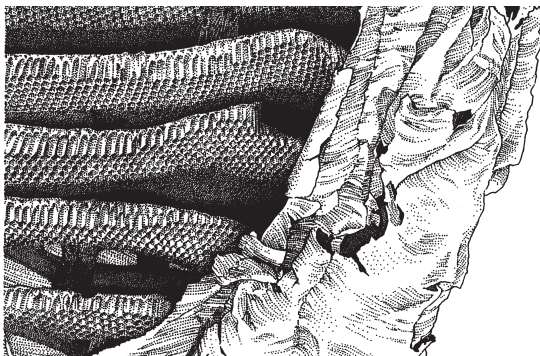


Illustration, Sybil Monteith

Introduction

The strings of paperwasp 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 paperwasps are all in the cause of home security and most stings are received near their nests. Away from the nests they rarely attack, with stings usually the result of a wasp becoming entangled in clothing or being accidentally grasped.



Exposed portion of *Ropalidia romandi* nest

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Paperwasps 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 paperwasps, each with a distinctive nest design. Some are made up of a single comb, while others have two or more combs. The nests of most Australian paperwasps have the combs clearly visible, but at least one species covers the whole nest with a thin, papery envelope.

Life History

In spring, new nests are started by one or several females that have been inactive through the colder months, resting in cracks and crevices. Paperwasps, 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, the workers, is suppressed and they are responsible for feeding the young and maintaining and enlarging the nest. Unlike honeybees, the queen of Australian paperwasps 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 nest expands 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.

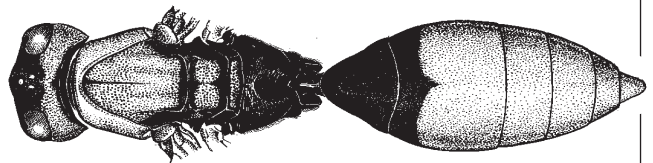
How many paperwasps?

Australia has about 35 native species of paperwasps ranging from 8 to 26 mm in length and patterned in yellow, brown and black, often with a banded abdomen. Paperwasps 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 paperwasps belong to two groups or genera, *Polistes* and *Ropalidia*. Native paperwasps are found throughout Australia, excluding Tasmania and the south-western corner of Western Australia, though the south-west does have two introduced species of *Polistes*. Tropical Queensland has the greatest variety. Australia also has two introduced species of European paperwasps belonging to a third genus, *Vespula*.

Polistes

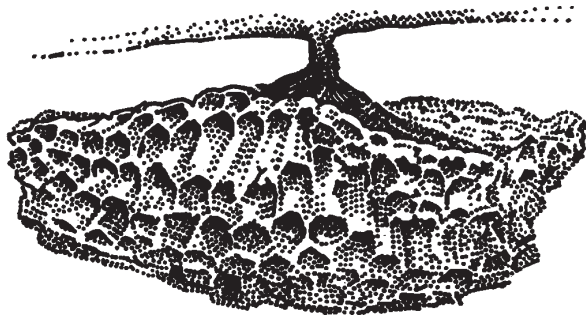
Paperwasps belonging to this genus are usually larger than species of *Ropalidia* and the first segment of the abdomen following the waist is generally broader and evenly merges into the rest of the abdomen.



Polistes

Sybil Monteith

All *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 peduncle. 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 *Polistes humilis* and *Polistes townsvillensis* in Brisbane, are medium to large in size with a yellow, brown, and sometimes black colour pattern. *Polistes schach* is larger and almost completely reddish brown. It builds large combs in hollow trees and fallen logs.

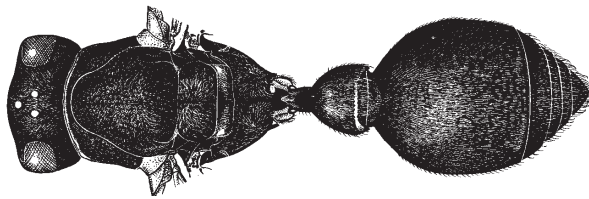


Polistes nest

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Ropalidia

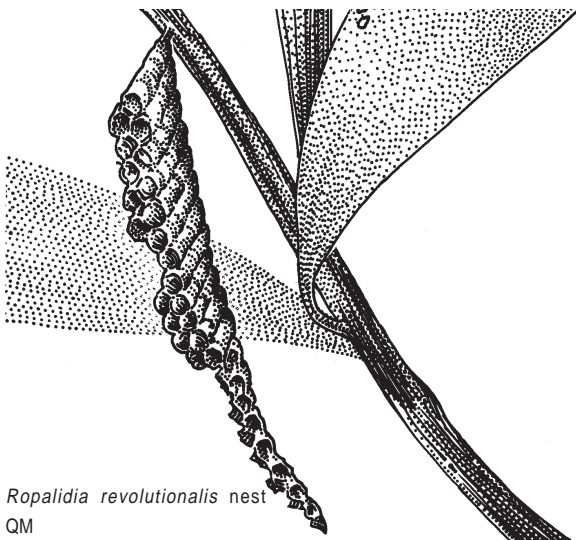
Species of *Ropalidia* are usually smaller than *Polistes* and the first segment of the abdomen following the waist is generally more slender and distinctly narrower than the following segment.



Ropalidia

Sybil Monteith

Ropalidia revolutionalis is a small to medium sized, dark reddish-brown wasp, common from south-eastern to northern Queensland. It builds 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.



Ropalidia revolutionalis nest

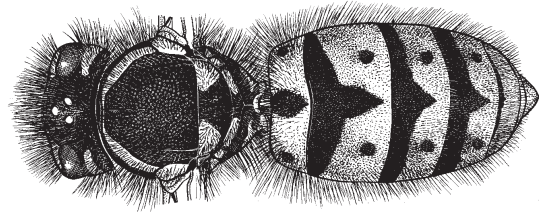
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Another common but less noticed species is *Ropalidia romandi*, a small, yellowish wasp with dark-brown markings. It builds a nest of several combs stacked upon each other and covered by a thin, papery outer envelope. In northern Queensland its nests 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.

Vespula

Both introduced species of *Vespula* are natives of Europe. The English wasp (*Vespula vulgaris*) is now found in Victoria, while the European Wasp (*Vespula germanica*) occurs in Tasmania, Victoria and New South Wales, with a few isolated nests having been found in south-eastern Queensland.

Vespula species can be distinguished from our native species by a number of features. 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.



Vespula germanica

Sybil Monteith

Species of *Vespula* pose more of a threat to human health than our native species because of their different nesting and feeding habits. Unlike native species, they normally build their nests in cavities underground, but they have been known to use artificial cavities above ground. Mature nests of *Vespula* may be very large, numbering many thousands of wasps that will attack vigorously if disturbed. In addition, accidental stings away from the nest are more common from species of *Vespula*. Unlike native paperwasps, which mainly hunt caterpillars, the workers of *Vespula* have wider tastes and are attracted to meat and sweet, sugary foods. As a result they are more likely to come into contact with humans and accidental stings are more likely. For example, people may be stung on the mouth after a wasp crawls into a partly consumed soft drink.

Control

Paperwasps 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 are probably best left to experienced pest exterminators.

Further Information

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