

Strange Plants

A Children's University Trail for
Age 10 – 14
in Adelaide Botanic Garden



Government of
South Australia



Botanic Gardens of
SOUTH AUSTRALIA

Education @ Adelaide Botanic Garden
is made possible through a partnership
between the Department for Education
and Child Development and the
Botanic Gardens of South Australia.

Welcome to the Strange Plants Trail ...

The garden is a special place. Please leave it as you find it.

Some special notes:

- To find the plants match the numbers on the map. (look for plant labels too).
- You can do them in any order.
- Allow about 1 hour to complete the trail.
- This excursion is outdoors and you may require sun protection.
- Plants are fragile, touch them gently.
- Flowers, leaves, bark, seeds etc. growing on plants or lying on the ground are there for all to enjoy. When finished with plant material found on the ground always return it to the garden.
- Keeping to paths and not walking on beds or borders avoids damage to plants.

When you have finished the walk go to the Schomburgk Pavillion (white 2 on the map) at the visitor information desk just inside the Diggers Garden shop you can have your passport stamped.

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Illustrations: Gilbert Dashorst Photos Indiana Yeo
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This trail is proudly supported by:





- 1 Butcher's Broom
- 2 Mimosa
- 3 Parapara
- 4 Bottle Tree
- 5 Paperbark
- 6 Ferns
- 7 Cork Tree
- 8 Moreton Bay Fig
- 9 Broniloads
- 10 Amazon Waterlily
- 11 Cluster Fig
- 12 Sausage Tree

- 1 Friends Gate
- 2 Schomburgk Pavilion
- 3 Goodman Building
- 4 Main Gate
- 5 Bus Loading
- 6 Bus Parking
- 7 Wetland Amphitheatre
- 8 East Lodge

Strange Plants

Activities

1. Butcher's Broom

Don't be fooled by what looks like large, shiny, green leaves on this plant.

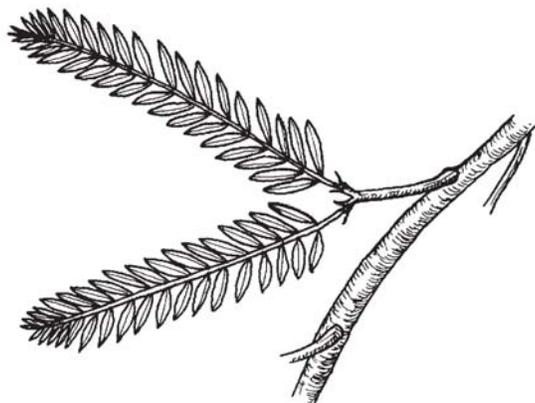
They are really flattened stems.

Find some tiny flowers on the plant.

What colour are they?



2. Mimosa - A Touchy Plant



This plant is very touchy. Carefully touch an open leaf.

What happens?

How might this help the plant?

3. Parapara - Bird Catching Tree

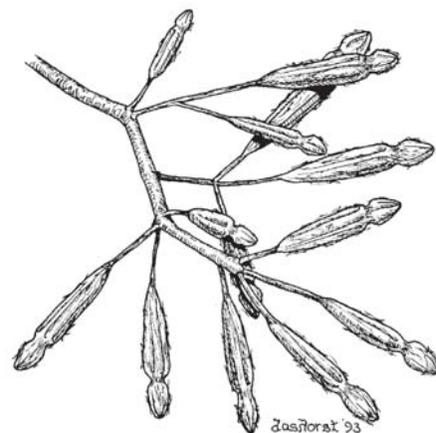
Find and feel the sticky fruits. They have seeds inside. Green fruits are unripe, black fruits are ripe.

These fruits are ripe / unripe.

Ripe / unripe fruits would be the stickiest.

These fruits trap birds in the rainforest.

How could the bird's body help the seed to grow?

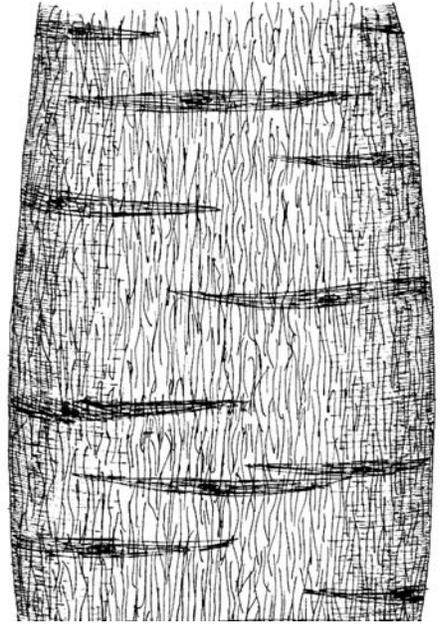


4. Bottle Tree

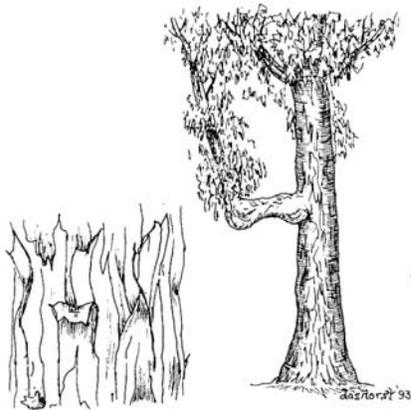
Tap the trunk with the palm of your hand.
Give two reasons we call this plant a Bottle Tree

_____ and

Look up at the scars running across the trunk.
How could they have been made?



5. Paper Bark Tree



Feel the bark.

Write three words that describe the feel.

Think of a use for paper bark.

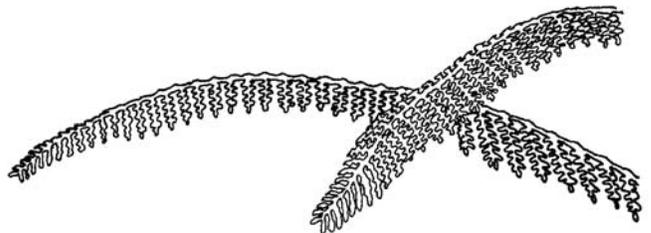
6. Ferns

Ferns do not have seeds. They reproduce by tiny spores held in cases on the undersides of their leaves or fronds.

Find some and sketch the pattern of spore cases for two different ferns.



Could this pattern be used to tell ferns apart?



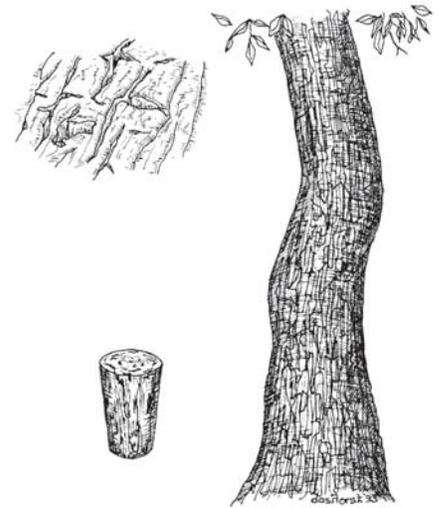
7. Cork Oak

Cork comes from this tree. Press the bark with your fingernail.

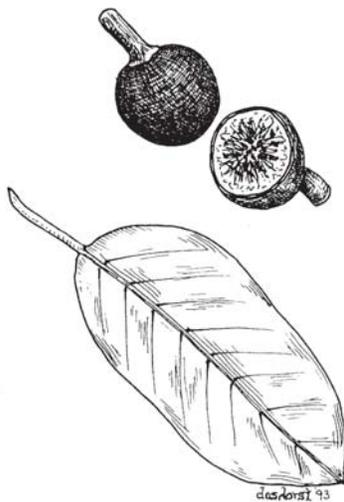
Describe the feel.

Estimate the length, width and thickness, of cork that could be taken from the main trunk.

Length _____ metres
Width _____ centimetres
Thickness _____ centimetres



8. Moreton Bay Fig



Do you think this tree is in flower?

Yes / No

**Find a fig on the ground. Open it.
Look very closely.**

Can you see any parts inside that look like flowers?

Yes / No

Leave the fig on the garden for our ducks to eat.

9. Bromeliads (Amazon Waterlily Pavilion)

These plants usually live off the ground on tree branches. They are called epiphytes. Look closely at one.

How do they get water and nutrients living away from the soil?



10. Amazon waterlily (Amazon Waterlily Pavilion)

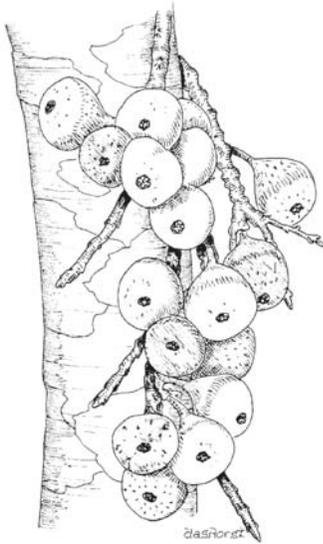
One leaf is strong enough to hold up a small child.

Finish the drawing by adding the veins that make this leaf strong.

Why do the leaves float?



11. Cluster Fig



Where does the fruit grow on this rainforest tree?

Fruit growing in this place is easy for birds and bats to reach.

How do animals help the tree by eating its fruit?

12. Sausage Tree

Look for 'sausages' hanging down from the tree.

Sketch some on the drawing.

In Africa, these pods are hollowed out leaving the tough skin as a shell. They are called gourds.

What could they be used for?



Extra information on the plants you might enjoy reading:

1. Butcher's Broom (*Ruscus hypoglossum*)

This plant comes from dry Mediterranean regions and at first appears to be covered by shiny, deep-green leaves. These are not true leaves, but flattened branchlets called cladodes. Close examination of these cladodes will reveal tiny flowers emerging from clusters of very small true leaves. The greatly reduced size of the true leaves on this plant may help to reduce water loss. The flattened green stems, rather than the leaves, carry out most of the photosynthesis for this plant.



2. Mimosa - A Touchy Plant (*Mimosa spegazzinii*)



When touched, the leaflets fold up and collapse. After a short time, when the irritation is over, they resume their original position. The movement is caused by a sudden drop in water that forces the leaflets to collapse. The leaflet also collapses in response to lack of light, high temperatures and heavy rainfall.

Some possible advantages of this movement could include:

- reducing leaf damage in heavy rain or hailstorms
- flicking off damaging insects
- making the plant look unattractive to browsing animals.

3. Parapara - (*Pisonia umbellifera*)

The five-ribbed, seed pod produced by this plant is very sticky. When ripe, it adheres to small birds as they brush past. In some cases, birds are immobilised by the sticky mass of pods and held until they die, exhausted in the struggle to free themselves. The parapara seeds germinate in the bird's remains and later fall to the ground to take root in the rich compost formed by the decayed bird's body. North Queensland Aboriginal groups would make a circle of the sticky seed pods around a fruit lure. The trap was designed to catch ground dwelling birds.



4. Bottle Tree (*Brachychiton rupestre*)

This tree comes from the monsoon area of Queensland. During the wet season, the unusual shaped trunk stores water in preparation for the long, hot, dry season. The wet spongy tissue inside the trunk gives a hollow ring when the trunk is firmly tapped with an open hand. "Bottle Trees" probably saved many early settlers and Aboriginal people from dying of thirst. The water stored inside can be reached by cutting sections from the trunk and squeezing the soft inside wood. Horizontal scars form when limbs drop. Look for the attractive scar patterns on the trunk.



5. Paper Bark Tree (*Melaleuca quinquenervia*)



Paperbarks come in different shapes and sizes but most of them have papery bark and flowers resembling bottlebrushes. The bark from this tree is great to feel – soft, spongy, flaky, and velvety. Paperbark is not used to make paper. Aboriginal people used it to make canoes, mats, swaddling for babies and other body garments. Early settlers made a beverage similar to tea from the leaves. Oil from the leaves of some paperbarks is used in the perfume industry. The soft papery bark can be used as a liner for hanging baskets.

6. Ferns (Simpson Shade House)

There are a number of interesting ferns in this shade house. Ferns reproduce by tiny, microscopic spores held in cases called sori. These spore cases are found on the underside of fern leaves or fronds. Different types of ferns have different patterns of spore cases. This is used to help identify ferns. Look carefully, you will be able to find many different sori patterns. Many of the rocks that line the pathways are covered by primitive moss and liverwort plants.



7. Cork Oak (*Quercus suber*)

This tree is grown in large forests in Spain and Portugal. It has also been introduced into California. After about ten years a soft layer of cork, between 5 and 10cm thick, may be peeled off the trunk and older branches. This leaves fresh, green bark underneath. The first layer to be peeled off is called male cork; the tree will then produce a new bark, of much higher quality, called female cork. This can be harvested at intervals of 8 to 10 years from trees that can live up to an age of 200 years. Cork is used in bottling, flooring and as an insulation material.



8. Moreton Bay Fig (*Ficus macrophylla*)



The fig fruit is unusual because it has tiny flowers, lacking petals, on the inside of the fruit. To reach and pollinate these 'inside' flowers, a tiny female wasp enters the fig through a small opening designed just for this purpose. It lays eggs in some of the flower bases. After the eggs hatch, the young wasps eat the fig fruit. The male wasps chew through the fruit to create an opening so that the female wasps can fly out to a different fig to lay her eggs and pollinate the next flower.

The tree has a thick buttress root system that helps to balance the huge spread of branches. The early settlers recognized the need for shade and planted many of these trees. In Adelaide, the fruit drops almost continually. Underneath the tree, there is often a fermenting aroma from the fallen fruit. Ducks can often be seen feeding on the many figs lying on the ground.

9. Bromeliads (*Neoregelia* species)

Located in the Northern Room of the Amazon Waterlily Pavilion. Some bromeliads live off the ground on other plants. They are known as epiphytes. They do not harm the hosts that they grow on. Living away from the soil, bromeliads have special features that catch water and nutrients. Look at how water is directed and stored in the middle of the plant. The tightly overlapping leaf bases allow this collected water to be held in a small pool. This pool in turn attracts a small world of insects, frogs, spiders, lizards, etc. whose droppings and remains help to fertilize the plant. Some bromeliads have spectacularly coloured leaves to attract insects to the display of flowers in the centre of the plant.



10. Amazon waterlily (*Victoria amazonica*)

Victoria amazonica grows in the calm waters of ox-bow lakes along the Amazon River and in flooded grasslands. The glossy green, floating leaves grow over 2 metres across. These large leaves have a pronounced maroon lip around the edge, which is notched in two places to drain rainwater from the surface of the leaf.

The flower is one of the largest in the world growing up to 40cm across. The waterlily's white fragrant flowers open late afternoon/early evening. Their fragrant scent attracts beetles to the inside of the flower which then closes trapping the beetles until the next day. The flower can produce heat up to 10°C warmer than the outside to keep the trapped beetles active. The next day the petals which have turned a pink colour open up releasing the pollen covered beetles who visit other flowers and cross pollinate them.



11. Cluster Fig (*Ficus racemosa*)



This rainforest tree has flowers and fruits attached directly to its trunk and main branches. This is known as cauliflory. Growing flowers and fruits here makes it easier for animals to reach them in the dense rainforest canopy. Fruit bats, in particular, are attracted by the smell of ripe figs and will often carry them to new clearings where they drop seeds. This allows the trees to become more widely spread and to grow without competition from their parent plant.

12. Sausage Tree (*Kigelia pinnata*)

For most of the year this tree bears sausage-shaped fruit pods that hang on long, string-like stems. They look like sausages hanging in a butcher's shop. The fruits, unlike sausages, are not edible.

They can be up to 60cm long and 10cm wide. In Africa, the fleshy pulp is scraped out to leave a hollowed shell of tough, hard skin. It is known as a gourd. Some of the many traditional uses of gourds includes: water containers, dishes, baby rattles and musical instruments.

