

# The Hunt is On

By Jason Learner, Animal and Plant Health Agency (APHA)

**V***espa velutina*, also known as the Asian hornet, or yellow-legged hornet, is an aggressive predator of honey bees and other insects, although it poses no greater risk to human health than our native bees and wasps. In Europe, it was confirmed for the first time in Lot-et-Garonne in south-west France in 2004. It has since extended its geographical range to Spain, Majorca, Belgium, Portugal, Italy and Germany. This is a phenomenal rate of spread involving travel of up to 60–100km/ year.



Asian hornet.

We have noted previously that it could reach the UK by flying across the channel or by hitching a ride on imports through an airport or other entry point.

## Current status in the UK

The Asian hornet was found in the UK in September 2016. A single hornet was caught by a beekeeper and sent to us for identification. Soon after, two dead worker hornets were found in separate locations in north Somerset. All samples were confirmed as Asian hornets by an expert entomologist. A nest near Tetbury was also found and destroyed by the National Bee Unit Inspectors and members of the Wildlife team in the APHA. After extensive field inspections, no further foraging Asian hornets were sighted in Gloucestershire or north Somerset. Although this is good news, the ability of the Asian hornet to spread rapidly means that we must remain vigilant and alert to signs of any possible activity across a wide area. We have continued surveillance throughout the winter by sending inspectors to investigate credible sightings and, where possible, we have carried out DNA analysis of nest debris to determine whether it came from an Asian hornet nest or another species of *Vespa*. Fortunately, so far, none of these analyses have proven positive for *V. velutina*. Genetic analysis did, however, confirm that the hornet nest found in Tetbury and the dead hornet found in north Somerset were of the same genetic population (*V. velutina nigrithorax*) as those which came from eastern China to France. Although we cannot rule out the hornet arriving directly from the same area of China, we believe this is highly unlikely.

**Vigilance:** With spring here, I am sure I do not need to remind you that we need to be even more vigilant in monitoring for the hornet's presence in the UK. The Tetbury example

shows us that it could show up anywhere. Part of our vigilance is being able to identify an Asian hornet; you would be surprised how many beekeepers as well as members of the public misidentified the European hornet (*V. crabro*) as *V. velutina*. In a previous article we outlined insects that are most often mistaken for Asian hornets. This can be found at <http://www.nationalbeeunit.com/index.cfm?pageid=166>, titled 'Cases of Mistaken Identity: the Asian hornet'. Additionally, I have produced an ID page which highlights the main features of *V. velutina* overleaf, and there is a helpful Asian hornet ID sheet and poster on our website: <http://www.nationalbeeunit.com/index.cfm?pageid=208>

**Traps:** If you have not already done so, you may consider hanging out traps. On a warm day, mated queen hornets may emerge from hibernation as early as February and will be foraging for a sugary food in order to begin nest production. Spring trapping therefore helps to reduce nest populations and subsequent predation on hives. Worker hornets will be on the wing throughout the beekeeping season, right up until November. So hanging out traps throughout the beekeeping season is also useful for monitoring.

It is believed, from comparing the effects of different Asian hornet trap designs in France, that funnel traps work best. Field trials show that funnel traps hung in apiaries where hornets are present, can capture considerable numbers of hornets (~400 hornets/week/ trap). Nest numbers may be reduced by over 90% in areas where traps are deployed in the spring. A few commercial traps are available, but we have also produced our own simple version, which is inexpensive and looks good too. Making it



Two hornets feasting on apple. Asian hornet, *V. velutina* is seen at the bottom left, and European hornet, *V. crabro*, is at the top right.

only takes around twenty minutes, if you have the right tools, and instructions can be found at: <http://www.nationalbeeunit.com/index.cfm?pageid=208> under *Monitoring for the Asian hornet*.

**Bait:** We recommend using sugar-based baits in spring, for example; a mixture of dark beer (not lager), strawberry syrup and orange liqueur, as this was popular in France. In the field we have also found a protein bait of mashed fish e.g. prawns or trout, diluted to 25% to be effective, but this works best later in the season, when protein is required for larval development.



The new monitoring trap design. All photos courtesy of APHA.

**Look for nests:** Another simple means of monitoring for hornets in your area is to look for nests in trees. In France, Asian hornets can form nests in many types of tree, so, although the nest in the UK was found in a conifer, do not restrict your search to this particular variety. Start your search this spring, while in apiaries treating or feeding colonies by glancing at the surrounding tree lines. Although nests could be at any height, in France most are reported around 50–60 feet up.

**Reporting:** If you believe you have seen an Asian hornet, you should report it to [alernonnative@ceh.ac.uk](mailto:alernonnative@ceh.ac.uk). When emailing, please include your name, the location of the sighting and if possible, a photograph of the hornet. Please do not put yourself in any danger of getting stung when trying to take a photo. Even if you are unsure, send it in anyway; it is better to be safe than sorry!

## Last but not least!

If you have not already done so, please sign up to BeeBase! Although not compulsory, it is important so that we can help protect your colonies, especially in and around the area of any outbreak. Knowing where apiaries are helps enormously in knowing where to send our Bee Inspectors. Not knowing where apiaries are means that our eradication and containment efforts could be less effective.

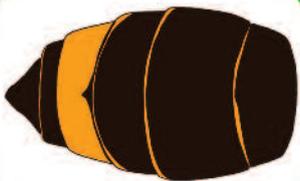
# Asian hornet identification

Being able to identify what the Asian hornet looks like is the first line of defence against this invasive species. Many people believe that they can distinguish between the Asian hornet, *Vespa velutina*, and our native species the European hornet, *Vespa crabro*, which can be found throughout Europe. However, you would be surprised how many European hornets were incorrectly identified as the Asian hornet - even by beekeepers!

## Black or dark brown thorax and body

Coloration is often based on contrasted patterns of light and black pigments as a warning signal to predators. It is possible that geographic variation drastically modifies this signal, driven by different selective pressures. *Vespa velutina* spp. have 14 known colour variations, each of which have different abdominal colourations to each other. *Vespa velutina nigrithorax*, which is the subspecies found in Europe has an entirely dark brown or black velvety body, bordered with a fine yellow band on the 4th abdominal segment.

*Vespa velutina*, Asian hornet, abdominal colouration

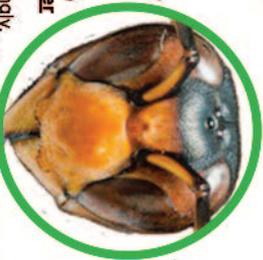


*Vespa crabro*, European hornet, abdominal colouration



## Asian hornet Species description

The Asian hornet has a black or dark brown velvety body (abdomen) with a characteristically black thorax, orange face and yellow tipped legs. Workers measure at 25mm while queens can reach up to 30mm, so despite it's fearsome reputation it is smaller than our native European hornet (30mm -35mm in length). Interestingly, unlike our native European hornet, the Asian hornet does not fly after dusk which is why most nest destructions take place when the sun has gone down.



## A distinctive orange face

The orange face of the Asian hornet is a key feature which sets it apart from other insects. It is virtually entirely orange, bar a black strip at the top of it's forehead which also reaches down the side of it's eyes. They also have dark coloured antennae. When standing out in the apiary and watching Asian hornets hawking at colonies, you will notice the orange face as it 'flashes' at you when it turns from facing a hive to facing towards returning foragers as it tries to intercept the returning bee.

## Distinctive yellow legs

The Asian hornet has brown upper legs with characteristic yellow ends (like yellow knee length socks). This stands out when compared to our native hornet which have entirely reddish brown legs. However, do note that this is not a unique characteristic and can be seen with other *Vespa* species.



## Report sightings of this species to:

[altrnominative@ceh.ac.uk](mailto:altrnominative@ceh.ac.uk)

It is important to note the location as accurately as possible as well as obtain a photograph to allow experts to confirm identification of the specimen. Please report the sighting immediately (sending a photograph if possible).