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TERMITE FACT SHEET

Termites have been a natural part of the ecosystem on earth for more than 150 million years. Although commonly called 'white ants', they are not ants and in fact, are more closely related to cockroaches.

Australia has approximately 300 species of termite, fortunately only about 15 attack timber important to humans, the rest are mainly grass feeders. Termites can be roughly divided into 3 groups: dampwood, drywood and subterranean. Dampwood termites generally feed on moist rotten logs on the forest floor and rarely cause a nuisance to humans. Drywood termites live in small pockets in the dead wood of trees and timber in houses. They obtain their moisture from the timber they eat and require no contact with the soil. Subterranean termites are generally ground-dwelling and require soil contact or some external source of moisture. Subterranean termites cause the most damage to timber in-service in Australia and will be the type of termite talked about below.

Termite Biology

Termites are social insects in that they live and work together in large colonies with each individual having a specific task to perform to enable the colony to function. These tasks can be divided into three main roles working, protecting and reproducing. Each task falls to different types (castes) of termite (ie: worker, soldier and reproductive,) with each caste having a specialised body shape and behaviour to enable them to perform these tasks.

The worker does as its name suggests and does so 24 hours a day, 7 days a week. Workers build the nest and galleries, tend the eggs and young, gather food and feed the rest of the colony. Workers are wingless, sterile, blind and are white to translucent in appearance.

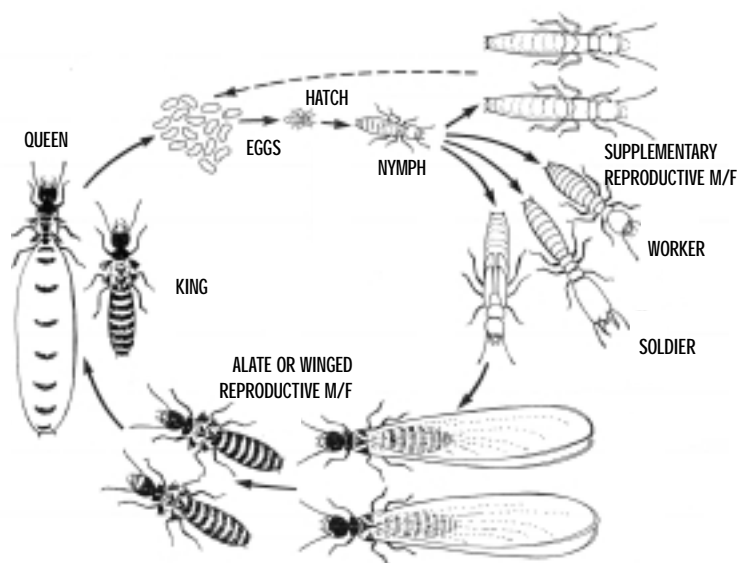
The soldiers are distinguished from other castes by their heads, which are heavily armoured and coloured. They also are wingless, sterile and blind. Because their mandibles are so specialised, soldiers must be fed by the workers. The primary function of the soldier is to defend the colony against predators such as ants. Soldiers rely on chemical as well as physical weapons. Some soldiers bite their attacker whilst others spray or inject a poison. Some have strongly built heads, which may be used as plugs to seal the nest from predators.

The soldier caste is the most distinctive and is usually used to identify a particular species.

The reproductive or alate castes are the potential kings and queens of new colonies. They possess eyes, functional reproductive systems and wings.

They usually swarm (leave the colony) in spring to early summer, or late summer to early autumn, often through specially constructed flight exits. They normally swarm at dusk and may be attracted to lights at night. Termite alates are commonly found in spider webs.

After swarming, the alates break off their wings and if the conditions are right, begin building a new colony. The original mating pair become the new king and queen. The king does not change shape during this phase. The queen's abdomen becomes enormously enlarged until she is completely immobile, becoming an egg laying machine. In some species, the queen is capable of laying up to 2000 eggs a day.



Nests

Termites build various types of nests. Some termite species have a total underground existence without a central nest whilst others build a central nest in the soil, or in dead or living trees. Some species attach their nest to the outside of a tree but maintain soil contact via galleries running down the outside of the trunk.

A termite mound is the most familiar form of termite nest. Mounds are often very distinctive in form depending on the species of termite.

They can vary in size and shape from hardened flat lumps of soil to tall, columnar structures, which may be more than 7 m high.



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Coptotermes acinaciformis



Mastotermes darwiniensis



Schedorhinotermes spp

Feeding behaviour

Termites feed on dead or living plant material containing cellulose. Cellulose is digested by intestinal protozoa or bacteria, which also contain essential amounts of nitrogen. Often termites dispose of excess, dead and diseased members of the colony by cannibalism, thereby conserving nitrogen.

Some species of timber are resistant to termites, but none is 'termite proof'. Termites will often damage materials they cannot digest, for example, plastics, rubber, metal or mortar. Primarily, this damage occurs when the indigestible items are encountered in the termites' search for food.

Most termites forage for food by means of underground galleries or covered runways which extend from the central nest to food sources above or below ground. The gallery system of a single colony may exploit food sources over as much as

one hectare, with individual galleries extending up to 50 m in length.

Apart from grass-eating species, which forage in the open, all termites remain within a closed system of galleries where they are protected from natural enemies such as ants, and from temperature and humidity extremes.

Distribution and importance

There are about 15 species of subterranean termites which commonly attack timber-in-service throughout Australia with the most common being *Coptotermes*, *Schedorhinotermes*, *Nasutitermes* and the giant northern termite *Mastotermes darwiniensis*. Generally the amount of termite activity and therefore damage, increases the further north in Australia you go, with soil type also having an important influence on termite distribution.

In reality, any structure containing wood is exposed to possible subterranean termite invasion unless protective measures are taken.

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