Guam New Invasive Species Alert No. 2016-01

Greater Banded Hornet

Vespa tropica

(Hymenoptera: Vespidae)

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July 13, 2016
Updated August 19, 2016

Fig. 1. The first greater banded hornet collected on Guam with a honeybee for size comparison. Photo by Olympia Terral.

On July 12, 2016, University of Guam research assistant Christopher Rosario discovered a colony of large wasps nesting in a hollow avocado tree in Dededo, Guam (13.50533° N, 144.80134° E). The wasps were aggressive, resulting in only single specimen being collected. This observation was posted on the iNaturalist web site (http://www.inaturalist.org/observations/3663868).

On July 20, 2016, Arnold Perez of the Leo Palace Resort delivered 5 specimens of *Vespa tropica* to Dr. Aubrey Moore at the University of Guam. Perez discovered a nest near a swiiming pool (http://www.inaturalist.org/observations/3710757). Specimens were placed in the University of Guam Insect Collection.

A press release was issued requesting residents of Guam to report sightings of *V. tropica*. These sightings are being documented in an iNaturalist project set up for this purpose (http://www.inaturalist.org/projects/vespa-tropica-on-guam).

Description

UOG entomologists (Sablan and Moore) identified the wasp as *Vespa tropica* based on publicly available images and keys [Archer(1991)]. This species determination was confirmed by Dr. Jason Mottern at the USDA Systematic Entomology Laboratory.

Vespa tropica is a medium-sized to large species. Queens reach 30mm or more, males average 26mm and workers average 24 to 26mm.

The nest of *Vespa tropica* is usually underground or in a tree hollow or similar enclosed space. Due to the location, the nest is seldom seen. If excavated, the nest usually appears rhomboid or bowl-shaped, with an open bottom (as opposed to the completely sealed nests of most aerial hornets). The nest envelope is laminar (comprising of distinct, broad individual layers) and very brittle.

Human Health Risk

V. tropica is very aggressive and readily stings in the vicinity of its nest. Death caused by the venom from multiple stings from this species has been documented, but this is very rare. As with any stinging insect, an allergic reaction (anaphylaxis) is far more dangerous. About

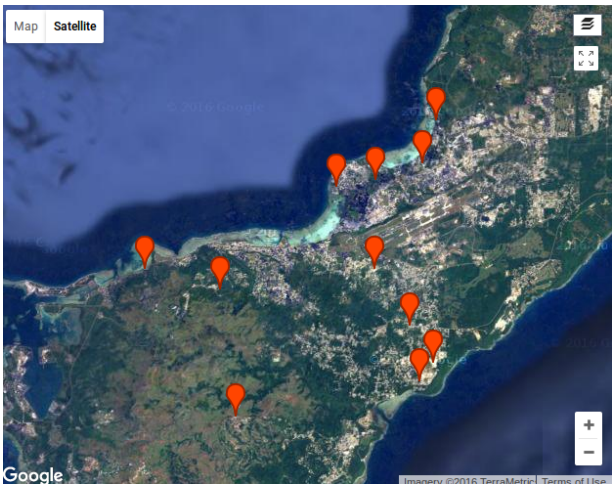

Fig. 2. *Vespa tropica* sightings to date.

3% of adults are allergic to insect stings [Golden(2007)] .

Environmental and Agricultural Risk

This species is known to attack the nests of Polistines (paper wasps) in order to obtain the larvae to feed their own larvae. On Guam, a video recording has been made by Wayne Borja which documents *V. tropica* raiding a *Polistes stigma*, one of 2 species of small paper wasps locally referred to as "boonie bees" (https://www.youtube.com/watch?v=gVXR44ixrxk). *V. tropica* has also been reported to raid hives of the European honeybee, *Apis mellifera* [Burgett and Akratanakul(1982)].

Geographic Distribution

Global Distribution

Vespa tropica is found in China, Japan, Malaysia, Hong Kong, Singapore, India, and the Philippines [GBIF Secretariat: GBIF Backbone Taxonomy()].

Guam Distribution

To date, there have been eleven sightings of *V. tropica*, all in central Guam (Fig. 2).

Control Recommendations

The Guam distribution of *V. tropica* indicates that island-wide eradication is not feasable. If a *V. tropica* nest is discovered, it should be left alone unless it is in a high risky area such as immediately adjacent to a home or school. Nest removal is dangerous and should be attempted only by experienced pest control operators.

References

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