



Arrival of Asian Hornet

The National Bee Unit has confirmed a finding of the Asian hornet in the Tetbury area of Gloucestershire – the first time the hornet has been discovered in the UK. **Jason Learner** reports

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 the south west of France, in 2004, twelve years ago. It has since extended its geographical range to Spain, Majorca, Belgium, Portugal, Italy and Germany. The Asian hornet can travel up to 60 km/year and, in previous articles, it has been noted that it could reach the United Kingdom (UK) by flying across the channel or by hitching a ride on imports through an airport or other exotic risk point.

Until this year, all reports had proven to be other, native insects which had been mistakenly identified. However, this year, the Asian hornet made several appearances close to our shores. The first sighting was in Alderney, in July, where a nest was discovered and subsequently destroyed. The following month, a single adult hornet was photographed by an amateur entomologist at Mount Bingham, in Jersey. The image was confirmed as being of an Asian hornet by the National Bee Unit. A thorough search of the area failed to find further evidence. No further hornet activity has been detected on either island since.

Recent Finding

On 17 September, a hornet sample was collected by a beekeeper in

Gloucestershire and reported to the local bee inspector who submitted it to the Fera Science laboratory. The sample was confirmed as an Asian hornet by an expert entomologist. The photograph, above, shows the actual hornet that was submitted.

Response

The Asian Hornet Contingency Response Plan was immediately activated and a Local Disease Control Centre (LDCC) was set up in Gloucester to allow the National Bee Unit to coordinate the response. From the LDCC, its inspectors have been using geographic information system (GIS) mapping to survey the local environment and determine the position of local waterways, rivers and deciduous and evergreen trees. This helps to

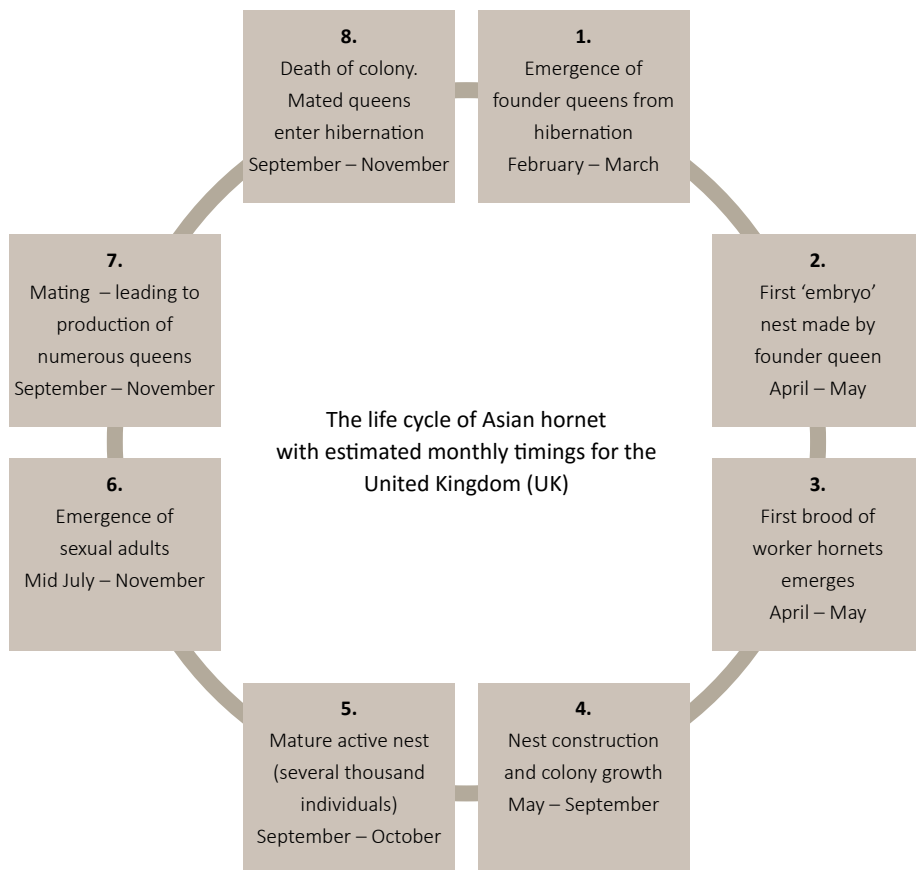
identify where any hornet nests could be and where best to concentrate the search. Initially, bee inspectors have been deployed across a 5km surveillance area around Tetbury, to inspect local apiaries and look for any of the typical hawking behaviour of the Asian hornet. They have also been handing out hornet monitoring traps to local beekeepers in the area.

The National Bee Unit is also working with members of the the Animal and Plant Health Agency's (APHA) wildlife team who are responsible for the destruction and disposal of any Asian hornet nests found and, with residents' permission, carrying out a sweep of the gardens in the area to check for any potential nests in trees and sheds.

Biology of the Asian Hornet

The queen, usually measuring up to 3 cm in length, starts building an embryonic nest in spring and lays eggs at a rapid rate. During this time, she is alone and vulnerable until the first workers emerge. As the colony and nest size increases, a larger nest is either established around the embryonic nest or the hornets relocate and build elsewhere.

During the summer, Asian hornet predation on honey bee colonies increases and continues until the end of November. Hornets can be seen hovering outside a hive entrance, waiting for returning foragers. This is the characteristic 'hawking' behaviour. When a hornet catches a returning bee, it will take it away and feed off of the protein rich thorax; this is transformed into flesh



pellets and then offered to the brood, which requires animal proteins.

During autumn, the priorities shift from foraging and nest expansion to producing potential queens and male hornets for mating. After this period, fertilised queens will leave the nest to over-winter. The following spring, the founding queens will begin building their new colonies.

What Can Beekeepers Do to Help?

Being able to distinguish between hornets is a start. European hornets, wood wasps and hoverflies are all commonly mistaken for the Asian hornet. Insects most frequently mistaken for the Asian hornet have been identified in an article, published in *Bee Craft*,

Hawking behaviour outside a hive entrance is characteristic of Asian hornet





An Asian hornet (left) and a European hornet (right), feeding on a rotten apple



Abdomen markings of European hornet (left) and *Vespa velutina* (right)



Wood wasp



Mimic hornet

titled: 'Cases of Mistaken Identity: The Asian Hornet', a copy of which can be found on the National Bee Unit's website at: www.nationalbeeunit.com/index.cfm?pageid=166

There is a helpful Asian hornet identification sheet and poster available from the Non-native Species Secretariat website at: www.nonnativespecies.org/alerts/index.cfm?id=4

Traps

Beekeepers could also consider hanging traps for the Asian hornet. On warm spring days, mated queen hornets may emerge from hibernation as early as February. However, worker hornets will be on the wing throughout the beekeeping season, right up until November. So, hanging out traps for the period between these two months is useful for monitoring.

It is believed, from different designs used for the Asian hornet in France,

that funnel traps work best. Field trials show that when funnel traps are hung in apiaries where hornets are present, they capture considerable numbers of individuals (around 400 hornets per week per trap) and nest numbers are reduced by over 90 per cent in areas where traps are deployed in the spring.

There is a design for a home-made trap, titled: 'A Simple Asian Hornet Monitoring Trap' on the National bee Unit's website at: www.nationalbeeunit.com/index.cfm?pageid=167.

Baits

The National Bee Unit recommends that sugar based baits – for example, beer and sugar – are used because emerging Asian hornet queens have a high energy requirement and show a preference for sweet foods. In early spring, such food resources are comparatively rare in the environment, so sweet baits are highly attractive to the hornets.

If you believe you have seen or captured an Asian hornet, you should report it to: alertnonnative@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's 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 the National Bee Unit 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 bee inspectors. Not knowing where apiaries are means that eradication and containment efforts could be less effective. □