

Getting to know ... HORNETS

What should you do when you are attacked by a swarm of hornets?



Hornet's nest on a tree.



Hornet's nest on a water tank.

Your natural instinct will be to run. And you should - as quickly and as gracefully as you can. The hornet is the most dangerous of all flying insects in Singapore. It stings by injecting a proteinaceous material from the tip of its abdomen. This causes a painful allergic reaction in some individuals, which can result in death caused by shock or suffocation.

What makes the hornet the most feared is that it uses its unbarbed sting to repeatedly attack its victim. On the other hand, the honeybee attacks only once because its sting is shaped like a fishhook, which causes it to be left behind in the wound after only one sting, and then the bee dies.

That is why the Hokkiens have a nickname for the hornet ("hor-tow pang" meaning the tiger head bee!) that evokes both fear and respect.

Hornets are social wasps belonging to the family Vespidae. The 3 common species in Singapore are:

1. Lesser Banded Hornet, *Vespa affinis*
2. Greater Banded Hornet, *Vespa tropica*
3. Yellow-vented Hornet, *Vespa analis*

The Lesser Banded Hornet is the most aggressive of the three species. If provoked, it will attack in swarms of as many as 500 insects. Fortunately it builds its nest high up on trees. The Greater Banded Hornet is the largest in size and will usually build its nest in enclosed space like the roof's void space, inside wooden boxes and cupboards. The Yellow-vented Hornet will only attack when greatly provoked and normally builds its nest on trees and thick vegetation.

You recognise a hornet by its shiny black coloured body, with yellow-banded abdominal segments. In the case of the Yellow-vented Hornet, its last abdominal segment is yellow. In contrast, a bee's body is fuzzier with a distinctive pollen-collecting basket (basitarsus) on each hindleg. The wasp is a solitary insect and like the hornet, is thin waisted.

The hornet's nest is an intricate work of art and engineering. It is made of wood which the hornet chews from tree trunks,

grass stems, unpainted fence posts, cardboard boxes and dried-out weeds, and converts into a pulpy mass (like papier-mâché) by its salivary secretion. This is lighter than the mud nests of solitary wasps or the wax hives of social bees, and is just as hardy. A hornet's nest has a characteristic pattern and is multistorey, each floor is suspended from the one above on stiff paper ropes.

A nest is started by a mated queen (just like the ant, the male hornet dies soon after mating) when she builds a small number of cells, places an egg in each, and cares for the larvae when the eggs hatch. When the first sterile female workers emerge from pupation after about 4 weeks from the time the queen started to build the nest, she allows them to take over the nest building and brood rearing while she carries on egg producing. While the hornets feed their young with protein matter like insects, caterpillars and spiders, the adults feed on liquids like nectar and juices from the bodies of insects fed to the larvae.

Biologists have come to realise that the hornets care for their young for selfish motives and not because of any devotion to duty. The adults care for the young and in return the larvae secrete a sweetish substance on their lips, which the adults lap up. This relationship of care-to-food reward is called *trophallaxis* and is more immediate compared to us humans who have to wait for our children to grow up before there can be any material reciprocity, if we are lucky.

Hornets are a very beneficial group of insects, being pollinators of flowering plants and fruit trees, and reducing the number of many insect pest species. Unfortunately when their nest is threatened or when the individual is trapped or threatened, their defensive reaction is to sting. The best course is for us to avoid provoking them. This is done by observing the following Precautions. A



The Sting.



Intricate pattern of a multistorey hornet's nest.

PRECAUTIONS

1. Do not disturb a hornet's nest unnecessarily. Call Aardwolf Pestkare if you believe it poses a danger.
2. Do not wear bright, flowery clothing or shining jewelry/buckles when moving in shrubs or thick vegetation in the countryside.
3. If you are a golfer, do not wear perfume, scented lotion or cologne on the course. You don't want to be mistaken for a walking, talking, swinging flower stalk!
4. Do not suddenly swat at bees, hornets or wasps flying around you. If they turn out to be hornets, which you had mistakenly thought to be bees or wasps, you will provoke them into attacking you.
5. Do not shine torchlight directly into a hornet's nest at night because its residents will be attracted to the brightest light source and attack.
6. If under attack, retreat as fast as possible. If retreat is not possible, lie face down as still as you can and cover your head with your arms. If available, dive into a pool of water and stay submerged as long as possible or necessary.