# Paper Wasps

**Fact Sheet**

Paper Wasps. Image: QM, Jeff Wright.

## Introduction

The strings of paper wasp nests hanging from the eaves of an old Queenslander or from a rusty barbed wire fence are a typical part of Australia. Most of us have, at one time, blundered into them and run blindly through the bush pursued by their angry owners. However, the attacks by paper wasps are all in the cause of home security and most stings are received near their nests. Away from the nests, they rarely attack and stings are usually the result of a wasp becoming entangled in clothing or being accidentally grasped.

Paper wasps make their nests by chewing weathered wood and mixing it with saliva. This soft material is formed into the required shape with their jaws and it dries to a stiff, papery form. A nest consists of a number of cup-like cells, grouped together to form a comb. The comb is attached to a surface such as a branch, twig or rock face by one or more stalks or peduncles. There are several different species of paper wasps and each has a distinctive nest design.

Nest of Ropalidia impetuosa, showing capped cells. Image: QM, Jeff Wright.

## Biology

In spring, new nests are started by one or several females that have been inactive through the colder months, resting in cracks and crevices. Paper wasps, like ants and some bees, are social insects, meaning each nest consists of a cooperative colony of females. Only one female, the queen, lays all the eggs. The reproduction of all the other females in the colony is suppressed and the workers are responsible for feeding the young and maintaining and enlarging the nest. Unlike honeybees, the queen of Australian paper wasps is very similar in appearance to the workers. She lays an egg in the bottom of each empty cell. When the wasp grubs or larvae hatch they are fed with chewed up caterpillars collected by the workers. When the larvae are fully grown, the workers close up the cell with a pale-coloured cap of papery material. The larvae turn into pupae within the cells and some time later new adult wasps emerge and remain with the colony. In this way the nests expand in size as summer progresses. As the weather cools the colony produces male wasps. These mate with the females who then find sheltered places in which to spend the winter. Those females that survive the colder months begin new colonies in spring.

## How many paper wasps?

Australia has about 35 native species of paper wasps ranging from 8 to 26 mm in length and patterned in yellow, brown and black, often with a banded abdomen. Paper wasps are unusual in having their front pairs of wings folded lengthwise when they are not in use. This distinguishes them from other wasps except potter wasps, a group that uses mud rather than paper as their nest-building material.

Our native paper wasps belong to two groups or genera, *Polistes* and *Ropalidia*. Native paper wasps are found throughout Australia excluding Tasmania and the south-western corner of Western Australia although this area has two introduced species of *Polistes*. Tropical Queensland has the most species of paper wasp in Australia. Australia also has two introduced species of European paper wasps belonging to a third genus, *Vespula.*

### *Polistes*

Paper wasps belonging to this genus are usually larger than species of *Ropalidia* and the first segment of the abdomen following the waist is generally broader and evenly merges into the rest of the abdomen.

*Polistes* sp. nest. Image: QM, Jeff Wright.

All species of *Polistes* build nests of a similar type. They consist of a single circular or subcircular comb with a central or slightly offset point of attachment or penduncle. The nest is never surrounded by a papery envelope. The mushroom-shaped nests, commonly suspended from the eaves of houses, are built by several species of *Polistes*. These wasps, which include *P. humilis* and *P. stigma* in Brisbane, are medium to large in size with a yellow, brown, and sometimes black colour pattern. *P. schach* is larger and almost completely reddish-brown. It builds large combs in hollow trees and fallen logs.

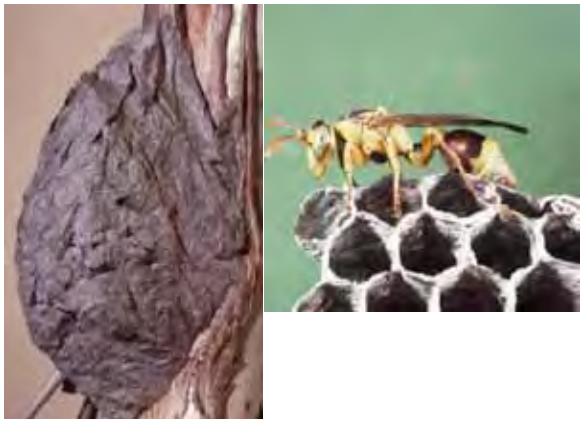
### *Ropalidia*

Species of *Ropalidia* are usually smaller than *Polistes* and the first segment of the abdomen following the waist is generally more slender and distinctly narrower than the following segment.

*Ropalidia revolutionalis* nest and wasps. Images: QM, Jeff Wright.

*Ropalidia revolutionalis* is a small to medium sized, dark reddish-brown wasp, very common from south-eastern to northern Queensland. It builds very distinctive nests that are frequently found on garden shrubs or fences. Each comb consists of a vertical strip two cells wide, attached by a peduncle at the upper end. Large colonies of this species may be made up of a row of several combs.

Another common but less noticed species is *Ropalidia romandi,* a small, yellowish wasp with dark-brown markings. It builds a nest of several combs stacked upon each other and covered by a thin, papery outer envelope. In northern Queensland its nests are medium-sized and normally attached to the foliage of trees but in south-eastern Queensland the nests may be huge, sometimes over a metre long. They are normally attached to the underside of the branches of large trees especially eucalypts. When the trees shed their bark the nests fall to the ground. The wasps immediately abandon the fallen nest and build a new nest. Occasionally this species builds on the walls and eaves of houses.



*Ropalidia romandi* nest. Image: QM. *Ropalidia romandi* wasp. Image: Robert Ashdown.

### *Vespula*

Both introduced species of Vespula are natives of Europe. The English wasp (*Vespula vulgaris*) is now found in Victoria. The European Wasp (*Vespula germanica*) occurs in Tasmania, Victoria and New South Wales.

Vespula species can be distinguished from our native species in a number of ways. Their abdomen has a very bold pattern of yellow bands on a black background, and the front of the abdomen is abruptly cut off and square shaped. The abdomen of native species is also banded but the colours are less bold and there are usually shades of brown in addition to yellow and black. In our native species the abdomen is more smoothly rounded or tapers in front.

While a few isolated nests have been found in south-eastern Queensland, none have been recorded for several years. Should you discover a wasp's nest that you suspect belongs to Vespula, please contact the Queensland Museum.

#### Stings and first aid

Mostly people are stung when a paper wasp nest is disturbed or the wasps feel their nest is threatened. The wasps will swarm out, pursue the intruder, and may inflict multiple stings. Stings from paper wasps are immediately painful and the site of the sting may remain itchy and swollen for days. The first aid recommended by Queensland Poisons Information Centre (Phone 131126) is to : wash the sting area with soap and water and apply an anitspetic; apply an ice-pack to reduce pain and swelling; and seek medical attention if there are symptoms other than a local reaction or there are sings of infection. Some sensitive individuals who are allergic to chemicals foreign to the body can react severely and anaphylaxis may occur. For anyone showing signs of severe reaction call 000 for an ambulance and have the patient taken immediately to the emergency department of the nearest hospital.

## Control

Paper wasps feed their young on caterpillars and play a beneficial role by controlling these garden pests. If wasp nests are located in out of the way places, then they are probably best left alone. It is advisable to remove nests located in high traffic areas. However, if there is even a remote chance of highly allergic people being stung, nests should be removed.

Most nests of *Ropalidia* and *Polistes* can be easily destroyed using cans of fast-acting insecticides. Simply knocking down the nests is not enough to remove the wasps as they will usually rebuild in the same spot. The best time to apply insecticide is at dusk or after dark because all the wasps will have returned to the nest and are likely to be more docile. Nests of *Vespula* and large nests of *Ropalidia romandi* are more difficult and potentially dangerous to remove and should be left to experienced pest exterminators.

#### Further Information

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