



Junior Ranger

Review

Issue 3 2005



CHECK
it out

on the
BRINK



Mala

creature
FEATURE



Terrific Termites



Free-loading flora

Creature Feature

Terrific Termites

There are over 350 species of termites in Australia and about 100 of these are found in the Northern Territory. The role they play in the environment is huge for such a tiny creature. For little bugs they sure have big boots to fill!



Tree species
*Coptotermes
acacinoformis*.

Found almost everywhere!

Termites are amazing little insects that are found all over the Territory - from the deserts to the tropical woodlands. They play a very important role at the bottom of the food chain, by eating and breaking down dead dry plant matter that other animals can't. To do so termites have special micro-organisms in their stomach which enable them to survive on this non-nutritious plant matter. Termites are then eaten by other animals passing that available energy up through the food chain.

In the Top End termite mounds are easy to see. Well-known ones include the 'cathedral' and 'magnetic' mounds, which are very popular with tourists. They also build nests high up in and at the base of trees. A particularly voracious (big and hungry) species *Mastotermes darwiniensis* is very fond of houses - so watch out for them!

Termites of the deserts generally live underground (subterranean), creating huge colonies that no-one can see.

Soil conditioners

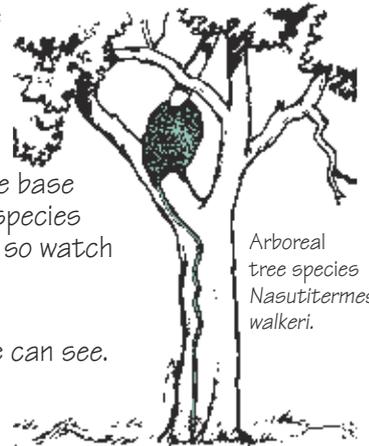
Termites also have another important role - improving the state of our soils. They behave like earthworms, only with legs! They move nutrients and soil around through the ground and make holes in the soil allowing water and air to move through it. Their poo also acts as a natural fertiliser - all of which makes the soil much healthier.

Amazing architects

Termite mounds are designed to create their own weather inside. Warmth and moisture are controlled by the tough outer layer and a network of passage-ways inside. These provide for year round protection from the sun, wind, rain and bushfires.

Amitermes meridionalis, is a Top End termite which survives by constructing flat sided mounds that face the sun. These are called 'magnetic' termite mounds, as they all point in a north-south direction. The flat sides of the mound act as solar panels keeping the inside at a constant 32°C, no matter what the outside temperature is.

Large Cathedral Termite mound *Nasutitermes triodiae*. Some termite mounds are gigantic, rising up over 6m.



Arboreal tree species
Nasutitermes walkeri.

Magnetic Termite mound *Amitermes meridionalis*. You may see them if you visit Litchfield National Park.

G'day From Ranger Bill

Welcome to the third issue of the Junior Ranger Review for 2005. It is terrific to see so many young Territorians involved in learning about, and the protection of, our natural environment through the Junior Ranger Program. But if you are not within the Junior Ranger age of 9 - 14 years there are a number of Parks & Wildlife Friends Groups and a Volunteers Program that you and your family can become involved with.

The Friends of George Brown Darwin Botanic Gardens and Territory Wildlife Park meet regularly with presentations, workshops, field trips and working bees. The Alice Springs Desert Park also has a number of volunteer roles from administration to fundraising, to collecting seeds or tending to animals. Further opportunities for involvement exist through the Volunteers Program, with projects arising in different Parks & Wildlife fields.

If you're interested, contact 8999 4555 for further information.

Ranger Bill

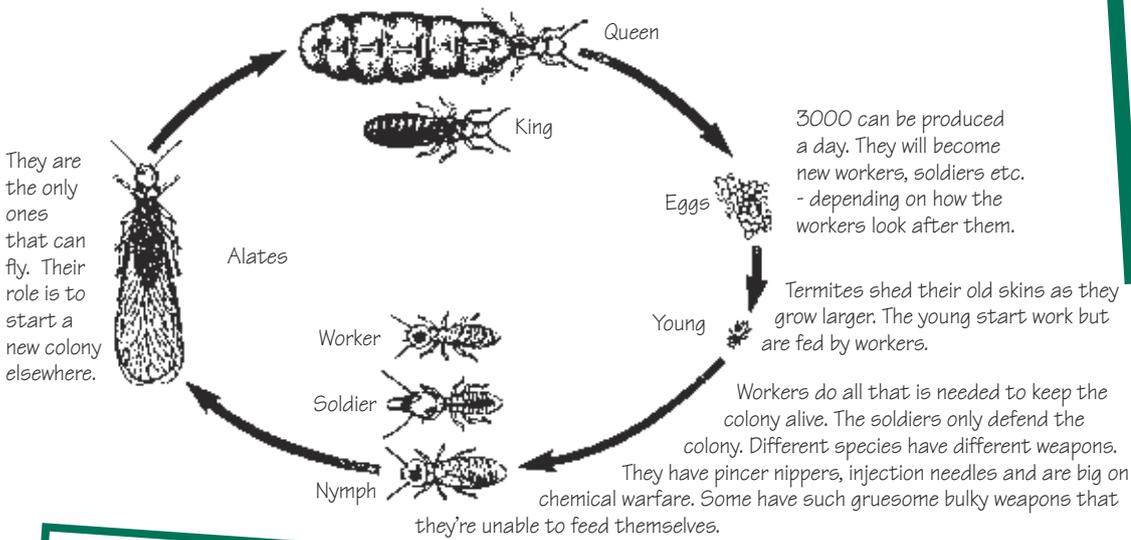
Food for all!

Large termite colonies deposit their food nutrients in one place (within the mound) which is like an energy snack bar. When the colony dies the mound slowly breaks down releasing the nutrients stored in the mound soil, plus the food they collected and their own waste, fertilizing the surrounding area. The insides of termite mounds can be so nutritious (full of energy and good for you) that wildlife and even Aboriginal people eat it.

Some termite species have colonies that swell into their millions. Multiply this by all the termite mounds that dot the savanna and desert environments and the numbers are humungous. This all adds up to a huge amount of nutritious food for a wide variety of wildlife, particularly insectivorous feeders. After good rain, termite feeders have a banquet, particularly when flying termites (alates) all leave their mounds at once.

Who's who of the Termite colony?

Their sole role is to produce young. There may be more than one pair in large colonies of some termite species.



Termite truths

- Termites are primitive insects. Some scientists view them as the first insects to live in colonies, well before ants and bees.
- Termites are often called 'white ants'. They are insects and look a little like ants but otherwise they are very different.
- *Mastotermes darwinensis* is famous for being the largest termite and the fastest wood eater in the world. It can also eat paint, plastic, rubber tyres, ivory and ceramics.

Head of a *Mastotermes darwinensis* soldier showing its fearsome pincer nippers.



Squatters or Feeders

Some species of Northern Territory wildlife depend on termites and their homes in two different ways, for shelter (**squatters**) (1) or food (**feeders**) (2). Wildlife that shelter in termite mounds usually dig dens and hollows, as these are 'cool' places to live. Others simply feast on the termite inhabitants. Match them up with either 1 or 2. Be careful as some of them do both. Simply circle whichever number you think is correct.

Spencer's frog (1 2) Mulgara (1 2) Goanna (1 2) Fawn Antechinus (1 2) Green Tree Frog (1 2)

Blue tongued Lizard (1 2) Ant (1 2) Rainbow Bee-eater (1 2) Northern Freetail Bat (1 2)

Marbled Gecko (1 2) Echidna (1 2) Blind snake (1 2) Hooded Parrot (1 2) Bilby (1 2)

1 **2**

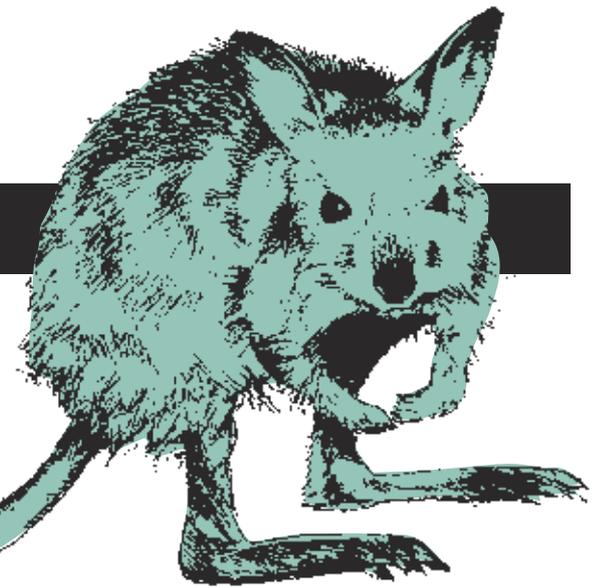
On the Brink

Saving the Mala

The Mala or Rufous Hare-wallaby, *Lagorchestes hirsutus*, is a rabbit-sized wallaby once common throughout the spinifex plains and sand dunes of central and Western Australia. Today it is on the edge of extinction.

Five species of hare-wallaby were present at the time of European settlement, two of which are now extinct, with the Mala classified as 'extinct in the wild' in the Northern Territory. Wild populations of Mala are now only found on Bernier and Dorre islands off Shark Bay in Western Australia.

Mala are referred to as hare-wallabies because of their hare-like speed. During the day they rest in a short burrow under a clump of spinifex, and being nocturnal they feed at night on the seeds and leaves of some grasses.



Did you know?

The Mala's scientific name, *hirsutus*, means hairy and refers to its long hair giving it a shaggy appearance.

So what happened to the Mala?

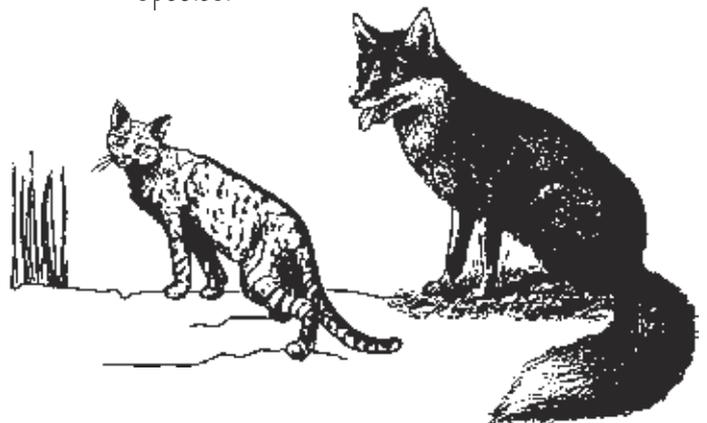
Mala were still common in the Tanami Desert until the 1930s, but their numbers crashed dramatically in the years that followed.

The key to understanding the Mala's disappearance is the movement of Aboriginal people off their traditional country to settlements, missions and cattle stations. This put an end to traditional burning, which was common throughout Australia before European settlement. Setting fire to small patches of vegetation in winter as part of their hunting practices, removed a lot of the flammable spinifex and helped prevent big destructive fires in summer.

This 'patch burning' also helped animals like the Mala. It produced a habitat with areas of old vegetation where the animals could shelter, and areas of new growth where the animals could feed. When Aboriginal people stopped burning the Tanami, the habitat changed affecting the Mala and other species.

As Mala numbers got lower, feral cats and foxes then became more of a problem. With only small isolated groups left, the feral predators gradually ate their way through them.

Although it may be too late for the Mala, attempts are now being made by environmental agencies like Parks & Wildlife and communities to reintroduce patch burning in parts of the Northern Territory.

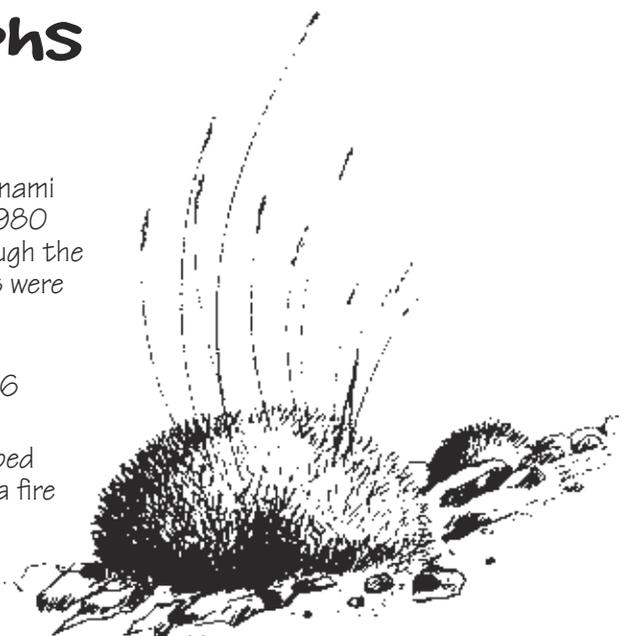
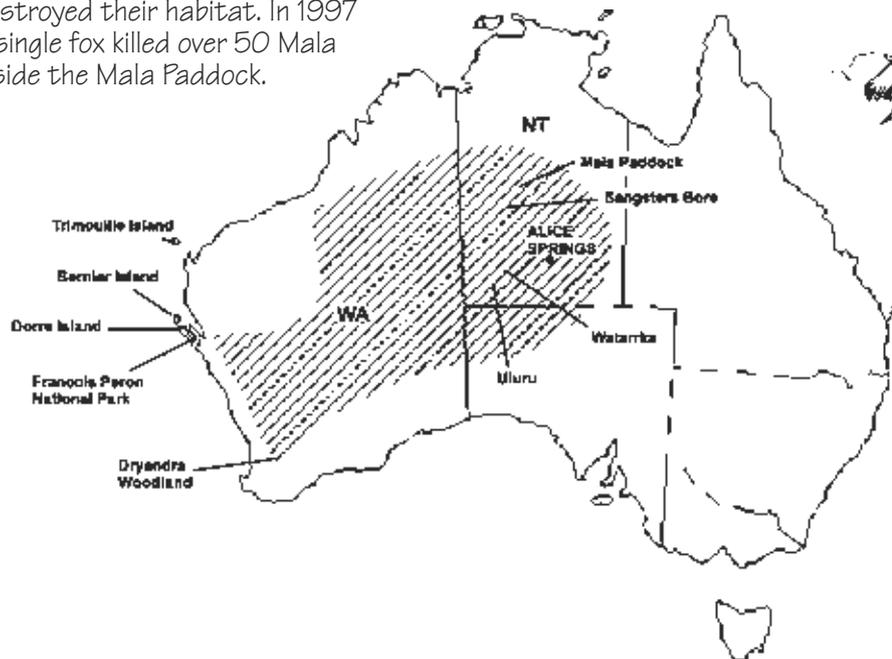


Captive breeding triumphs and tragedies

Since 1979 Parks and Wildlife scientists and Warlpiri people from the Tanami have been working together to save the Mala. Five wild Mala caught in 1980 were taken to Alice Springs to start a captive breeding program. Although the recovery program has faced set backs over the years, over 200 animals were successfully bred.

Reintroduction into the wild failed because feral cats killed the released population. As a result a one kilometre square paddock was built in 1986 around the release site using an electric fence.

In 1987 one of the last two wild populations at Sangsters Bore were wiped out by foxes. The final population only lasted another four years before a fire destroyed their habitat. In 1997 a single fox killed over 50 Mala inside the Mala Paddock.



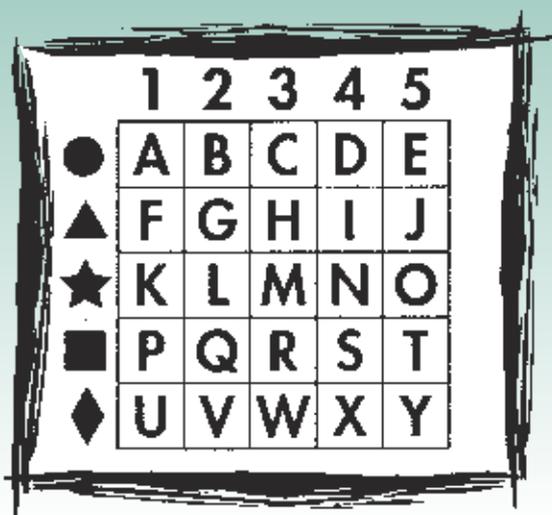
A Brighter future

In 1998 Mala were moved to WA and after a successful breeding program were released on Trimouille Island and into a fenced area at Dryandra Woodland. These successful relocations have increased numbers.

A new step in saving the Mala in the NT started in 2000 when an enclosure was built at Watarrika National Park. This enclosure contains animals from the Tanami Desert Mala Paddock. A new enclosure will also be opened at Uluru at the end of 2005. Both have reliable water sources and the most recent developments in predator proof fencing.

Puzzle

During the day Mala and other Hare-wallabies rest in very short burrows under clumps of spinifex. To find out what the Warlpiri people of Central Australia call these burrows use this grid to decode its name.



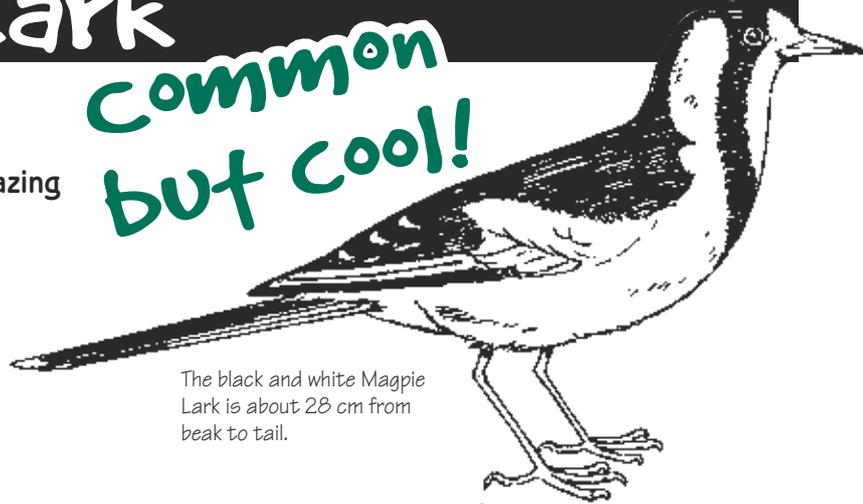
Urban Encounter



The Magpie Lark

The Magpie Lark, *Grallina cyanoleuca* is probably Australia's most common and widespread bird. Nevertheless, this little guy has a number of amazing features, so let's get to know them a bit better.

Common
but cool!



The black and white Magpie Lark is about 28 cm from beak to tail.

Did You Know?

Early European settlers named the Magpie Lark after two groups of Northern Hemisphere birds that they were familiar with: the Magpies and the Larks. However, they aren't actually related to either of them! Scientists now believe that they are most closely related to a group of birds from the east coast of Australia called the Monarchs.

As common as mud?

Magpie Larks are known by a number of different names. Maybe you know them as the Peewee or Mudlark or Little Magpie? Whatever you call them, they're pretty adaptable and they'll live just about anywhere. As long as there is open space for them to look for their insect food, and the occasional bit of water for them to construct their mud nests, they're happy. Dense forests and the driest of deserts are about the only places that you won't find them.

Humans have actually helped them become more common by clearing dense forests for farming. What's more, we've supplied water by drilling wells and bores for cattle and sheep in areas that used to have no water. Windmills even provide a good place for them to build a nest on!

Many animals don't like to live in cities or around people, but not the Magpie Lark! Parks, ovals, road verges and backyards make great habitats for them.

Backstreet brawlers

When a male and female Magpie Lark pair up, it's usually for life. They will then become territorial and attack and fight with any other animal in their patch that they see as a threat. This can include other Magpie Lark pairs, other birds (even eagles!), cats and the occasional unlucky human! The males get particularly cranky. You may see them attacking their own reflection on the side mirrors or windscreens of cars. It's pretty funny...until they start pooping all over your car!

Singing, calling and displaying are all part of protecting their patch. They will perch somewhere prominent and perform a duet. The male sings one part of the song and the female sings the other while they both spread their wings and fan out their tails. This lets other birds know that this is their turf, so back off unless you want a fight!!

The boys look like they have a 'Zoro' mask over their eyes.



The girls have a pretty white face and chin.



Although they look the same at first glance, it is easy to tell the boys from the girls. Look closely at their faces. The male is on top, the female on the bottom.



Plant Profile



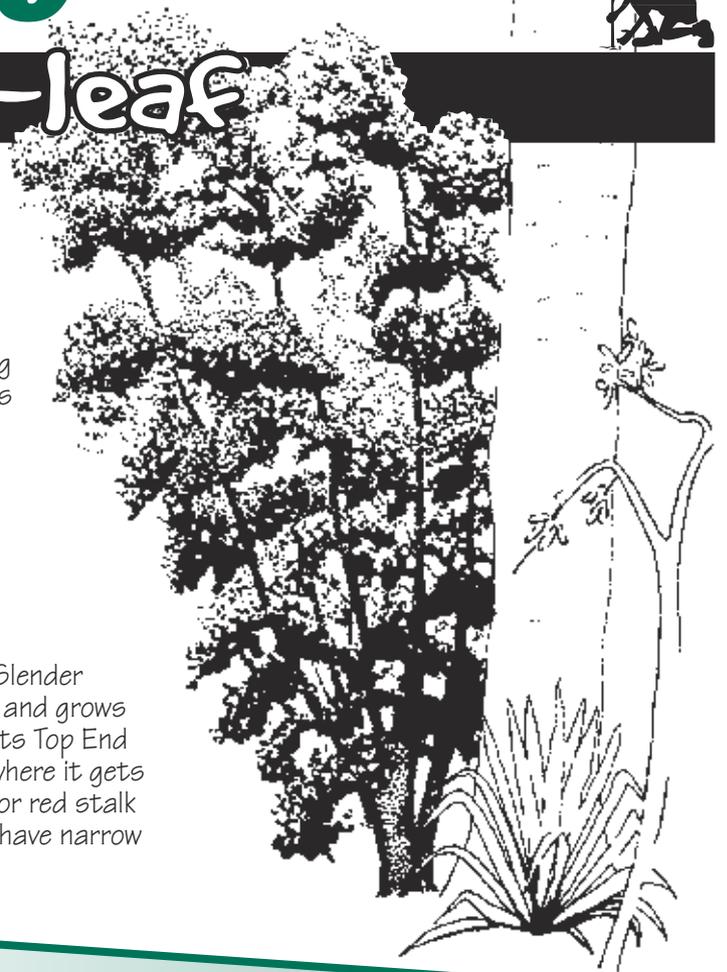
Bludging broad-leaf

The Broad-leaved Native Cherry of the Top End, *Exocarpus latifolius* begins its life as a freeloader, relying on the roots of others to help it grow.

This plant is semi-parasitic meaning that for its seedling to grow its roots must first tap into the roots of a neighbouring tree to steal food and water (nutrients). However, as it grows bigger and taller, it relies more on its own ability to trap sunlight with its broad evergreen leaves to provide its food (photosynthesis).

Centralian cousin

In the arid regions of NT, there lives a Centralian cousin, the Slender Cherry, *Exocarpus sparteus*. It also starts life as a parasite and grows on rocky hillsides amongst Spinifex or on sand dunes. Unlike its Top End cousin, it is only a small broom-like shrub 2-3m high. This is where it gets its other common name Broom Ballart. It has a swollen pink or red stalk that is also edible. Like most plants living in the desert they have narrow leaves to help it to save water.

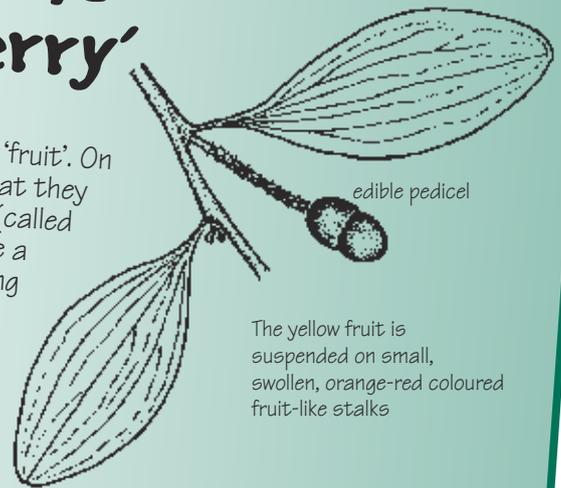


Science Snippet

Photosynthesis is the process that plants use to make their food. They collect energy from the sun with their leaves, then use it to change water and carbon dioxide (what we breathe out) into sugary food (carbohydrates). Luckily, for us this process also produces oxygen for us to breathe.

Why the name 'native cherry'

Native Cherries have odd-looking 'fruit'. On closer inspection, you can see that they consist of a swollen fleshy stalk (called a pedicel) which actually looks like a fruit on which the real seed bearing fruit (nut-like) grows. So why does nature provide these weird variations to normal fruits? Basically, it ensures that the plant's seed is spread (called dispersal). Many fruit eating birds cannot help eating the seed to get to the juicy pedicel. Once in the bird's stomach, digestive juices eat away the tough outer shell of the seed and it is almost ready to grow. The bird flies off and does a poo dropping the ready seed. The seedling then gets a good head start from the nutrients present in the bird's poo.



The yellow fruit is suspended on small, swollen, orange-red coloured fruit-like stalks

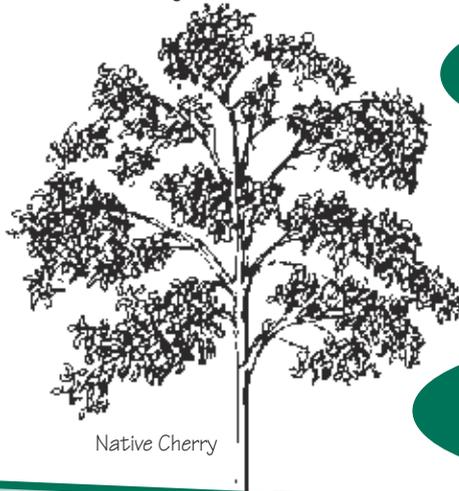
Did You Know?

The Latin name *Exocarpos* makes sense, as loosely translated it means 'nut or seed on the outside of a fleshy fruit'.

Tree id ...More features of me!

My bark is dark grey with little cracks in it.

You may find me in monsoon vine thicket or forest and beside water.

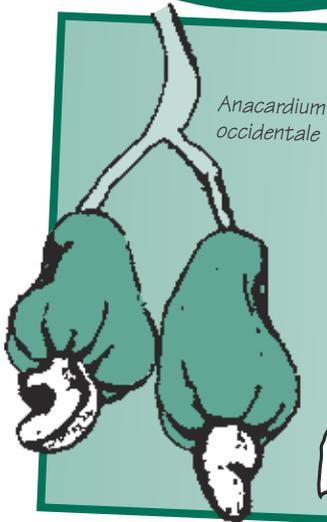


Native Cherry

I am a bushy shrub or small tree.

I live in all types of soil but just love sand.

I can grow up to 6m tall.



Anacardium occidentale

What am I?

The strangeness of the fruit of the Native Cherry is not unique to this plant or Australia. Other plants in the world also have this adaptation. Can you crack the code to reveal the name of another well known introduced plant (pictured) with a similar feature?

Clue:
Native Cherry is mzgrev xsviib and Exocarpus latifolius is vclxzikfh ozgrulorfh. Also think about how the fruit is back to front.

x z h s v d
□ □ □ □ □ □

m f g
□ □ □

g i v v
□ □ □ □

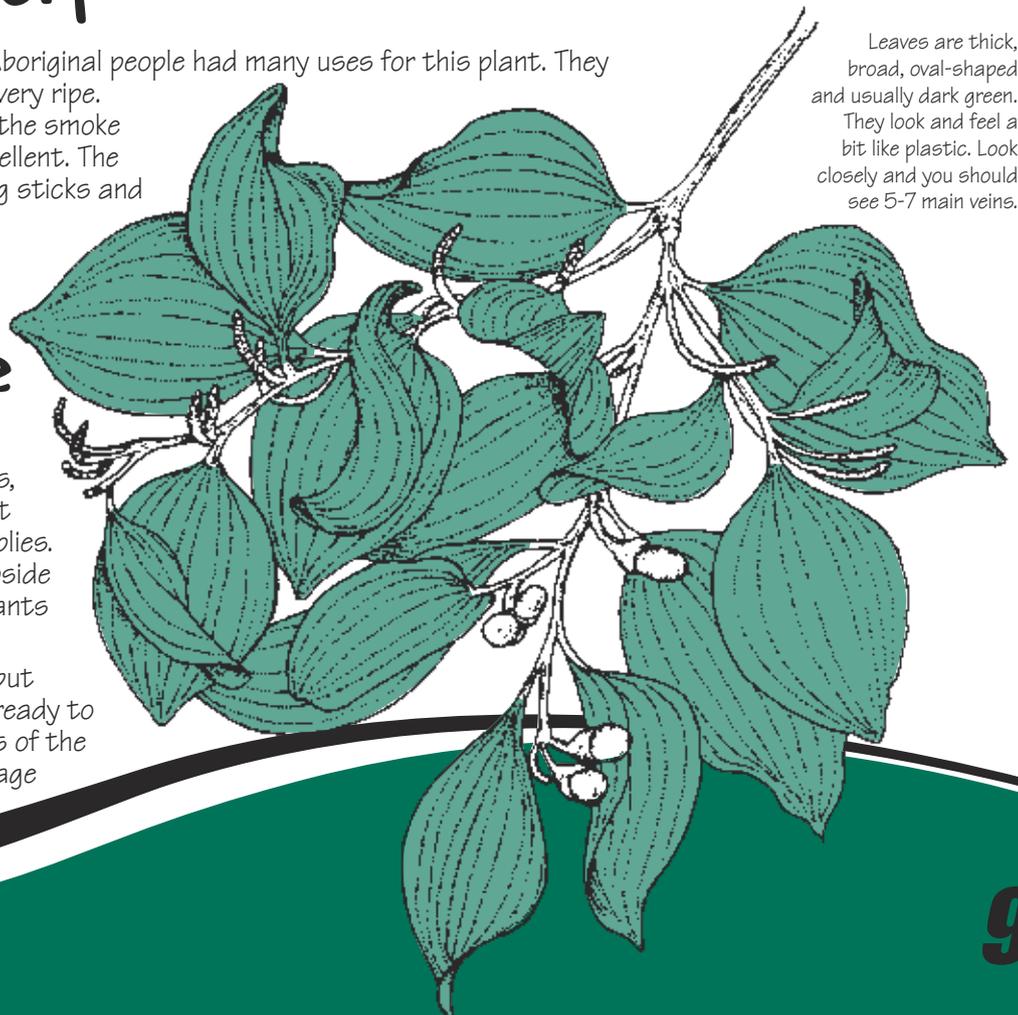
Bountiful fruit

Long before European settlement Aboriginal people had many uses for this plant. They eat the swollen fleshy pedicel when very ripe. The wood and leaves are burnt and the smoke produces an excellent mosquito repellent. The wood is used for making yam digging sticks and for woomeras (spear throwers).

Early settlers use

In southern Australia the Native Cherry excited early English settlers, who liked its taste enough to collect the fruits for added fresh food supplies. They saw it as an example of the upside down strangeness of Australia's plants and animals.

The fruit was eaten raw or cooked, but was only picked when deep red and ready to fall. The early farmers were cautious of the plant, as it was known that the foliage (leaves) was toxic to stock.



Leaves are thick, broad, oval-shaped and usually dark green. They look and feel a bit like plastic. Look closely and you should see 5-7 main veins.

Check it out!



Further free-loading flora!



Cymbidium canaliculatum has a variety of flower colours, from green-yellow to yellow-brown to red-brown.



This orchid is usually found on eucalypts in woodlands.

Did you know that there are many different NT plants that rely on others to grow? Read on to find out more!

Stuck on You - Epiphytes (Pronounced.. 'EPI - fights')

These are plants that grow on other plants but are not parasitic. That is they do not rely on the other plants for food or water, only for support. Can you think of any common epiphytes? If you guessed moss you are right! In the Top End we have some other beautiful native examples of epiphytes in the bush. They are orchids. Many of you may have some of these in your gardens but they are probably not native to the NT. They have been introduced from other parts of the world. Two of our amazing locals are the so-called Tree Orchids, *Cymbidium canaliculatum* and the most common and widespread, *Dendrobium affine*.



Dendrobium affine usually has white or sometimes pale-pink flowers.

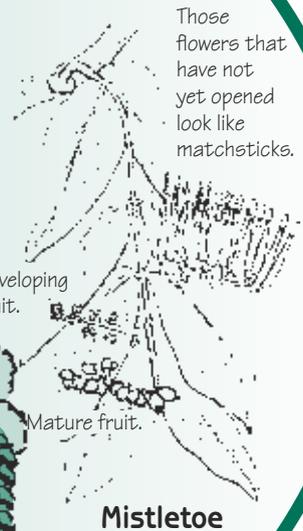
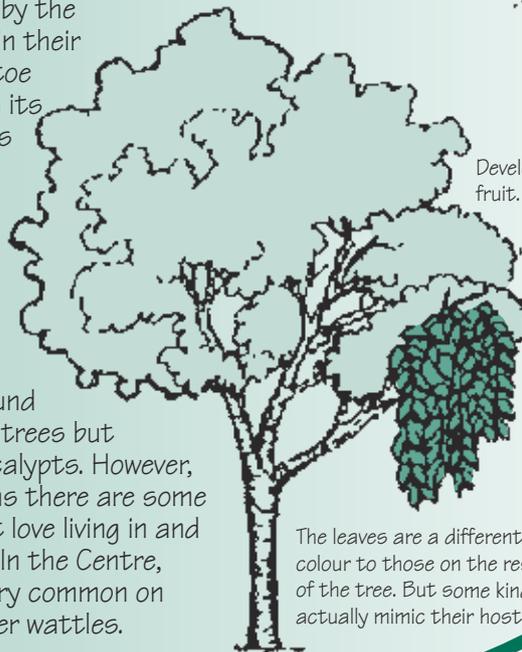
This orchid can be found in many habitats on many different host trees.



Sap Suckers!

In the NT there is a large widespread family of parasitic plants that are found from the Top End coast and woodland to creek beds in the Centre. Their scientific Family name is Loranthaceae, but they are commonly called Mistletoes. No, not the one that you saw your mum kissing Santa underneath at Christmas time! That one is from Europe.

Mistletoe grows on the branches of woody plants. When the seeds germinate a special root penetrates the bark of the host tree and forms a straw through which water and nutrients are sucked up by the mistletoe. But they make their own food in their leaves using sunlight. Sometimes, mistletoe can harm a tree and cause deformities in its branches, however it doesn't usually kill its host. If the host dies, the mistletoe dies.



Those flowers that have not yet opened look like matchsticks.

The leaves are a different colour to those on the rest of the tree. But some kinds actually mimic their host.

Did You Know?

Mistletoe berries are called 'snotty gobbles' because that is what they look like. Each berry contains a large sticky seed. They are tasty to eat.

Nature Quiz

Parasite Puzzle Page

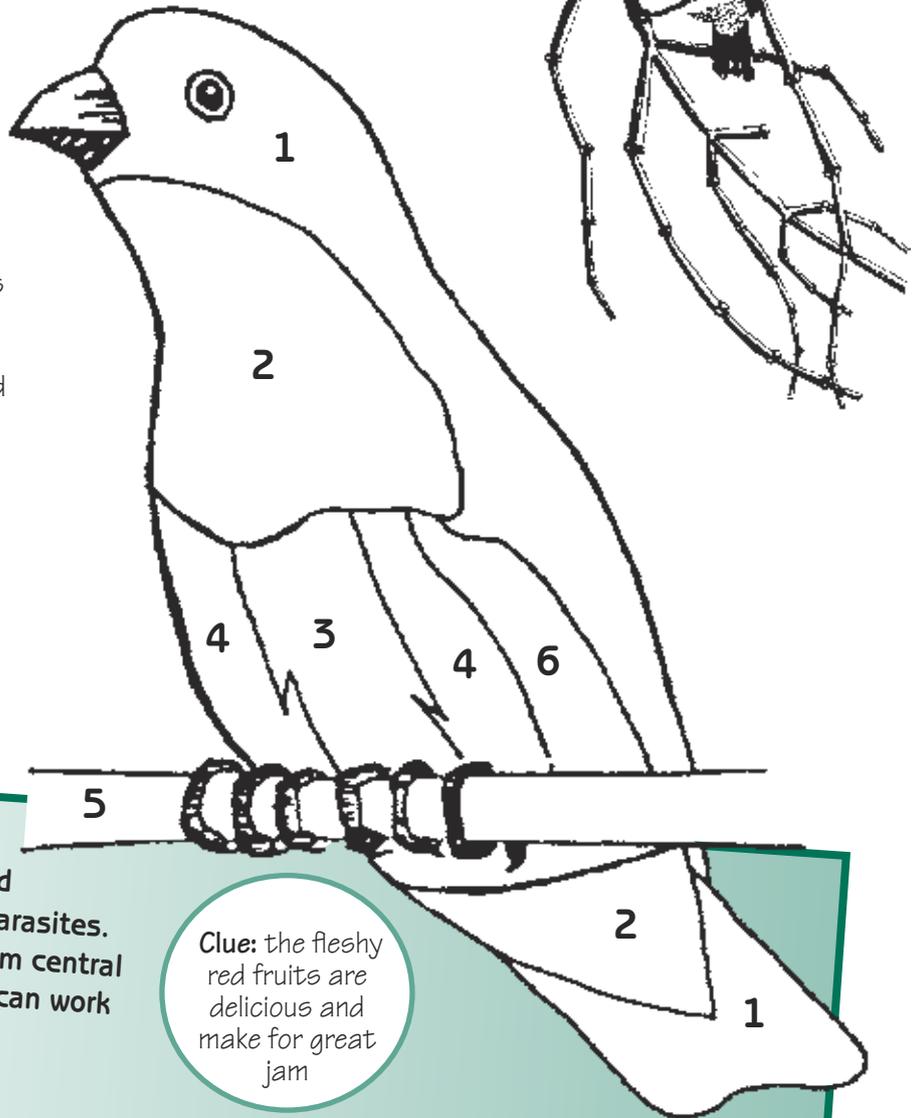
Sticky mistletoe seeds are spread from tree to tree by an amazing little bird.

The Mistletoebird *Dicaeum hirundinaceum* picks the tasty berries off a tree and swallows them. They quickly pass through the bird's gullet. The seeds are still sticky when they come out the other end and they will usually stick to the birds feathers.

The bird wipes its bottom on the branch of a tree or shrub. The seed sticks to the branch and grows into a new clump of parasitic mistletoe.

Use the numbers to colour this male Mistletoebird so that you can recognise him in the bush.

- 1 = blue / black
- 2 = red
- 3 = black
- 4 = white
- 5 = brown
- 6 = grey



Native Cherries belong to the Family Santalaceae, commonly called the Sandalwoods. They are all root parasites. There is another well known plant from central Australia from this group. See if you can work out its common name.

Only one letter is shared by all three words on each line.

Work out which letter and write it in the box.

Clue: the fleshy red fruits are delicious and make for great jam



Santalum acuminatum

- | | | | |
|-----------|------|-------|----------------------|
| 1. QANTAS | QLD | QUICK | <input type="text"/> |
| 2. UNDER | BURN | YOU | <input type="text"/> |
| 3. ANY | FACE | MATE | <input type="text"/> |
| 4. RANGER | NICE | ONLY | <input type="text"/> |
| 5. DROP | AID | DOOR | <input type="text"/> |
| 6. OUT | NOD | POO | <input type="text"/> |
| 7. FAN | AND | BEAN | <input type="text"/> |
| 8. EGG | GROW | OGRE | <input type="text"/> |

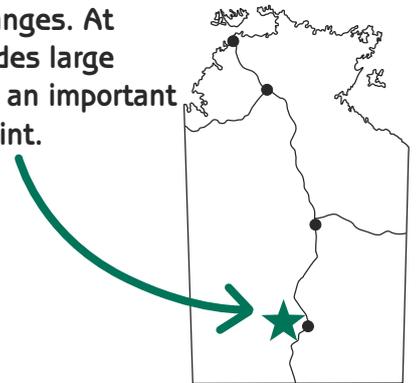
Discover a Territory Park

Simpsons Gap

Simpsons Gap is one of the most well-known gaps in the West MacDonnell Ranges. At dawn and dusk it is a great place to see Black-footed Rock-wallabies. It includes large areas of Mulga and is a place where rare and relict plants survive. The area is an important site for Arrernte Aboriginal people, as several dreaming trails cross at this point.

When is it best to visit?

The Park is open from 5.00 am to 8.00 pm daily. You can visit all year round with the cooler months (April to September) being the nicest.



Where is it?

Located in the West MacDonnell National Park, the turn off to Simpsons Gap is 18 km west of Alice Springs along Larapinta Drive. The Gap itself is a further 6 km drive.

What can you do there?

The Visitor Information Centre is worth a look. It is a good introduction to the West MacDonnell National Park and gives information about the area's natural and cultural history.

There are a number of walks to do. Ranging from the 15 min Ghost Gum walk highlighting native plants, to the Larapinta Trail - an exciting long distance walking track through the West MacDonnell Ranges.

Simpsons Gap is a great place for a picnic. There are free gas barbecues in the shady picnic areas near the Gap and the Visitor Information Centre.

Camping is not permitted at Simpsons Gap unless you are walking the Larapinta Trail.

Pedal to the Park!

The sealed Simpsons Gap Bicycle Path winds for 17 km one way through bushland between Flynn's Grave and Simpsons Gap. It's great fun for visitors of all ages with mostly easy riding. Take plenty of water and ride in the coolest part of the day, and enjoy the great scenery.

Puzzle Answers

Creature Feature:

Spencer's frog - 1 and 2,
Blue Tongue lizard - 1,
Marbled Gecko - 1 and 2,
Mulgara - 1 and 2,
Echidna - 2,
Goanna - 1 and 2,
Ant - 1 and 2,
Blind snake - 2,
Fawn Antichinus - 2,
Northern Freetail Bat - 2,
Bilby - 1,
Green Tree Frog - 1 and 2,
Rainbow Bee-eater - 1 and 2,
Hooded Parrot - 1.

On the Brink:

Wangku

Urban Encounter:

Koels secretly lay their eggs in magpie lark nests

Plant Profile:

Cashew nut tree

Puzzle Page:

Quandong

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