

## THE SUCCULENT GARDEN (est 1992)

The Succulents form a very large group of plants from the low rainfall tropical and subtropical areas of the world, and consists of representatives from the following families:

1. **CACTACEAE**, eg genus *Cactus*
2. **AGAVACEAE**, eg genera *Agave*, *Sansevieria*
3. **ASCLEPIADACEAE**, eg genus *Stapelia*
4. **CRASSULACEA**, eg genus *Crassula*, *Echeveria*
5. **ASTERACEAE**, eg genus *Senecio*
6. **EUPHORBIACEAE**, eg genus *Euphorbia*
7. **FICOIDEACEA**, eg genera *Conophytum*, *Lithops*
8. **FOUQUIERIACEAE**, eg genus *Fouquieria*
9. **LILIACEAE**, eg genera *Aloe*, *Gasteria*, *Haworthia*
10. **PORTULACACEAE**, eg genus *Anacaniseros*

The Succulent Garden contains representatives from most of the above families. Many of the plants growing here are very rare, and some extinct in their native habitat.

## Features of the Succulent Garden

(look for the large number signs)

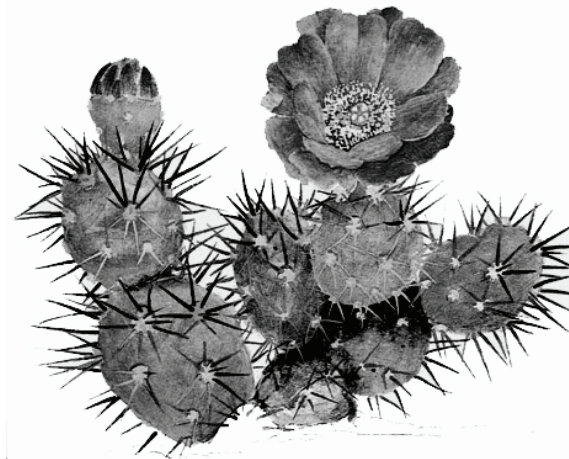
**(1) The Aloe Collection;** is a unique collection in Australia consisting of approximately 80 species which are native to South Africa and Madagascar.

**(2) The Golden Barrels** (*Echinocactus grusonii*) occur naturally in southern USA and Mexico. The Garden has a number of these spikey plants which may not flower until they are 20 years old. They may live to 100 years and grow to 1 metre in diameter.

**(3) The Opuntias:** *Opuntia* is the largest and most widespread genus of the Cactaceae, growing from Canada to Patagonia. They are easily recognised by their large disc-like "stems". In times of drought, the large *Opuntia ficus-indica* is chopped up for cattle feed.

**(4) The Euphorbias:** This group of spined succulents may range in size from small plants to tree size and most contain a caustic white milky sap which is poisonous. The flowers are tiny and usually insignificant, however, their attraction lies in the unusual shapes of the plants. Southern Africa is their principal habitat.

**(5) Pony Tails** (*Becurcarnea recurva*) are native to Mexico, and as can be seen by the larger 40 year plant in the Garden, can grow to a large size. The large bunches of red flowers appear when the plants are quite large.



## Succulent Questions...

### What is a Succulent?

Succulents have water storage tissues in their leaves, stems or roots and are able to withstand extended periods of drought.

### Where do they come from?

With few exceptions, cactus come from North and South America. The remainder of the succulents come from around the world, with southern Africa having the greatest number. Australia has only a few species in the *Aizoaceae* and *Chenopodiaceae* families.

### What Growing Conditions are Necessary?

Conditions vary, but as a general rule they require bright sunny position in a well drained soil such as a mix of river sand and potting mix.

### How Long Do They Take To Flower?

Some seed grown plants will flower in their second year, while others may require 20 years or so. However, once they commence flowering, they should do so annually.

### Why Did My Succulent Die?

This is normally due to over watering. Water once a week during summer, and do not water excessively or during winter or cold weather.

### Do They Need Fertilizing?

Yes. Use a slow release fertilizer in moderation during Summer.

## Australian Arid Plant Garden

Australia has very few succulent plants in its extensive arid and semiarid regions. The Australian salt bushes (*Chenopodiaceae* family) are semi-succulent. Succulent plants store water in their tissue and therefore require a regular rainfall, although it is generally very low. The rainfall in arid Australia is not only low, but also irregular and unpredictable.

Drought of varying lengths, broken by short wet times, is the normal condition, and Australian plants have evolved different strategies to cope with the low water availability.

Some plants, especially the daisies in the ASTERACEA family and the pea flowers in the FABACEAE family, grow rapidly from seed, flower and set seed quickly after heavy rain. The seed then remains dormant in the soil, often for years, until the next rain arrives.

Other plants, especially the woody shrubs such as *Acacia*, *Ermophila*, *Grevillea*, *Senn*, etc reduce their water use by having densely hairy leaves and stems to insulate them, and the hairs are often silvery to reflect the heat. Alternatively they may have viscid leaves with a varnish-like coating to reduce water loss. The stomata, the pores through which carbon dioxide and water pass in and out of the leaf, are often sunken and covered by hairs or waxy coatings to maintain a high water vapor density at the surface of the leaf stomata, even in windy conditions.

In prolonged dry conditions the plants become physiologically inactive, and ultimate leave may be shed.

A third strategy adopted by some species, such as Mulla Mullas (*Ptilotus* sp.) die back to an underground rootstock, and then shoot more or less annually depending on conditions.

The scattered desert trees usually occur where their deep root systems reach underground water. The leaves of the eucalyptus and wattles hang vertically to reduce the amount of heat reaching them, and they often have whitish trunks to reflect the heat.

A characteristic and ubiquitous plant of arid Australia is the spinifex (species of *Triodia* and *Plectrarchne* in the grass family *Poaceae*). The leaf blades of these hammocky grasses are hard and rolled so that the stomata are concealed, and are either hairy or resinous to further reduce water loss. After severe drought or fire they will reshoot from the rootstock.

The Australian Arid Plants Garden contains a few representatives of these plants which we have been able to grow in the more humid conditions of the east coast.



Mulla Mullas

# Hunter Region BOTANIC GARDENS

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## SUCCULENT GARDEN and Australian Arid Plants Garden



Follow the Botanic Walk will take you to the Succulent Garden. You will go past the Rutaceae Garden and Lamiaceae Garden. You will need to turn off the Botanic Walk to enter into the Succulent Garden.



Open 7 Days, 9am to 4pm

(Closed Christmas Day, Boxing Day & Good Friday)