

Natter's Notes

Asian giant hornet, *Vespa mandarinia*

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As is true with the introduction of numerous other invasive species, there is no real way to tell how the Asian giant hornets (AGH; *Vespa mandarinia*) arrived in the Pacific Northwest. Among the possibilities are via international container ships, imported products, travelers visiting the US, or people returning from another country. The hornets are native to temperate and tropical eastern Asia, including parts of Japan, China, India, and Sri Lanka. (<https://agr.wa.gov/departments/insectspests-and-weeds/insects/hornets/faq>)

Facts

- An adult is 1 1/4" to 2" long with a striped abdomen, orange head, and black eyes
- AGH predators and are a potential serious threat to honeybees
- AGH are ground-nesters, active from May to August
- AGH has an annual colony, with cooperative care of the larvae by the workers.

Current distribution

To learn where AGH have been sighted, see the map at <https://agr.wa.gov/hornets>. (Be patient; the map loads slowly.) The map will be updated as additional reports are made.

Life cycle

AGH nests underground, often in abandoned rodent burrows. It's an annual colony in which all, except the mated queens, die at the end of the season, August, in their native land. Metamorphosis is complete, with 4 life stages: Egg; larva; pupa, a non-feeding resting stage; and adult. The life cycle is about 40 days. The larvae are fed masticated prey by the workers. Adults are predators of many large-bodied insects such as grasshoppers and beetles. European honey bees (*Apis mellifera*) are very susceptible to attack.

In the spring, the overwintering queens locate a nest site and lay about 40 eggs. She rears the first generation which then takes over food gathering and larval care. The colony is aggressively defended throughout the season. In the fall, males wait at the entrance for the females, mate, then die.



Vespa mandarinia on hand – (Photo: Takehiko Kusama; found in Niigata, Japan - <http://www.vespa-crabro.de/vespa-mandarinia.htm>)



Vespa mandarinia, dorsal view (forestryimages - [5570920](https://www.forestryimages.org/docimage/5570920) Allan Smith-Pardo, *Invasive Hornets*, USDA APHIS PPQ, Bugwood.org)

Management

- This is definitely not an opportunity to be a hero. AGH's half-inch long stingers can easily penetrate a traditional beekeeper's suit. After your sighting is verified, let the pros do the heavy lifting.
- Commercial traps for wasps and/or hornets won't work because the holes are too small.

Critical cautions

- AGH seldom sting humans but, when they do, the effect can be very serious.
- Use extreme caution near Asian giant hornets. The venom is more toxic than local bees or wasps.
- Beekeeping gear won't protect you.
- Persons allergic to bee or wasp stings should never approach an Asian giant hornet and/or its nest.
- If you find an individual or colony, report it to your state Department of Agriculture immediately. (See the list of Resources.)

Opportunities for MGs

Well, as is common when a new invasive insect is reported, numerous "sightings" have been reported but only 2 verified. A newspaper in Louisiana even ran a story saying essentially "It's not here."

A prime opportunity for every Master Gardener is to share a research-based Teachable Moment with family, friends, and the public. One way is to provide a Pictorial ID of Look-a-Likes (at the end of this story) which compare sizes of insects which might be confused with AGH.

Resources

- Asian giant hornet – A list of reliable resources related to this recent invader which includes a link to report a sighting in Oregon. <http://agsci-labs.oregonstate.edu/vegnet/2020/05/05/asian-giant-hornet-pnw-info-sources/>
- "Don't panic over Asian giant hornet" (KGW8 News: text and brief video; May 4, 2020) - <https://www.kgw.com/article/tech/science/environment/murder-hornet-spotted-in-washington/283-a9b560e3-e7fd-4a66-ac34-3015c2390aa0>



Vespa mandarinia, anterior view. The head is orange; the compound eyes and 3 ocelli are dark brown; antennae are dark brown with orange scapes (the base); mandibles are orange, each with a sturdy black tooth. (forestryimages 5570925 Allan Smith-Pardo, Invasive Hornets, USDA APHIS PPQ, Bugwood.org)



Vespa mandarinia attack and crush honeybees one after another with their mandibles until all the honeybees are wiped out, then carry away all of the larvae. Just 30 vespa hornets can wipeout a honeybee hive of 30,000 in 3 hours. (<http://www.vespa-crabro.de/vespa-mandarinia.htm>)

Note: The next page is a pictorial size comparison of the Asian giant hornet, *Vespa mandarina*, with other insects which may be mistaken as the invasive hornet.