

**Local Wasps Acquitted of Being the Asian "Murder" Hornet:  
Update to "Eye on Invasive Species: Asian Giant Hornet"**

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**Introduction**

During the past few months several Oklahoma residents have encountered what they feared was the Asian Giant Hornet (AGH), a.k.a. the "murder" hornet, *Vespa mandarinia* Smith (Fig. 1). This fear comes from the much 'hype' generated from various media outlets. However, what Oklahoman's are seeing are "Murder" hornet look-alikes.

In Oklahoma there are a few species of large wasps (also called hornets) that at first glance resemble the AGH. To date, only two colonies of AGH have been found in the USA and subsequently destroyed. One colony was found in Northwestern Washington State, and another on Vancouver Island, Canada. Additionally, one individual AGH was recently captured by the Washington State Department of Agriculture near Birch Bay, Whatcom County, Washington (Silva 2020; Cohen 2020).



**Figure 1. Asian Giant Hornet, top view.**  
**Body length = 1½ inches; wingspan = 3 inches**  
**Photo credit: Purdue University**

To date, no AGHs have been detected in Oklahoma, but other large native wasps such as the eastern (Fig. 2) and western (Fig. 3) cicada killers are common. In contrast to what their name suggests, cicada killers are not aggressive and have a relatively weak sting. As predators of cicadas they are considered beneficial insects (Rebek 2020). Another species of wasp that can be confused with the AGH is the European hornet (Fig. 4), which was first introduced into North

America between 1840 and 1850 in New York State. The focus of this Pest e-alert is to help Oklahomans differentiate AGH from other large wasps.

## Oklahoma look-alikes

### Cicada Killers

There are several North American wasps, bees, and wasp-like insects that can be confused with AGH. The most common and obvious look-alike is the eastern cicada killer, *Sphecius speciosus* Dahlbom (Fig. 2). These stout wasps are a fixture in Oklahoma landscapes during the heat of the summer, and females are often seen dragging cicadas along the ground to their nest entrances. Females can sting, but they are non-aggressive. You are more likely to have a close encounter with the highly territorial males, who can't sting but like to dive-bomb passersby that encounter their well-defended area (Rebek 2020).

A close relative to the eastern cicada killer that is also found in Oklahoma is the western variety, *Sphecius grandis* Say (Fig. 3). This species shares the same ground-nesting behavior as the eastern cicada killer.

As their name implies, both wasps target most species of cicadas, and after paralyzing them with their sting, drag them into their in-ground burrows for their offspring to feed on. Their burrows are found in a variety of urban soil settings including flower beds, yards, and even sand traps and grassy areas next to golf greens. Both species are solitary wasps, meaning they don't live in large colonies like social wasps. However, many individual wasps may live in aggregations of burrows next to each other.

### European Hornet

The European hornet, *Vespa crabro* L., is also a large insect found in the U.S. It is considered the only true hornet established in North America (Fig 4). The first documented case of this hornet in the U.S. was in New York State in 1840 (Jacobs 2010). Since then, they have spread throughout most states east of the Mississippi River, and are also found in Arkansas, Missouri, and northeastern Oklahoma.



Figure 2. Eastern cicada killer.  
Photo credit: Charlie Konemann,  
K. C. Emerson Entomology museum



Figure 3. Western cicada killer.  
Photo credit: Charlie Konemann,  
K. C. Emerson Entomology Museum



Figure 4. European Hornet.  
Photo credit: Charlie Konemann,  
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European hornets are social insects that prefer woodland areas, usually building large nests in tree hollows and abandoned bee hives, but they will also nest in structure wall voids (Johnson 2016). They have been seen stripping bark from young tree limbs, which they use to build nests. Their diet consists of other arthropods, including bees and yellow jackets (Waldvogel et al. 2020).

## Summary

These three look-alikes are just a few of the stinging wasps that are sometimes misidentified as AGH. There are many others found in Oklahoma that can inflict painful stings. Keep in mind that AGH is not likely to become established in Oklahoma in the near future, if ever. Even if a solitary AGH worker is accidentally transported into Oklahoma from the Pacific Northwest, a growing colony will not establish because workers are not fertile and cannot reproduce. Only mated queens can establish new colonies (Rebek 2020).

If anyone believes they have an image or actual specimen of Asian Giant Hornet, please notify Eric Rebek ([eric.rebek@okstate.edu](mailto:eric.rebek@okstate.edu)), or Charlie Konemann in the Plant Disease and Insect Diagnostic Lab (PDIDL), at [gotbugs@okstate.edu](mailto:gotbugs@okstate.edu), or [charles.e.konemann@okstate.edu](mailto:charles.e.konemann@okstate.edu). A word of caution – never approach any wasp or hornet nest, especially if you know you are allergic to wasp or bee venom (Rebek 2020).

## References

- Burke, Mack. 2020.** OSU professor sheds light on ‘Murder Hornets’.  
[https://news.okstate.edu/articles/communications/2020/osu\\_professor\\_sheds\\_light\\_on\\_murder\\_hornets.html](https://news.okstate.edu/articles/communications/2020/osu_professor_sheds_light_on_murder_hornets.html).
- Cohen, Li. 2020.** Washington State officials captured their first invasive murder hornet, with less than two months until mating season. <https://www.cbsnews.com/news/murder-hornet-has-been-captured-in-washington-now-the-state-has-less-than-two-months-to-find-and-destroy-the-rest/>
- Jacobs, Steve. 2010.** European Hornet. Extension fact sheet PH-7, Penn State University, College of Agricultural Sciences.
- Johnson, D. 2016.** European Hornet in Kentucky. ENTFACT-600.
- Rebek, Eric. 2020.** Eye on invasive species: Asian giant hornet. Pest e-alerts, Vol. 19, No. 19.
- Silva, Christianna. 2020.** Scientists in Washington State Have Trapped Their 1<sup>st</sup> Murder Hornet.  
<https://www.npr.org/2020/08/01/898173003/researchers-in-washington-state-have-trapped-their-first-murder-hornet>
- Waldvogel, Michael, S. Bambara and M. Bertone. 2020.** European hornets: biting and stinging pests. NC State Extension publication. <https://content.ces.ncsu.edu/european-hornets>
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