



Photo By Scott Camazine

TEXAS A&M
AGRILIFE

- > The AGH is native to Japan.
- > They were first discovered in fall 2019 in British Columbia, Canada, and in Washington State.
- > The AGH has not been detected in Texas.
- > The AGH is a predator of honey bees.
- > If established, this hornet could devastate honey bee populations.
- > Honey bees are managed for both their honey and their pollination services.
- > The AGH will aggressively defend its nest or any honey bee hive it occupies.
- > Migratory beekeepers who move bees between Texas and the Western U.S. are not how the AGH would make it to Texas.
- > Any honey bee hive occupied by the AGH would be occupied by sterile hornet workers, which cannot reproduce and begin a new colony.



ASIAN GIANT HORNET

The Asian giant hornet, *Vespa mandarinia*, or AGH, is a large, predaceous hornet native to Asia, most commonly found in Japan and South Korea.

The AGH is the world's largest hornet, even slightly larger than the cicada killer wasp common in Texas. It was discovered for the first time in North America in August 2019 in British Columbia, Canada, and located and eradicated in September 2019.

Two specimens were collected near Blaine, Washington, in the northwest corner of the state. Efforts are underway this spring to trap hornets near Blaine and other sites where citizens have seen or collected hornets.

Until insects are trapped in the spring and summer of 2020, we won't know if this species has adapted to the Pacific Northwest climate.

Could the AGH get to Texas?

Yes, most commonly anticipated mode of travel is as a stowaway in shipping containers.

What threat does this hornet pose?

The most immediate threat is to the beekeeping industry. This insect is a specialized predator of honey bees in Asia. The Japanese honey bee is not the same species used in the U.S. Because the Japanese honey bee co-evolved with the AGH, it has defensive behaviors that protect it from attack. The European honey bee, the species used in the U.S., has no defense against the AGH. In addition to the threat to beekeepers, this large venomous insect (1.5 to 2 inches in length—or the size of your thumb) can deliver a powerful sting. Its venom is no more toxic than other stinging insects. In Japan, the AGH kills 30 to 50 people a year. In a matter of hours, 15 to 30 AGH can kill a hive of honey bees containing 30,000 to 50,000 workers. The hornets then occupy the hive, kill the developing larvae and take this protein-rich meal to their nest.

What to do if you think you have spotted the AGH

If possible, take a photo, if you can do so safely, and send it to the Department of Entomology through the Online Insect Identification Form (<https://askanentomologist.tamu.edu/insect-id-form/>). If you find a dead specimen that has a bright yellow head and it is over 1.5 inches long, collect it and ship it to the Department of Entomology by following these instructions and Form for Collecting and Shipping Specimens for Identification (https://askanentomologist.tamu.edu/files/2019/08/insectid_form.pdf).

Management and Biology

The commercial and hobby beekeepers in Texas are our first line of defense. They will contact the Texas Apiary Inspection Service for assistance if they notice bee kills and observe these insects near a hive. This hornet does not construct an aerial nest like some wasps do. The AGH and many other hornets and yellowjackets use an abandoned animal burrow to build their nest, making it difficult to locate. But locating and eradicating the AGH nest in spring and summer is the goal. In fall, the nest begins to develop reproductives (males and virgin queens) that leave the nest. Only the mated queen overwinters. All other nest occupants die during the winter. The newly mated queen seeks shelter where she will pass the winter, emerging in spring to find a suitable nesting site to rear the initial set of sterile workers. Once the nest has a few dozen workers, the queen never leaves the nest again and the cycle starts over in the spring.

Movement

The AGH is a strong flier and can travel several miles. When a honey bee colony is attacked, an AGH colony is likely within 0.5 to 1.5 miles. A related hornet from Asia recently established in France and its rate of spread is about 60 miles per year. Since this range is beyond the flight distance of this species, human-aided movement is likely. Shipping containers are suspected as a key route of entry into North America. Another possible route of entry is by air transport. In Asia, AGH larvae are a prized delicacy and have been confiscated from luggage in airports.



Next Steps

- > We need to know if the AGH found in Washington survived the winter and if there are active colonies this spring and summer.
- > We need the help of every Texan to keep an eye out for these large hornets. In spring, they feed on sap from trees or at hummingbird feeders.
- > Early detection followed by eradication of nests before fall is critical to prevent establishment.



Dr. David Ragsdale, PhD

Associate Director and Chief Scientific Officer

600 John Kimbrough Blvd., Suite 512
2142 TAMU
College Station, Texas 77843-2142

(979) 845-8486
david.ragsdale@ag.tamu.edu