



Hornets and Large Wasps



In Australia, the term 'hornet' is often applied to any large wasp, particularly if it should be black and orange. However, this use of the term is incorrect as true hornets do not occur in Australia. Most often, the insects referred to as hornets in Australia are large mud-nest wasps of the genus *Abispa* (pictured left). Mud-nest wasps are very different in habits from true hornets.

A mud-nest wasp, *Abispa ephippium*. Wingspan approx. 50 mm.

True hornets are social wasps of the genus *Vespa*, a group of 20 species occurring naturally only in Asia, Europe and Africa with one species introduced to North America. They are closely allied with *Vespula* species (e.g. European Wasp and American 'yellow-jackets') and, like them, develop large, well-defended colonies inhabiting complex nests composed of a papery material. Nests are fully enclosed in an envelope of the same material and are usually built in cavities. Occasionally, they may be built in exposed positions, such as on a branch of a tree, when they can become the target of children throwing stones (hence the term 'stir up a hornet's nest'). *Vespa* and *Vespula* species do not occur naturally in Australia but the European Wasp, *Vespula germanica*, has become established in the eastern states and frequent incursions have been detected in Western Australia. True hornets prey on other insects including honeybees and social wasps and chew them into a paste as food for their larvae.

The closest relatives of hornets and yellow-jackets to occur naturally in Australia are the paper-nest wasps, *Polistes* and *Rhopalidia* species (family Vespidae: subfamily Polistinae). Like hornets, these are social wasps that construct nests of a papery material but they differ in developing only relatively small colonies and their nests are not enclosed in an envelope. Consequently, their brood cells remain exposed to view (see Information Sheet: Paper-nest wasps).

More distant relatives of the hornets are the mud-nest wasps or potter wasps (Vespidae: Eumeninae), all of which are solitary in habits. Nests of this group consist of one to a few cells built from mud and which are commonly found attached to the walls of houses or sheds. Eumenine wasps capture and paralyse moth caterpillars which are stored whole as food for their larvae. The adults range from under ten millimetres to over 30 mm in length, the largest species belonging to the genus *Abispa*. Mud-nest wasps are commonly seen about pools of water where they gather water and/or mud and will readily enter human constructions in search of nesting places. They need not

be feared for, like all solitary wasps, they are non-aggressive and will only sting if handled roughly.

Not all mud-nest builders belong to Eumeninae. Other wasps that build with mud are the slender black and yellow *Sceliphron* species and the much smaller *Pison* species (both members of the family Sphecidae) and a few members of the spider wasp family, Pompilidae. All of these solitary wasps hunt and paralyse spiders as food for their larvae.

The very large and diverse family Sphecidae includes some large wasps prone to being termed 'hornets', in particular species of *Sphex*, *Prionyx* and *Isodontia*. Some of these have body lengths up to 35 mm. Most members of these three genera hunt long-horned grasshoppers (e.g. katydids and raspy crickets) and true crickets which are stored whole as food for their larvae. *Sphex* and *Prionyx* construct burrows in the soil while *Isodontia* species use pre-existing cavities.



Photo: Geoff Byrne

Other large, solitary wasps that may be confused with hornets are the black and orange/yellow members of the spider wasp family Pompilidae. Largest of these are the species of *Heterodontonyx* and *Cryptocheilus* (pictured left) which specialize in huntsman spiders. The wasps seek their prey in dark cavities under bark, in tree hollows or logs, rabbit warrens, etc., all the while flicking their orange and black wings. Having stung a spider into paralysis, the wasps drag it to a previously dug burrow in the soil. Be warned that, unlike most solitary wasps, these large spider wasps have been known to sting people who have got too close to their prey items.

Further reading:

Evans, HE & West Eberhard, MJ. (1973). *The Wasps* (David & Charles (Holdings) Ltd, Newton Abbot).

Naumann, ID. (1991). Hymenoptera (wasps, bees, ants, sawflies) in *The Insects of Australia. A textbook for students and research workers* (Second edition) (Melbourne University Press, Melbourne).

O'Neill, KM. (2001) *Solitary Wasps: Behavior and Natural History* (Cornell University Press, Ithaca, New York).

Ross, KG & Matthews, RW (eds). (1991). *The Social Biology of Wasps* (Cornell University Press, Ithaca, New York).

Spradberry, JP (1973). *Wasps: An account of the biology and natural history of solitary and social wasps with particular reference to those of the British Isles* (Sidgwick & Jackson, London).