Names:** *Dolichovespula maculata* (L.) (baldfaced hornet), *D. arenaria* (Fabricius) (aerial yellowjacket)

**Order:** Hymenoptera (Bees, Wasps, Ants, Sawflies and Relatives)

**Family:** Vespidae

**Identification and Descriptive Features:** Adults are prominently marked with either black and white (baldfaced hornet) or black and yellow (aerial yellowjacket) markings. The general body form is elongate with the hind end terminating in a blunt point (with stinger) and they are only sparsely hairy, unlike bees. The baldfaced hornet is the larger species, typically over 15 mm in length. Size range within a colony varies with workers being smaller, usually within the range of 10-14 mm.

Adults of the aerial yellowjacket are quite similar to the western yellowjacket, *Vespula pensylvanica* (Saussure), in both size and general coloration. The pattern of markings on the abdomen can be used to separate these insects (Figures 6-9).

**Distribution in Colorado:** Both the baldfaced hornet and aerial yellowjacket normally nests in trees or large shrubs and are native to forested areas. However, with landscaping provided around residential areas these wasps may now commonly be found in most towns and cities, with the exception of some in the eastern plain communities. The aerial yellowjacket, in particular, has also adapted to nest on buildings.

**Life History and Habits:** The baldfaced hornet and aerial yellowjacket, the two primary representatives of the genus *Dolichovespula* in Colorado, make large above ground carton nests of a papery material. These nests are produced annually, initiated in spring by a single overwintered queen and abandoned at the end of the season.



**Figure 1.** Baldfaced hornet collecting honeydew from oak galls.



**Figure 2.** Aerial yellowjacket chewing on weathered wood.

Queens are fertile, mated females that are produced late in mid-late summer. During the cold months they scatter from the old hive and find shelter under bark flaps, in hollow logs and other protected sites. In spring the queen resumes activity and attempts to establish a colony. This involves initial nest construction and she produces a small nest with about 20-45 cells for rearing young. Both the nest cells and surrounding envelope are produced from chewed plant fibers, such as weathered wood.



**Figure 3.** Nest of baldfaced hornet built at the base of a shrub.

The larvae develop in hexagonal cells in a paper comb and the queen feeds them masticated insects that she captures. After about a month after the first eggs are laid the first workers, infertile females, emerge and begin to assist with colony maintenance and expansion. Once sufficient workers are available the queen remains within the colony and dedicates her activity to rearing more young. Colony size may increase greatly during the summer months and hundreds of individuals are typically produced. Concurrently, the nest expands dramatically, with the external paper envelope covering a multi-tiered series of horizontal combs.

Toward the end of the colony cycle larger cells are produced that are used to rear reproductive forms. These include larger, fertile females that are the sole stage surviving between seasons. A number of males are also produced at this times which mate with the future queens.

Both species normally nest above ground, on trees, shrubbery, or, sometimes, on structures. Although generally similar in construction there are some differences in nesting between the two species.

Nests of the aerial yellowjacket have a covering of laminar construction that is generally uniform in external appearance while the paper envelope of a baldfaced hornet is more scalloped and can vary considerably in coloration. Nests on buildings are almost always produced by the aerial yellowjacket; baldfaced hornets restrict nesting to shrubs and trees.



**Figure 4.** Aerial yellowjacket nest.

Colonies of the aerial yellowjacket usually go into decline earlier in the season than do baldfaced hornet colonies. Queens and males may begin to be produced in early August and colonies are frequently abandoned by early September. Baldfaced hornet nests often survive into October. Ultimately, nests of both species are completely abandoned and are never reused. (Note: Other insects, including European paper wasps, may use old nests for overwintering sites.)

Both the baldfaced hornet and aerial yellowjacket are predators, rearing their young almost exclusively on a diet of chewed caterpillars and other insect prey. This is supplemented with

