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CENTRAL AUSTRALIA
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Grasshopper Field Guide for Alice Springs

They make the land come alive with every step, escorting you down the driveway in waves and clouds. They eat your vegies, but they feed the birds and lizards. Have patience! Remember the desert operates in 'Boom and Bust' cycles in response to rain. If it has rained, plants and animals are 'booming'. If there is no more rain over the next few months and things dry out, the 'bust' will begin and grasshopper populations will subside. As these grasshoppers feed on your citrus, have a close look at them. You may have already noticed the incredible variation. There are crickets and katydids, mantids and stick insects amongst them. Here are a few orthopterans (grasshoppers, crickets and katydids belong to the Orthoptera Order) for you to try and identify.

Grasshoppers

The Leopard Grasshopper

Stropis maculosa

Family: ACRIDIDAE

Striking with its dark spots, the Leopard Grasshopper is commonly seen in a variety of habitats in Alice Springs. They are herbivorous, however the native diet is contrary to the name - they don't eat grass as a first choice. They prefer to feed on *Solanum sp*. but will also readily eat your prized herbs, Caltrop, *Boerhavia coccinea*, and Citrus leaves before they switch to the grasses that are left over. Males of this species are small and generally quite colourful. The females are considerably larger and lack the bright yellow colouration. Juveniles of this species are surprisingly well camouflaged and are green in colour.

The Toadhopper

Buforania crassa

Family: ACRIDIDAE

Sub-family: CATANTOPINAE

The Toadhopper is a plump Northern Territorian spur-throated grasshopper. Some adult females attain a total length of 10 cm with a thorax of around 3.5 cm wide. It is generally found on shellite or rocky substrate where it camouflages well against the red rock. The diet consists of numerous plants including *Maireana sp*., *Sclerolaena sp., Enchylaena tomatosa* and *Stemodia viscosa*.

Spur-throated Grasshoppers & Locusts

Family: ACRIDIDAE

Sub-family: CATANTOPINAE

There are many species of 'Spur-throated Grasshoppers'. The grasshopper (pictured) is very common. Locusts are very similar. The juveniles are often brightly coloured with yellow and green being very common. Even though there are many around, they rarely become a pest due to the fact that they are single generation breeders, meaning they only breed once a year. The first frost will reduce their numbers significantly.

Slant-faced Grasshoppers

Family: ACRIDIDAE

Sub-family: ACRIDINAE

These grasshoppers are common and contain many species. They can often be distinguished by the angle of their face and antennae (hence the name). The grasshopper pictured is the Gaudy Acacia Grasshopper (*Macrolobalia ocellata*). This species is often found on Mulga (*Acacia aneura*) and Witchetty bush (*Acacia kempeana*). Males are small and females are large like most other grasshopper species.

Gumleaf Grasshopper

Goniaea spp.

Family: ACRIDIDAE

Unlike some of the vividly patterned and coloured grasshoppers, this species of grasshopper relies on its superb camouflage. In Alice Springs we have at least two different species. Both adults and juveniles feed on dry and fresh gum leaves (*Eucalyptus sp.*) and Bloodwood (*Corymbia opaca*). The juveniles can't fly but the adults can fly considerable distances.

Urnisa

Urnisa guttulosa

Family: ACRIDIDAE

This grasshopper is one of the most common over a longer time period and, like most grasshoppers, doesn't feed on grass by preference but on herbaceous (broad leafed) plants, including shrubs, until only the grasses are left for food.

Blistered Pyrgomorph / Blistered Grasshopper

Monistria pustulifera

Family: PYRGOMORPHIDAE

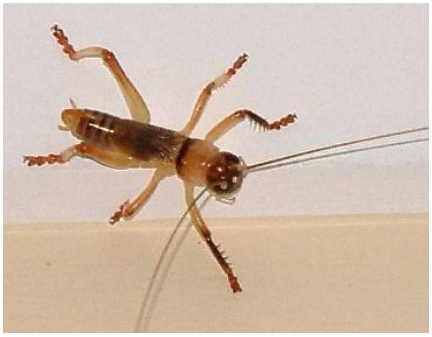
This colourful grasshopper is often found feeding on *Eremophila sp*. and some other strongly scented plants. Occasionally they can defoliate plants but most of the plants will regrow new leaves within a few months. Once the female has mated she will deposit her eggs into sandy substrate covered with a foam plug to prevent the eggs from drying out. Pictured on the left is a pair; with the smaller male mounted on the larger female. The strong colours are a clear indicator to predators that they do not taste good and to leave them alone.

Grasshopper Nymphs

The grasshoppers pictured are in the 'nymph' phase, or 'instar', of their lives. They have not yet fully developed, and do not have wings. These nymphs may look completely different to the adults. For example, they can change colour, or as is the case for some insects (such as katydids) will have a nymph phase that mimics an ant or other insect and will develop wings.

Crickets

Raspy Cricket



Hadrogryllacris sp.

Family: GRYLLACRIDIDAE

Raspy crickets are a nocturnal predatory cricket, and therefore have sharp mouth parts. In Alice Springs there are a few different species. Some are not winged whilst others have very well developed wings. Females of all species have a distinct ovipositor, which is a sword-like egg laying organ at the end of their abdomen.

Mole Cricket

G. coarctata* and *G. monanka

Family: GRYLLOTALPIDAE

Mole crickets spend most of their lives underground in extensive tunnel systems and are nocturnal. They have shovel-like forearms for burrowing and swimming. They are omnivorous, feeding on worms, larvae, grass and roots.

Spider Cricket

Endacusta sp. (5 species in the NT)

Family: GRYLLIDAE

Often confused with real cave crickets, this species is associated with caves and hollow spaces. Mainly active at night, these omnivores can jump a considerable distance with their giant back legs. They can be found on rock faces, under the bark of trees or in caves.

Katydids

Katydid

Family: TETTIGONIIDAE

Katydids are more closely related to crickets than grasshoppers and can be distinguished from grasshoppers by their very long antennae which exceed the body length. Grasshopper antennae tend to be short and thick. There are many different species in Alice Springs, some of which are predatory and some that eat leaves, flowers, bark, and seeds. They are mostly active at night – you will hear them calling amongst the crickets. The sound is made by rubbing the hind angles of their front wings - a process that is called stridulation. Nymphs often look very different to adults, often mimicking other insects to avoid predators. Adults are frequently green, camouflaging in foliage. Common species in Alice Springs are the Bush Katydids (*Elephantodeta spp*., herbivorous) and *Terpandrus spp*. (carnivorous).

Superb Katydid

You may be lucky enough to see the Superb Katydid, *Alectoria superba.* This spectacular species is relatively uncommon and there are both yellow and green colour morphs. The function of the disc-shaped crest at the back of the head is unknown, though perhaps for protection. The juveniles and adults prefer to feed on flowering trees such as *Acacia spp*. and *Eucalypt spp.* Eggs are laid on the bark of trees/shrubs, camouflaged with chewed bark to ensure that they are not easily seen, and it may take a few years for eggs to hatch (depending on climatic conditions).

Some useful web sites for looking up grasshoppers:
http://www.brisbaneinsects.com/brisbane_grasshoppers/index.html
http://www.pbase.com/larena/grasshoppers_crickets
http://lifeunseen.com/index12.php

These classifications are preliminary, and if anyone has any further information/corrections please let us know!

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