

ASIAN GIANT HORNET

North Korea issued Scott #4846 on 1 July 2009, a 50w stamp showing the Asian giant hornet, *Vespa mandarinia* Smith, Vespidae, Vespinae. This stamp was also included in #4849a, a booklet pane of one each of #4848-49.

This wasp is the World's largest wasp and is native to east Asia. It is about two inches (5 cm) long with a stinger a quarter inch long (6 mm). It is also known as Japanese hornet, yak-killer, tiger bee and sparrow bee. It forms a large paper nest, similar to that of the American white-faced wasp. The venom is one-third less toxic than that of the honeybee but because of the larger size of the wasp, venom is injected in greater volume and hence has a greater effect. Furthermore, the stinger being barbless, unlike the honeybee, the hornet can sting the victim multiple times. The venom is a mixture of several materials and produces tissue damage, great pain and the odor attracts more hornets. About 40 persons per year die from the attack of this wasp, more than all other venomous and non-venomous animals.

Rather than stinging its prey, it usually uses its crushing mandibles to kill. These giant wasps are vicious attackers of honeybee hives and as few as thirty giant wasps can wipe out a hive of 30,000 honeybees in a few hours. The initial attacker releases a hormone that attracts more Asian wasps. The wasps bite the heads off the bees and are unaffected by the attack and sting of individual Western honeybees (*Apis mellifera* L.). However, the native Japanese honeybees (*Apis cerana japonica* Radeszkowsky) can protect their hive from attacks by the giant Asian hornet. When the bees detect the hunting hormone odor of an attacker, they prepare a trap and when the hornet enters the hive, several hundred bees completely surround the attacker and prevent it from moving. They rapidly vibrate their flight muscles and build up the temperature to 117 degrees F. (47 degrees C.). The bees can survive this temperature but the hornet dies when the temperature exceed 115 degrees F. An excess of carbon dioxide produced by the bees probably contributes to the wasp's death. With its death, there is no attacking hormone released to call in further wasps.

The wasps attack honeybee hives in order to get the bee larvae which are chewed into a paste and fed to the wasp larvae. The adults cannot digest solids but the wasp larvae produce a liquid vespa amino acid mixture (VAAM) which they feed to the adults. The larvae of many social Vespids produce similar amino acid mixtures. VAAM are sold in Asia and Europe in dietary supplements and energy drinks and are manufactured by several companies using various synthetic mixtures of the amino acids. They are said to enhance endurance, since VAAM is said to explain the endurance of the wasps that can fly up to 60 miles per day at up to 25 miles per hour.

In some villages in Japan this Asian (or Japanese) giant wasp is collected as a delicious source of protein and is eaten as hornet sashimi or deep fried.

Bibliography:

1. http://en.wikipedia.org/wiki/Asian_giant_hornet
2. www.worsleyschool.net/science/files/japanese/hornet.html . Note: this includes a 1Mb video of a hornet attack on a European bee hive and an attack on Japanese bees where it is killed by the bees
3. <http://sciencelay/biology/zoology/asian-giant-hornet-or-japanese-wasp-meet-the-real-killer-bee/>
4. www.youtube.com/watch?v=1k-qmb . See item 2 above
5. http://news.nationalgeographic.com/news/2005/10/1012_510./

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