Most often observed on manuka or kanuka, the totally herbivorous stick insect feeds on a variety of other plants, including rimu, cabbage tree as well as the garden rose. I have also observed a few individuals feeding on the tips of pohutukawa branches. The mobile and somewhat alien-like head is equipped with two sets of jaws for munching through vegetation. In addition to being found in lowland forest and scrub areas, many backyards and suburban parks are home to the elusive stick insect.

So how does an insect which can easily grow to 15 centimetres in length remain virtually invisible? Apart from its obvious resemblance to a twig, stick insects have a few other camouflage tricks. At rest during the day, they align themselves with plant stems and branches, often with legs extended along the line of the body to further enhance their twiggy appearance. They can sometimes be observed 'shivering' on a branch that is moving in the breeze, presumably another camouflage tactic.

If disturbed, they will sometimes drop to the ground and feign death until the coast is clear. Any attempt to rouse them results in an even lengthier and more determined performance.

All of New Zealand's stick insects are green, brown or somewhere in between and many species have various tubercles and spines adorning their bodies. Unlike some of their overseas relatives, New Zealand species lack wings. Males are even more twig like than the larger females with extremely thin bodies and spidery legs.

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The best time to observe these insects is at night when the majority of feeding and activity takes place. Even at their most active, stick insects could never be described as hurried and seem content to stay in more or less the same area. They often hang from the underside of branches where they can be picked out by torchlight. Tiny hooks and special pads on the undersides of their feet allow them to maintain their grip.

Of course, if you go hunting for stick insects during the colder months you are likely to be disappointed. Virtually all adults die off as winter approaches. During this time stick insect populations are represented only by tiny seed-like eggs scattered in the leaf litter by the females before they die.

Another fascinating aspect of stick insect life is their reproductive abilities. Stick insects are able to reproduce parthenogenically — that is females lay unfertilised eggs which hatch into female clones of themselves. In some species males have never been found suggesting an all-female species. Interestingly, those species where males regularly occur are also able to reproduce parthenogenically.

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A brown stick insect, photographed at night. While it could be a brown form of the common stick insect, experts could not confirm this from the photograph because individuals vary in size and colour within species.

The common stick insect *Clitarchus hookeri* is often found as a mated pair, the much smaller male riding around on the back of the female for days at a time. The female simply drops her eggs onto the ground below, which of course means the young have immediate access to the appropriate food plant upon hatching.

The juvenile stick insects emerge from their eggs in spring in response to increasing temperatures. They are tiny replicas of the adults and, like most insect young, totally independent and focussed on eating. Over the ensuing months, they undergo a series of moults, shedding their old skin and emerging each time as a slightly larger version of themselves. If a leg is lost while the insect is still in this growth phase, it will be regrown in the next moult. After the insect has reached maturity, it can no longer regenerate lost limbs.

Stick insects have a range of predators, with the juveniles being most vulnerable. Potential predators include parasitic wasps, rats, mice, possums and insect eating birds. Eggs are also vulnerable to predation. The use of insecticides has also had an effect on stick insect populations, particularly the historic widespread use of DDT.

Across the Tasman, Australia has an extensive stick-insect fauna. There are around 150 native species including the giant phasmid which reaches 25 centimetres in length. A small percentage of these Australian stick insects are considered pest species due to their ability to defoliate entire trees. One such incident occurred in 1963 resulting in 650 square miles of eucalypt being stripped of leaves! Many Australian stick insect species have wings and use these not just for getting around but to deter predators by 'flashing' them with a startling display of colour.

What the slender stick insect lacks in bulk it certainly makes up for in length and as such qualifies as the longest insect in the world. The longest originates from Borneo and can exceed 32 centimetres in length.

The size and unusual appearance of stick insects makes them a popular pet overseas. The Indian stick insect is well established in the pet trade and in this capacity has reached many parts of the world. It is alternatively known as the 'laboratory stick insect' due to its extensive use in physiological experiments.

Internationally there are around 2500 species of stick insect, and undoubtedly more that have not yet been described. There is still much to learn about these fascinating creatures and their habits. Only recently a new species was discovered in West Auckland, perched on a cabbage tree right next to a well-used walking track! We may have lost hope of finding an elusive moa species deep in the forest but, with these insect masters of disguise, who knows what awaits discovery?

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