



Australian Spiny Stick Insect Care Manual



Spiny Stick Insect (*Extatosoma tiaratum*)

Background

This insect (kingdom Arthropoda) is part of the order Phasmatodea. There are three families in this order and in Australia there are a total of 150 species identified to date. Sexual Dimorphism is pronounced in this phasmid (*Extatosoma tiaratum*). The males are smaller and have more functional wings than the females. The Spiny Stick Insect is a phasmid native to Australia and New Guinea. Like most phasmids this species is very docile. This species will mimic a scorpion when threatened as a defence mechanism. The Spiny Stick Insect will curl their abdomen over to mimic a scorpion's tail and raising their front arms to mimic a scorpion's pincers. This defence display is a bluff, as this species is totally harmless.



Phasmid Enclosure Setup

In your Stick Insect Habitat Kit you will find the following materials

1. Stick Insect Terrarium
2. Cork Plant Holder
3. Peat Moss
4. Water Mist Bottle
5. Magnifying Glass
6. Care Manual

Spiny Stick Insect and Pisces Insect Food Plant sold separately.



Setup

1. Pour the full container of Peat Moss on to the bottom of the enclosure as shown. Peat Moss should be changed once per month for one stick insect or once per fortnight for two or more insects.



2. Mist the Peat Moss with tap water using the supplied Water Mist Bottle from your kit. Mist the Peat Moss until damp. Do not flood. Enclosure should be misted daily to ensure that the Peat Moss is always moist.



3. Insert your Pisces Insect Food Plant food (purchased separately) into the Cork Plant Holder.



4. Place the Cork Plant Holder in the bottom of the enclosure. Change the Pisces Insect Food Plant once per week and always ensure fresh leaves are available as a food source. Mist the Pisces Insect Food Plant until drops of water are present on some of the leaves.



5. Gently place your Stick Insect onto the plant inside the enclosure. Close the lid and doors and enjoy. Your new Stick Insect will take a few hours to settle and should start eating within 24 hours. Make sure you mist the plant daily as your Stick Insect will use the water droplets as a drinking source.



Spiny Insect Information and Care

Life span

Life expectancy will be approximately one year. This species will grow quickest at

22 - 26°C, however, they will tolerate temperatures between 10 - 20°C with the only impact being a slower growth rate.

From a nymph (a baby stick insect) males will moult five times, and females six times before they reach maturity. To moult successfully the Stick Insect needs to hang uninterrupted beneath a leaf or branch.

Food

This species of phasmids will feed on a variety of foliage. Ensure fresh leaves are always available, not letting them dry out too much as the Stick Insect will not eat these.

Pisces Insect Food Plant is the recommended food source. Do not place plant cuttings in a jar of water as your nymph may drown.

Spiny Stick Insects will eat a variety of gum leaves, Rose leaves, some Wattle leaves, Tree Lucerne Cadagi and Guava. Ensure your phasmid has a variety to choose from and ensure you use the leaves that they prefer. Beware that leaves from other locations, may be sprayed with insecticide (this will kill your Stick Insect). The safest food is Pisces Insect Food Plant. Use your Water Mist Bottle to spray the leaves around your insect once per day during summer and once every 2-3 days during winter, as your Stick Insect will drink these droplets.

Studying a female nyŪh



A purple female nyŪh enjoying a meal

Handling

The best way to handle Stick Insects is to gently coax them onto your hand. Stick Insects like to climb up so always have your hand slightly above them. Be aware that they have small hooks on their legs to aid them with climbing and be careful not to yank or pull them as you may hurt them or they may lose a leg. These phasmids have the ability to regenerate their limbs sometimes, this process will require them to undergo two moults before the limb is potentially regrown.



Handling a fully grown female

Enclosure

Be careful not to place the enclosure in a location that receives too much sun as this will overheat and kill your insect. Ideally, place your enclosure in a location that will receive 1-2 hours of afternoon sunlight. Your enclosure and Stick Insect do not require a heater.

Substrate

Ensure the enclosure always has a thin lining of Peat Moss on the bottom. This substrate will help keep the humidity high (aiding in successful moulting). This substrate will need to be changed once a month for one insect, but once a fortnight for two or more insects to prevent any mould growth.

Water

A Water Mist Bottle is required to mist the leaves surrounding the insect once per day. This will provide a water source for the insect to drink.



An adult male shows off his wings

Insects—Anatomy overview

Insects all share the same general body plan and this will be discussed below.

Body

An insect's body plan is made up of three sections, the head, thorax and abdomen. These invertebrates possess an exoskeleton which provides support and protection to the insect. This rigid exoskeleton must be shed for growth to occur. The process of shedding the exoskeleton is called *ecdysis*. Once shed the new exoskeleton is soft and allows the insect to expand in size before it hardens.

Head

Amongst the group Insecta there are three types of head orientations:

- Prognathous: orientated horizontally. Mouth parts are pointed forward;
- Hypognathous: orientated vertically. Mouth parts are pointed down;
- Opisthognathous: orientated obliquely. Mouth-parts are pointed backward;

All insects possess a pair of compound eyes and antenna. Many insects also have three light sensitive eyes called *ocelli* which are arranged in a triangle on the top of the head. All phasmids possess compound eyes, but *ocelli* are only found in some winged males.

There are five basic components that make up the insect mouth:

1. Labrum;
2. Hypopharynx;
3. Mandibles;
4. Maxilla;
5. Labium;

Legs

Insect legs have diversified to fulfill many needs and niches within an environment, such as digging, climbing, hunting and swimming. Typically, insect legs are made up of five segments;

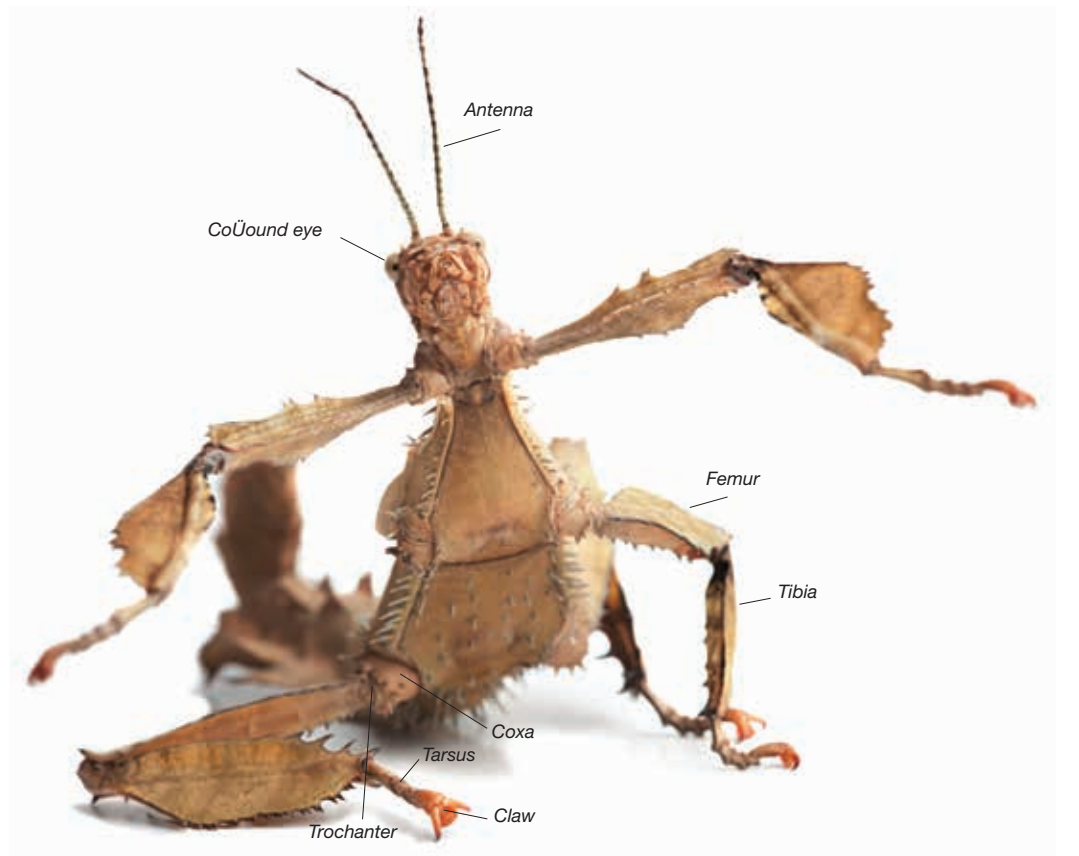
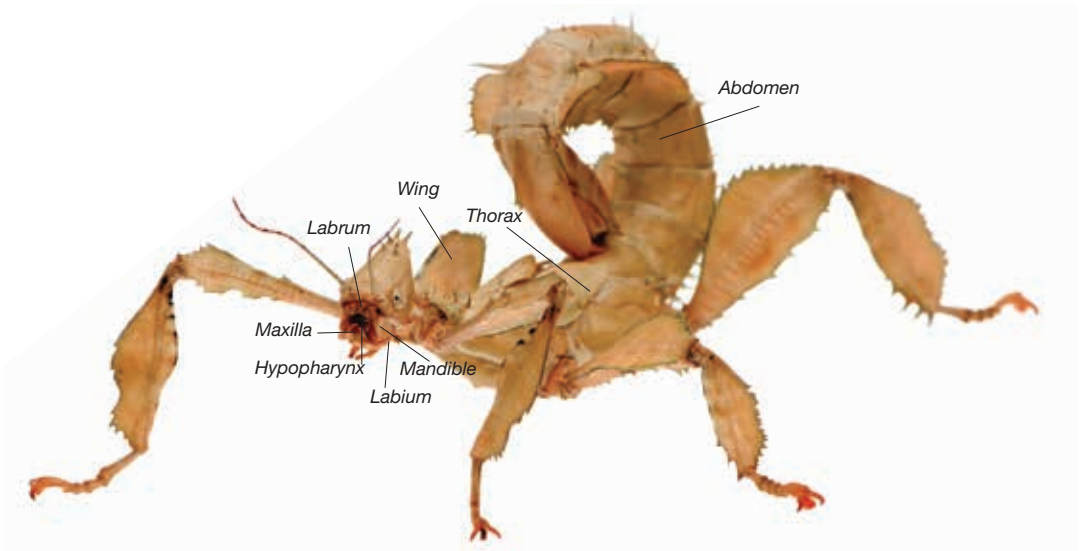
1. Coxa;
2. Trochanter/Femur;
3. Tibia;
4. Tarsus;
5. Claw/Pretarsus;

Wings

Wings develop only in adult insects (excluding mayflies). Insects have two pairs of wings, with (in some cases) the first pair being highly sclerotized and non-functional such as the elytra in beetles. Some insects are partly sclerotized such as the fore-wings in crickets, phasmids, cockroaches and earwigs. Finally, flies possess a hind wings modification where their hind wings are reduced in size and act as flight stabilisers (halteres).

Respiration

Like most organisms, insects require oxygen and must eliminate carbon. Insect respiration occurs through small openings on the insect's sides (spiracles) which lead to tubes that branch throughout the body with the finest branches connecting to internal organs and tissue.





Overview of Insects

Insects are a class of invertebrates within the Phylum Arthropoda. These invertebrates possess a chitinous exoskeleton, and are made up of three-part body (head, thorax and abdomen). The three pairs of jointed legs and two pairs of wings arise out of the middle divisions, the thorax. The head contains the following appendages; feeding mouth parts, compound eyes and one pair of antennae.

To date, slightly over a million species of insects have been described, however, it is believed that this is not a true representation of the species richness. Current estimates of total species richness range from 3 million to 80 million. This high species richness has been attributed to their small size which provides many more niche opportunities as opposed to those available for larger organisms.

Insect development falls into two broad categories; Holometabolism and Hemimetabolism. Holometabolism is a life history where insects go through a complete metamorphosis. Insects within this group have four distinct life stages that they go through; egg, larvae, pupae and adult. Hemimetabolism is also known as an incomplete metamorphosis. This life history has three developmental stages; egg, nymph, and adult. This life history differs from holometabolism in the fact that there is no pupal stage, but rather a gradual change from nymph to adult. Nymphs from this group somewhat resemble the adult stage but lack wings and functional reproductive organs.



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