

Insects of the Wet Tropics

There are over a million named species of insects, and in Australia approximately 90 000 species of insects have been described.

The Wet Tropics of Queensland has the highest insect diversity in Australia. Insects have an exoskeleton which provides excellent protection from the environment on the outside and strong points for muscle attachment on the inside. Adult insects have three pairs of legs, one pair of antennae, three obvious body divisions (head, thorax and abdomen) and wings. The immature stages (larvae) of many insects look very different.

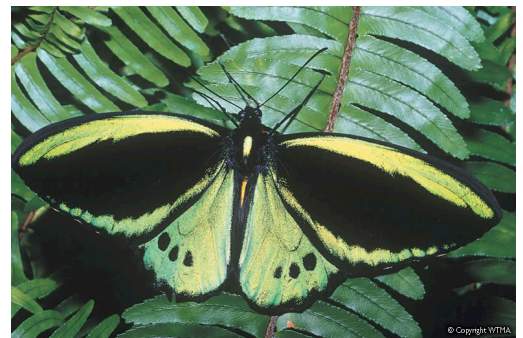
Life Cycles

Insects grow in stages by shedding their exoskeleton (moulting) and replacing it with a larger one. These changes are collectively called metamorphosis. The number of stages varies depending on species. Only adults can breed or fly. In primitive winged insects transition is gradual and there are no dramatic changes in body form.

The nymphs usually resemble the adults and wing development on the outside of the body is gradual until at the last moult the wings are fully formed. The larvae of modern winged insects look very different from the adults. A fully-grown larva will moult into a non-feeding pupa (chrysalis), a special resting stage which undergoes dramatic transformation before hatching out to a winged adult.

Cairns Birdwing (Male) - *Ornithoptera priamus*

Butterflies may be distinguished from moths by a combination of clubbed antennae, the habit of sitting with their wings upright when resting and the lack of a frenulum (a wing-coupling spine along the hind wing). The Cairns Birdwing is the largest butterfly in Australia. Unlike the male (pictured), the larger female is brown and white with a red patch on each side of the thorax. (Wingspan, male 130mm; female 150mm)



Christmas Beetle - *Anoplognathus aureus*

Beetles are found in huge numbers and diversity and are nature's great success story. These colourful metallic gold beetles with large unequal moveable claws are commonly known as Christmas beetles, as they appear during summer, particularly December to January. The larvae feed on grass roots and most adults on eucalypt foliage. Christmas beetles often buzz loudly in flight. (Length 18mm)



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Northern Greengrocer - *Cicada Cyclochila virens*.

Cicadas are most abundant in warm climates and their noisy chorus is a familiar sound during our Australian summers. Their nymphal 'skins' are a common sight on tree trunks and fences. The Northern Greengrocer Cicada is usually found in lush rainforest. Adults are present from September through to early February. (Length 75mm)



Four O'Clock Moth Caterpillar - *Dysphania numana*

This large, conspicuous caterpillar has rows of oval spiracles along the sides of its body that resemble portholes. All insects breathe through these apertures where oxygen is distributed to the internal body cavity via a system of air tubes (tracheae). (Length 35mm)



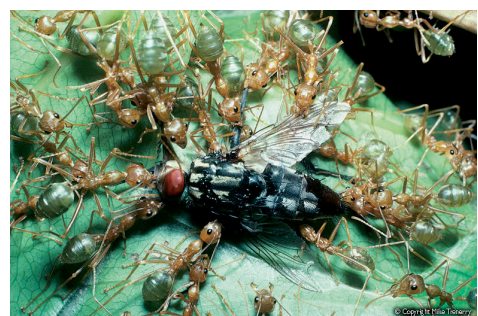
Four O'Clock Moth - *Dysphania numana*

This spectacular moth is one of a few brightly coloured day-flying moths in the Wet Tropics that are often mistaken for butterflies. Unlike butterflies, this moth usually takes to the wing in the late afternoon, flying until after dark. (Wingspan 85mm)



Green Tree Ant - *Oecophylla smaragdina*

Unlike ground-dwelling ants, these ants construct their nests in trees. The workers form ant chains, clinging to each other with claws and jaws. They draw leaves together and bind them with silk, squeezed from larvae held by other workers. Due to its aggressive behaviour this ant dominates the tropics. Their success lies in a cooperative battle strategy where they pin down their victims prior to dismemberment. (Length 10mm)



Hercules Moth - *Coscinocera hercules*

This spectacular moth is one of the largest moths in the world with the female's wingspan reaching 30cm and the male 25cm. The hind wing rear corners of the male (pictured emerged from a pupa) stretch into a long tail and its colour is more distinct than the female. Adults emerge year-round, but most often during warmer months. (Wingspan, male 250mm; female 300mm)



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Leaf Katydid

Katydid are mainly plant eaters and are numerous in the Wet Tropics. Green in colour, they blend into the environment with wings that often resemble leaves. When disturbed they adopt a rigid pose to enhance camouflage. Insects commonly employ clever and effective methods of concealment that help them blend with their environment. These adaptations are termed 'cryptic'. (Length 65mm)



Mueller's Stag Beetle - *Phalacrognathus muelleri*

This beetle is found only in the rainforests of the Wet Tropics and is considered one of the world's most beautiful beetles due to its size and dazzling colours of metallic green, gold and purple. Mating rituals are quite dramatic. The female's scent attracts males who then use their long curved mandibles in combat. The losing beetle makes a hasty retreat. (Length 35-70mm)



Potter Wasp & nest - *Delta arcuata*

Potter wasps are the largest group of mud wasps and their dome-shaped mud nests are commonly seen in sheltered positions, often on house walls. The female Potter wasp places paralysed caterpillars and a wasp egg inside each nest chamber, then seals it. On hatching the larva feeds on the caterpillars. (Length 25-30mm)



Rhinoceros Beetle - *Xylotrupes gideon*

These stout-bodied beetles are one of the largest of our scarab beetles. The male's forked horns are used in jousting matches with male rivals when competing for a female's attention and favours. Females lack horns and have a matt texture. This nocturnal beetle is attracted to lights and when threatened, makes a loud hissing sound by rubbing its abdomen against the ends of its wing covers. (Length 40-60mm)



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Spiny Leaf Insect - *Extatosoma tiaratum*

Camouflage provides insects with protection from predators. Stick insects excel as camouflage artists in mimicking sticks, bark, leaves and grasses. This heavy bodied female is wingless and spends much of her time immobile, inverted amongst the foliage. However, the slender males are equipped with large mottled wings to fly in search of females. (Length 160mm)



Stalk-eyed Fly - *Achias australis*

True flies have only one set of wings, the hind wings having evolved into small club-like appendages to assist flight agility. This tropical species can be seen in the rainforest sitting on foliage or tree trunks. The male's eyes are located on stalks or lateral extensions, and are used in ritualised courtship battles with other males. (Length 10-13mm)



Ulysses Butterfly - *Papilio ulysses*

Butterflies and moths reach their greatest species diversity in the tropics. The Ulysses butterfly's metallic blue wings are a brilliant sight in the rainforest, where they are on the wing most months. When resting or feeding its brown underside and elongated hind wings transform this butterfly into a brown weather-beaten leaf. Males are particularly attracted to blue. (Wingspan 105mm)



White-kneed King Cricket - *Penalva flavocalceata*

Most katydids and crickets are herbivorous, but King Crickets are partly carnivorous and partly scavengers. They roam the forest floor at night feeding on scraps of decaying matter and killing small creatures with their powerful jaws. They bite ferociously when handled. During the day they retreat to smooth-walled burrows in the soil, pulling leaf litter over the entrance to conceal it. (Length 80mm)

