



**Central
Australia**

Australian Plants

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Covers: *Goodenia ramelii* on top of Mount Gillen (West MacDonnell Ranges). Occurring on rocky or gravelly ranges and hills, *G. ramelii* has been particularly prolific this year due to late winter and early spring rains in central Australia. Its distribution is concentrated in central Australia, but also spreads into Western Australia and just sneaks over the NT/Queensland and NT/SA borders. The majority of other central Australian (and Australian) *Goodenia* species have yellow corollas, so with its erect flowering stems up to 1 m high holding purplish-blue corollas, it certainly stands out from the crowd. Photo: Neil Woolcock.

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Australian Plants articles

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Pack your bags, we're going to the Alice!

Karlee Foster

Karlee remembers enjoying running around nurseries and garden centres as a kid growing up in Tasmania. An arts administration career later, she found herself in Alice Springs and soon acquired a curiosity for the flora of Australia's interior. Karlee studied horticulture via an apprenticeship at a local retail nursery and then worked at Olive Pink Botanic Garden. She currently enjoys working in the nursery at the Alice Springs Desert Park.



As the current Secretary of the Australian Plants Society Alice Springs (APS AS), I am the keeper of handwritten membership dues in gorgeous tattered notebooks held in a many-times-mended red leather satchel. These boxes of meticulously kept records are treasure troves of the imprint APS AS has made since 1972. During this time its members have dedicated

countless hours to projects, programs, conferences, outings and talks focused on highlighting and conserving central Australia's diverse flora.

In this issue of *Australian Plants*, we hear from botanist Peter Jobson with an overview of central Australia's plants and habitats with photos from Barb Gilfedder. Our Barb is a bit of a daisy nut, and so has written an article on daisy reclassifications to accompany her vivid images. We have a short and sweet article from Jenny Purdie on the 38 *Eremophila* species that live on our doorstep. Bec Duncum writes about the many local bushfoods derived from plants and also the 'all-in-one' Alice Springs Desert Park. These three ladies (Jenny, Barb and Bec) have recently compiled two superb brochures full of plant photos. After perusing this issue and deciding that a trip to the centre is long overdue, you will need them to identify what plants you see.

Peter writes again with some surprise 'arid' species – ferns, gymnosperms and our one palm. Connie Spencer gives us a look into the local 'dry jungle', the Intertexta Forest, a little paradise not more than 20 minutes from the Alice town centre and also summarises the immense record keeping that has gone into monitoring one of two *Acacia latzii* populations over the last twenty years. And finally, the Curator of Olive Pink Botanic Garden, Ian Coleman, gives us a look back into the history of the Garden site and what it's like now.



We hope you enjoy the stunning images that accompany the text; we'd like to note that in all articles, the photographs are taken by the author, unless otherwise stated.

APS AS would like to thank Lynn Day for her assistance in proof-reading this issue of *Australian Plants*.



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Gossypium sturtianum, Sturt's Desert Rose, the floral emblem of the Northern Territory.
Photo: Rebecca Duncum

Introduction to the plants of central Australia

Peter Jobson

Peter is the current Senior Botanist and Curator for the Northern Territory Herbarium in Alice Springs. He has travelled extensively around Australia collecting for various herbaria over the years. Except for maybe a paddock of cobbler's pegs, there are virtually no plants he doesn't like. Photos: Barb Gilfedder

Contrary to what you would expect, the flora of central Australia is not poor in species number, but rather it consists of over 2300 species. This is due, in part, to the diverse landscape and soil types within this region. Sand dunes, claypans, salt lakes, gibber plains, river flood-outs, gorges – both deep and shallow, hills and mountain ranges all make up the landscape of central Australia.

The tallest peaks for both South Australia (Mt Woodroffe – 1435 m) and Northern Territory (Mt Zeil -1531 m) are present here. The main soil types are either sands or clays, but their sources are diverse – wind blown (aeolian), alluvial, and erosion are obvious, but less so are those influenced by salt or derived from gypsum.

The most speciose part of central Australia is the MacDonnell Ranges region, housing well over 1300 species, with the highest level of endemism as well as providing a refuge to species more often associated with wetter climates. In contrast, the Simpson Desert is quite poor in species with under 100 recorded and possibly only one endemic.



Acacia pickardii on gibber plain Andado Station



Ptilotus obovatus on alluvial plain, Ross Highway



Scree slope in Beddome Ranges





Water in Trephina Creek (East MacDonnell Ranges)

Some surprising facts emerge when you look at the genera and number of species. By far, *Acacia* (wattle) is the largest genus in the region with over 110 taxa, whereas the *Eucalyptus* (eucalypt) have 30 species and *Corymbia* (bloodwood) just 17. Other groups well represented include *Eremophila* (emu or fuchsia bush) 44 taxa; *Sida* (Sida) – 43; *Goodenia* (Goodenia) – 41; and *Senna* (cassia) – 27.

The dominant plant families for the region include grasses (320 + taxa), daisies (184), peas (174), chenopods (146) and the hibiscus family (136). Some of these families consist of well-represented genera such as *Eragrostis* and *Triodia* in the grasses, or *Maireana*, *Atriplex* and *Sclerolaena* in the chenopods; whereas in the case of the daisies and peas, although there are a few genera that have numerous species (*Rhodanthe* and *Crotalaria* for example), most genera are represented by one or two species.

Absences also tell an interesting story: there are no *Boronia*, *Banksia*, *Leptospermum* (Tea-tree) or orchids. There are only two egg-and-bacon type peas (one each in *Daviesia* and *Gastrolobium*); one bearded heath (*Leucopogon*) and two sundews (*Drosera*). There is a single palm (*Livistona*) and single cycad (*Macrozamia*).

So, if the species one normally thinks of as iconically Australian are missing, but there are still large numbers of taxa present, what is the likely origin of the central Australian plants? The answer is a complex, three-pronged one. The three prongs are: temperate origin, tropical origin, and refugia from a wetter time.

Plants that are of temperate origin have either radiated as the landscape dried out, or have become refugial. The groups that have radiated include *Eremophila* (the emu or fuchsia bushes), *Senna* (the cassias or sennas), the paper daisies, a number of acacias, and the lambs tail group in the mint family (formerly in either the Verbenaceae or Chloanthaceae) – *Dicrastylis*, *Newcastelia* and *Pityrodia*. For all of these, their nearest evolutionary relative is found in the semi-arid zone or at the margins of true temperate regions. These groups took the opportunity to speciate and occupy the new areas as the continent dried out roughly ten million years ago.

An example of a temperate wattle occurring in central Australia is *Acacia victoriae*. Regardless of how dry the weather has been, it always flowers in spring – a leftover feature from when it or its ancestor lived in moister times.

The plants of tropical origin are chiefly from families one associates with savannah country. The hibiscus family (Malvaceae) is an excellent example: genera such as *Abutilon* (Chinese lanterns), *Hibiscus* (hibiscus), and *Sida* (sidas) are obvious components of the landscape. Within the peas, a large number of the species are from groups that are found in other tropical regions; these include *Glycine* (soy bean), *Indigofera* (indigo) and *Tephrosia*.



Ptilotus macrocephalus and *Rhodanthe floribunda* among native grasses at Newhaven Sanctuary





Acacia victoriae flowers

A similar situation occurs in the grasses with genera like *Eragrostis* (lovegrass), *Aristida* (wiregrass), and *Triodia* (spinifex) either representative of world-wide tropical regions, or originally of tropical origin. Other well-known plant groups belonging here include *Solanum* (bush tomatoes) and the Convolvulaceae family (bindweeds and convolvulus).

The third grouping contains those species that represent a flora from a wetter time and have managed to cling on in the few remaining moist places. The majority of these are found in the gorges or in rock crevices. This includes the majority of the ferns, the cycad and White Cypress Pine. These will be covered later in this issue. These species are easily encountered in the Kings Canyon (Watarrka) area, and the gorges and hills of the West MacDonnell Ranges.



Aristida contorta at Newhaven Sanctuary



Corymbia aparrerinja (Ghost Gum) with Buffel Grass. Mount Gillen in background

In conclusion, central Australia is a region full of species with a mixing pot of tropical and temperate elements, and a few refugia plants from a former wetter age. The various landforms and soils allow many opportunities for species to become established in the region, increasing the number. Management of such a region is obviously difficult. Conflicts between pastoralism and the environment, with weather and temperatures being extreme and highly variable, have taken their toll. The introduction of *Cenchrus ciliaris* (Buffel Grass) to combat erosion

from severe drought and as a fodder plant has resulted in competition between the native grasses and herbs, some of which are highly palatable and targeted by stock. Buffel Grass easily outcompetes many of the local species and increases fire intensity, resulting in a change in the vegetation over time. There is obviously no easy solution to this problem and research and sustainable management are desirable to ensure there is a balance between an environment for everyone to enjoy and a valuable industry.



Callitris glaucophylla and *Macrozamia macdonnellii* in Chewings Ranges





Central Australian daisy names

Barb Gilfedder

As a child in rural England, Barb remembers collecting bunches of wildflowers from roadside verges. As a primary school teacher, she always had plants on the list of themes to be studied by the students. She is still seeking out different flowers, but now to photograph and identify in between volunteering at the Olive Pink Botanic Garden and the Alice Springs Herbarium. Everything came to fruition recently when she, with friends Jenny Purdie and Bec Duncum, had two brochures on central Australian flora published.

There are 184 species of the Asteraceae (daisy) family in central Australia. It can be quite difficult for an amateur botanist trying to identify them all. Some of them used to be in the *Helipterum* genus (13) and in the *Helichrysum* genus (10). In 1991 Anderberg, AA published *Taxonomy & phylogeny of the tribe Gnaphalieae (Asteraceae)*. *Opera Botanica* 104: 1-196.

He showed that the traditional *Helipterum* and *Helichrysum* just didn't hold and either resurrected old names, or generated new ones to match his new groups (genera). Anderberg used morphology of all parts of the plant and anatomy to come up with the results. The chief botanist in Australia to continue his work is Paul Wilson from Perth Herbarium, but Philip Short of Melbourne Herbarium and later of Northern Territory Herbarium, also worked on the multiheaded species (*Angianthus*, etc).

Primarily the differences are achene (seed) shapes and the pappus, (hairs on them) but also the types of bracts and involucral bracts, and whether leaves are opposite or alternate. So these 23 *Helipterum* and *Helichrysum* were divided between ten genera.



From left:
Schoenia ayersii
S. cassiniana
S. ramosissima

One genus, *Schoenia*, scored three species from the renaming – *S. ayersii*, *S. cassiniana* (Pink Everlasting) and *S. ramosissima* (Dainty Everlasting).

The genus is named after Johannes Schoen, a botanical illustrator in the 19th century. All these central Australian species are annuals. *S. ayersii* is an erect and aromatic billy button, with the small flowers distinct and with tiny petals within the composite head, *S. cassiniana* is an everlasting with papery rays and the composite heads clustered on branching stems and *S. ramosissima* is a smaller erect multi-stemmed plant with yellow heads. Superficially they all look very different, but looking at the details of the achenes and the pappus with a lens, or microscope the similarities would be striking.



Leucochrysum stipitatum



Leucochrysum fitzgibbonii

Leucochrysum (leuco – white and chrysum – gold) scored two species from the renaming. Again, they are superficially different. *Leucochrysum fitzgibbonii* (Fitzgibbons Daisy) and *L. stipitatum* (Saltspoon Daisy or Spinifex Daisy) are pictured below.

In my research I found the *Leucochrysum fitzgibbonii* has had another renaming and is now called *Waitzia fitzgibbonii*.

Whatever its latest name, I love the way *L. fitzgibbonii* hangs its flower heads until they are mature, when the flower stalk stiffens and the flowers face the sky, inviting insect helpers to fertilize the seeds. *Waitzia acuminata*, its yellow, now closest relative, performs a similar action. *L. stipitatum* means stalked and refers to the stalked inner bracts.

There are three that were moved to the *Chrysocephalum* genus.

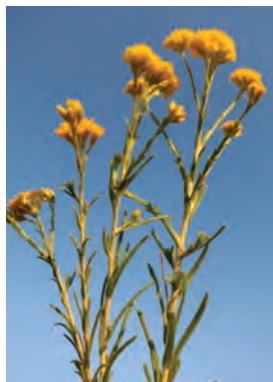




C. apiculatum



C. eremaeum



C. pterochaetum

Chrysocephalum apiculatum tricked me on a visit to Tasmania recently. There were plants with flowers so much bigger and fluffier than our small yellow buttons. Perhaps it is all Tasmania's rain and cold that makes it want to keep the developing seeds warm!

But our smaller, greyer central Australian version is an amazing survivor, one of the few small native plants that is holding its own strongly against the invasive *Cenchrus ciliaris* (Buffel Grass).

Chrysocephalum eremaeum is often found on red sandhills, while *C. pterochaetum* is more often on stony slopes.

The *Rhodanthe* genus came out the biggest winner from the reorganization gaining eight species, making a total of ten *Rhodanthe* occurring in central Australia.

Here are a few of them:-



R. charsleyae



R. citrina



R. floribunda



R. tietkensis



R. stricta



A. saxatilis



A. podolepidium.
Image: courtesy of the SA Seed
Conservation Centre

One in the old *Helichrysum* genus and one in the old *Helipterum* genus joined forces and both became *Anemocarpa*. *A. saxatilis* is quite common on limestone hills around Alice Springs but *A. podolepidium* is rare in the Northern Territory.

The remaining previously *Helipterum* and *Helichrysum* daisies showed independence and all were given individual places in the taxonomic list. These are: *Leiocarpa semicalva* (Hill Everlasting) which as its name suggests often grows on hills but not always, *Lawrencella davenportii* (Davenports Daisy), a beautiful pink everlasting daisy with single stemmed flowerheads, *Ozothamnus kempei* (no common name) which grows amongst rocks, *Cremnothamnus thomsonii* (Cliffside Daisy) which grows on sheer rock faces finding small fissures to embed its roots in and *Xerochrysum bracteatum* (Golden Everlasting). The





latter produces some of the largest flowerheads amongst the central Australian daisies. It has lush sticky green leaves and rich golden blooms.

So all the *Helipterum* and *Helichrysum* daisies are still there. They go by many other names but a daisy is a DAISY!



Xerochrysum bracteatum



Cremnothamnus thomsonii



Leiocarpa semicalva



Lawrencella davenportii



Ozothamnus kempei Photo: Steve Sinclair

Enchanting Eremophilas

Jenny Purdie

Jenny has been interested in the flora of central Australia for more than 40 years. She has a diploma of Horticulture and worked as a technician for several years in the NT Herbarium. Jenny is a keen photographer with a large collection of plant photos and she is a co-author of several publications on central Australian flora.

Eremophila from Greek *eremos*, lonely places/desert and *phleo*, to love – a very fitting name for these desert-loving plants.

Thirty eight species (some with subspecies) of *Eremophila* can be found in central Australia ranging from the prostrate *Eremophila prostrata* through small and larger shrubs such as *E. obovata* and *E. duttonii* to the small tree *E. bigoniflora*. Two species, *E. prostrata* and *E. ovata*,



Left to right: *E. prostrata* (Karlee Foster), *E. obovata*, *E. duttonii*, *E. bigoniflora* (Barb Gilfedder), *E. ovata*, *E. willsii*, *E. maculata* (Barb Gilfedder), *E. gilesii*, *E. freelingii*





only occur in the Northern Territory, with all other species occurring in at least one neighbouring state.

Eremophilas are found in a wide range of habitats, e.g. *E. willsii* can be found on sand plains and dunes; *E. maculata* is mostly found along drainage lines; *E. gilesii* is often encountered in mulga shrublands and *E. freelingii* on rocky hills.

Eremophilas are an attractive addition to any garden and many, such as (Images: left to right, top to bottom) *E. polyclada*, *E. macdonnellii*, *E. maculata* var. *brevifolia*, *E. christophori*, *E. latrobei*, and the yet-to-be-named *E. sp.* 'Arookara Range' can be easily grown from cuttings.



E. obovata and *E. ovata* are also worthy additions. They will flower for long periods, can be pruned and, once established have minimal water requirements.

Some of the lesser known, but equally spectacular species include *E. battii*, *E. cordatisepala*, *E. acrida*, *E. goodwinii*, *E. neglecta* (Barb Giffedder) and *E. serrulata*. (Images: left to right, top to bottom)



Showcasing central Australian flora



Two friends and members of the Australian Plant Society Alice Springs (APS AS), Jenny Purdie and Barb Gilfedder, both keen flower photographers, returned from separate holidays clutching laminated, concertinaed flower brochures of flora from different parts of Australia. They both had the same idea – that a similar brochure on central Australian flora would be a useful addition to local flower publications.

They recruited Rebecca Duncum, also an APS AS member, to the team and set to work making lists of plants to be included, selecting 121 photographs and writing brief notes for the back cover. Peter Jobson, Senior Botanist at Alice Springs Herbarium, and Ian Coleman, Curator of Olive Pink Botanic Garden (OPBG), willingly provided assistance and guidance. The APS AS and the Alice Springs Field Naturalists Club (ASFNC) helped with funding. Paul McKenna of Colourfield Designs, put it all together and **Central Australian Flora – Forbs and Small Shrubs** was launched by Peter Latz, well-known botanist, in April 2015.



The brochure, which provides basic information on the plants it covers, was an instant success with both locals and tourists and received excellent reviews. Its convenient size and shape means it fits easily into a glovebox or backpack.

Encouraged by its popularity, the three photographers published a companion brochure, **Central Australian Flora – Trees, Large Shrubs, Grasses and Sedges** in August 2016.

It was again funded by APS AS and ASFNC, as well as Peter Fannin, another retired botanist, through OPBG. This second brochure is already proving to be as popular as the first.

Both can be obtained for \$5 each including postage by emailing apsalicesprings@yahoo.com.au

The castaways: the ferns, gymnosperms and palm of central Australia

Peter Jobson

In a moister Australia, approximately ten million years ago, the centre of the continent would have boasted a diverse fern flora, something similar to the moist gullies of south-eastern Australia. As the continent dried out, these species adapted as the moist conditions contracted to the coast. Fortunately, the deep gorges of the George Gill and MacDonnell Ranges, with their ability to trap water, created microclimates to support ferns, albeit a much reduced, depauperate flora.

The cycad and palm also require a microclimate that is moister and are thus restricted to the MacDonnell Ranges or Kings Canyon systems. Unlike the ferns, these can tolerate harsher conditions and are found outside the deep gorges. Their specific needs are more aligned with a requirement for a higher uptake of water. Finally, the native pine is intolerant to fire and is now restricted to rocky hillsides, or creek lines that are protected from regular fires.

Listed below are examples of a number of ferns that I find attractive or interesting, as well as presenting information on the two gymnosperms and the palm.

FERNS

Surprisingly for an arid environment, there are currently 31 recognised species of ferns, ranging across a number of families. None of the ferns are endemic to the region; instead they are usually found in temperate regions to the south, or are part of the tropical fern flora to the north and north-east. For a few ferns, these central Australian occurrences are the only ones for the Northern Territory.

Cheilanthes sieberi* subsp. *sieberi (Rock Fern)

This amazing ubiquitous little fern has one of the broadest distribution and habitat range of any species in Australia. Found in Tasmania and across mainland Australia, excluding the Kakadu and Arnhem regions, it resides in a variety of habitats including rocky outcrops, streams and under trees. In central Australia it is most frequently found in mulga under trees or in rocky slopes and screes. It is one of the “resurrection plants” in that it dies back to an underground stem in the harshest of summers and produces new fronds soon after good rains.

Cheilanthes lasiophylla (Woolly Cloak Fern)

Another frequently encountered fern – found in rock crevices of hills,



under shrubs in stony places, and especially anywhere some moisture will pool. It is easily identifiable by its thick, light-brown covering of hairs on the undersurface of the frond.

Cyclosorus interruptus (Creeping Swamp Fern)



Cyclosorus interruptus Photo: Jenny Davis

In Kathleen Springs in Watarrka National Park, this fern is quite a dominant feature. With its large green fronds, that can at times reach almost a metre tall, it looks completely out of place when one returns to the harsh brightness of the open cliffs of the George Gill Range. Isolated in central

Australia, elsewhere it hugs the east coast from Cape York to near Sydney; or it is found in the Kimberleys and Top End. Outside Australia, it is found throughout tropical and subtropical Asia and Africa.

Psilotum nudum (Skeleton Forked Fern)

One normally associates this species with damper places along the east coast, but surprisingly, it is found in gorge country in central-western Queensland (Carnarvon Gorge), the Kimberleys and Cape Range (Western Australia). In the Northern Territory, it occurs along the Top End, but also in Watarrka and one spot in the West MacDonnell Ranges. The plants look leafless, although on close inspection they have scale leaves along the stems. The fertile parts are yellow-green round balls.

Ophioglossum lusitanicum and ***O. polyphyllum*** (Adder's Tongues)

Adder's Tongues are definitely more associated with wetter climates, (for example you can find *O. lusitanicum* around tarns and alpine snowfields,) so I was delighted to discover they occurred out in the arid regions. *Ophioglossum lusitanicum* is fairly much restricted to rocks and gorges (it can be found at Uluru (Ayers Rock)), whereas *O. polyphyllum* has been known to live in harsher environments such as mulga woodlands and sandy or clay depressions. These small plants look more like a lily with its fleshy broad leaves, but the spike like structure is very unusual and could only be mistaken for a type of sedge or rush still in bud.

***Marsilea* sp** (Nardoo)

There are eight species of nardoo in central Australia, and they are really hard to identify. The characters are based on the fertile structures called sporocarps. These are hardened pea-like structures at the base of the frond stalks. Differences in the teeth number and arrangement, and the "nob" at the end (appendage)



Marsilea sp Photo: Barb Gilfedder

of the stalk of the sporocarp are all important; sadly, hairiness on the leaves isn't. The plants are found in seasonally wet areas like creeks and river banks, salt lakes, and claypan depressions. Nardoo was made infamous by the Burke and Wills (Victorian) Expedition as they ate flour made from the sporocarps. However, it made them weaker as the spores contain an enzyme that breaks down vitamin B₁.

Azolla rubra (Red Azolla)

First found in central Australia in late 2015, this species is most likely an introduction to the region. Its natural distribution is southern Australia, with an outlier population in the north-east of South Australia; in central Australia it has been found in one or two creeks in the East MacDonnell Ranges. It has small rounded leaves that over top the preceding one; their reproductive structures become apparent when the plant occurs on drying margins of waterways, and are mostly on the underside of the leaf. This species often has a red colouration in the leaves giving it its name of Red Azolla.



Azolla rubra. Photo: Barb Gilfedder





GYMNOSPERMS

It's a bit hard to believe that cypress pines and cycads are within the same group, but they share a similar reproductive cycle. In fact, their cycle is very similar to flowering plants, where the pollen must drill through living tissue to get to the ovary in angiosperms, but in gymnosperms, the pollen has direct access to the opening of the ovary.

Callitris glaucophylla (White Cypress Pine)

This species is common along the western slopes of New South Wales and Queensland, and semi-arid South Australia and Victoria, growing on alluvial flats or occasional low sand dunes; here in central Australia the White Cypress Pine is restricted to rocky slopes and screes of the ranges. The blue-grey foliage with black trunks against a red or orange-yellow background is very striking. This species is very fire sensitive and so its distribution is erratic, only returning to the burnt sites after a number of years, with repeated regular fires causing local extinctions. Near Alice Springs there are fine stands near Simpsons Gap and Standley Chasm.

Macrozamia macdonnellii (MacDonnell Ranges Cycad)

This spectacular species is one of the botanical delights when travelling through the West MacDonnell Ranges and Watarrka National Park. With nobbly grey trunks and blue-green foliage, they stand out on hill slopes and gorges. Male and female cones are on separate plants and are quite showy when mature measuring up to 50 cm in length. The obvious exposed seeds are egg shaped and bright orange.



Macrozamia macdonnellii
Clockwise from top left: female cones; male cones; seeds; mature plants in Standley Chasm.
Photos: Barb Gilfedder

PALM

Livistona mariae (Red Cabbage Palm or Palm Valley Palm)

Nestled within the Finke River Gorge system are these tall palms making the gorge look like it should be somewhere near the coast, rather than the arid inland. They look particularly spectacular framed against the deep-red cliffs and gorges surrounding them. Recent research using DNA has shown that they are in fact the same as the species (*Livistona rigida*) found around Mataranka Springs some 1200 km to the north. Whether they are a relict or introduced some thousands of years ago by the Indigenous people of the region is still being discussed. No matter, they still look incongruous with their red-tinged mop top of palm fronds.



Livistona mariae Photo: Jenny Purdie



Monitoring Tjilpi Wattle (*Acacia latzii*) in central Australia

Connie Spencer

Connie has lived in Alice Springs since the early 1970s. She is an honorary life member of both the Australian Plants Society Alice Springs Inc and Australian Plants Society, S.A. Region. Inc. She worked at the Olive Pink Botanic Garden for 27 years. Now retired, she volunteers as a Garden Grower propagating plants for the Garden and for plant sales.

Acacia latzii is rare, being known from only two locations: the Bacon Ranges south-west of Alice Springs and the Beddome Ranges on the eastern edge of the Northern Territory/South Australian border. This small spreading tree growing 4-6 m high, is named after renowned local botanist and ecologist Peter Latz. It has thick rough bark, flattened, greyish-green phyllodes, globular flower heads and linear seed pods with small, flattened black-brown seeds, and is listed nationally as 'vulnerable'.



A mature *Acacia latzii* specimen at one of the monitoring sites. Photo: Karlee Foster

Tjilpi Wattle is restricted to slopes and creek lines in mesa and gibber country. Although the populations appear to be healthy and produce copious amounts of seed after good rainfall, juvenile plants are very low in numbers. It was thought that this may be because of grazing by

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ANPSA 2018 Conference – Hobart

The Australian Native Plants Society (Australia) Inc. (ANPSA) presents a national conference every two years, in conjunction with the ANPSA Biennial General Meeting. These rotate through the six states and the ACT. Tasmania is the host in January 2018 which will allow ready access to flowering alpine flora.



Conference Theme: *Grass Roots to Mountain Tops* is depicted in our logo with *Themeda*, the grass roots, and the recognisable mountain tops shaping the map of Tasmania.

Dates: 15–19 January 2018

Venue: Wrest Point in Hobart, with wonderful conference facilities and stunning views of the Derwent River but most importantly a flat and navigable site with our own space for lectures, displays, meeting places, happy hour and dinners.

Program: The program is being developed and will contain all the traditional sections, lectures and social events.

Pre- and post-conference Tours: A selection of tours is being planned to King Island and to alpine and rainforest areas of Tasmania.

Pre-conference tour – Hobart and surrounds. If you choose to go on this tour, one of your day trips will be to Mount Field National Park, one of Tasmania's most loved national parks. The visit will include stops for subalpine and alpine flora and an easy walk around Lake Dobson to visit the Pandani Grove.

More detail is available at www.apstas.org.au/conference and this site should update as planning proceeds.

rabbits and cattle and trampling by cattle. In the early 1990s members of the Australian Plants Society Alice Springs Inc were interested in a project to assist with the conservation of this species.



Acacia latzii landscape in 2016.

Photo: Jennifer Noble

Acacia latzii exclosures

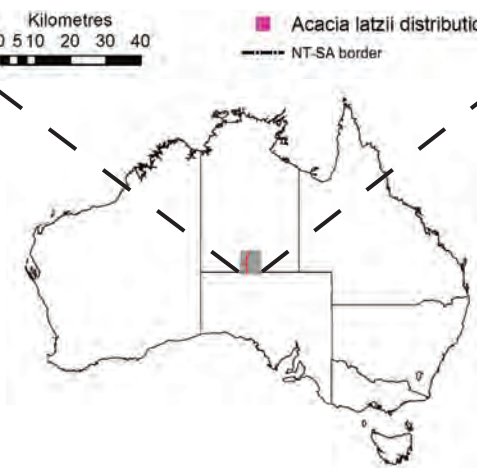
In 1992, following discussions with NT Parks and Wildlife and the landholder (a pastoralist), two small exclosures were built in the Bacon Ranges, approximately 140 km south-west of Alice Springs. The exclosures, measuring roughly 40 x 40 m, were to protect groups of mature trees from rabbits and cattle. Parks and Wildlife supplied the materials and APS members and friends built the fences. They were ace fence builders as 24 years later there has been no need for repairs



except replacing the odd clip holding the netting to the wires! Equivalent sized unfenced areas were marked out as control plots. Storage rain gauges were installed at each site as it was not possible to visit the exclosures immediately following infrequent rainfall.

Exclosure Site 1. Photo: Jennifer Noble





Distribution of two populations of *Acacia latzii* in the southern part of the Northern Territory. Members of APS AS have monitored recruitment dynamics at two locations for the northern population (west of the Stuart Highway). The distribution is shown on a 2009 Landsat image (TM bands 2, 3 & 4). Image courtesy Gary Bastin.

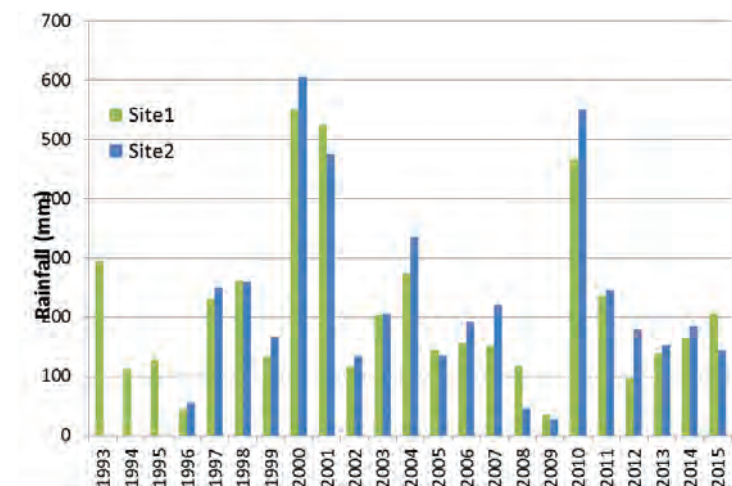
And so, monitoring Tjilpi Wattle at the two sites began. Mature trees in the exclosures and control plots were tagged and measurements recorded: the largest of these being 6 m high x 4.5 m wide and the smallest being 1.7 m high x 2.6 m wide. Several smaller specimens, thought to have established following the very wet years of the mid 1970s, were also included in the monitoring.

Observed changes

Rainfall was generally low and highly variable with 2000/01 and 2010 being exceptionally wetter years.

In January 2001 after two very wet years there was great elation when several Tjilpi Wattle seedlings were found – the first recorded recruitment event in the then nine-year monitoring program! Over the next four years we tagged and measured 93 seedlings with 30 of them being within one of the exclosures. Most of the seedlings were in clusters close to the canopies of mature Tjilpi Wattles. Surviving seedlings have now been measured annually for 13 years. As of 2014, half were still present with an average height of 300 mm and average stem diameter of 9 mm. These seedlings are now 14 years old so they are very slow growing indeed.

The cohort from the mid 1970s, of which 60 were tagged, has been measured every three years (since 2000) with the last recording being in 2011. At that time the average height of these ‘teenagers’ was 1 m. It is difficult to come up with an average stem diameter as the measurements are highly variable and many are multi-stemmed. Also,



Rainfall graphs, 1993-2015





it is quite possible that these cohorts are not all from the same rainfall event. Nevertheless, with these growth rates, the mind boggles at the probable age of the mature specimens!

As you can see by the rainfall graph, 2010 was another major rainfall event in the life of Tjilpi Wattle. In May 2011 easily 95% of the mature trees were flowering profusely. There was a hue of golden wattle as far as the eye could see! Due to circumstances at the time, it was nearly a year before another monitoring trip was organised so it is uncertain as to how much of the flowering event progressed to seed set. That trip, however, did confirm that most trees had a carpet of spent seedpods underneath.

From past experience it takes three to four years before seedlings are large enough to be recognised as such. Sure enough in September 2015 a single seedling was found in one of the exclosures under a mature tree, with a further pair just outside the fence being approximately 80 mm in height.

Unexpectedly there were many more seedlings in a cluster which had been monitored since 2004. There were 30+ new seedlings which size-wise fitted the 2000/01 cohort, but how they could have been missed



Hue of golden wattle. Photo: Jo Smith.



Shed seed pods. Photo: Jo Smith.



80 mm *Acacia latzii* seedling.



300 mm *Acacia latzii* seedling



Acacia latzii
— close-up of
flowers.
Photo: Jo Smith

over the years was a mystery. To add to the conundrum, even more seedlings of a similar size were discovered along a route travelled back to camp countless times over the years. This discovery begs the question as to whether these seedlings are 2000/01 germinants that were missed (hard to believe) or very vigorous 2010 germinants. Interestingly this last discovery of seedlings was found along a creek and also along a well-used cattle pad.

What conclusions can be drawn from the monitoring project so far?

There is little evidence of rabbit activity at the monitored sites. Seedlings within the exclosures are growing at much the same rate as those outside. There are cattle in the area and certainly, seedlings can be trampled. That may be the cause of some of our losses, but long dry periods between rainfall events are also likely to be a contributing factor.

It is more likely that the low number of juveniles is related to the nature of the species. Flowering and seeding events appear to be linked to rainfall with differences between individual trees. One tree can have a heavy flower load whilst few if any flowers may be present on an adjacent tree. Many flowers drop before they mature, probably due to drier conditions. Generally few seed pods develop from flowering events and even fewer contain viable seeds except after exceptional rainfall as was the case in 2000/01 and 2010.





Alice Springs Desert Park

Rebecca Duncum

Rebecca studied Horticulture in Sydney and was employed in several retail nurseries in both Sydney and Darwin before moving to central Australia where she worked as a Ranger in Uluru – Kata Tjuta National Park, a Horticulturist at the Alice Springs Desert Park and currently as an Interpretation Officer for the Parks and Wildlife Commission of the NT. She has a love of exploring her local environment and 'photographing every flower in sight'.

Nestled at the base of the West MacDonnell Ranges lies the Alice Springs Desert Park (ASDP), a unique Australian tourist attraction. In essence it is a combination of a botanic garden and an animal collection within a cultural experience. Plants, animals and cultural stories are presented in the context of their habitat and landscape. In this way, the Park shows that the people of central Australia are as much a part of the ecosystem as the Red Kangaroo or Spinifex Grass. The Desert Park showcases plants and habitats from the southern half of the Northern Territory.

All the plants in the collection have a wild origin and are displayed in a way that closely depicts their natural habitat. The Park's botanical interpretations highlight how the plant is utilised by either the local Arrernte people and/or by the animals in the ecosystem. There is a rich cultural link between the Arrernte people of central Australia and the Desert Park. Through the displays and professionally guided experiences, knowledge of the traditional use of local plants for medicines, food and tools is shared with Park visitors. The Desert Park is divided into three distinct habitats – Desert Rivers, Sand Country and Woodland – each bringing the desert to life.



Goodenia grandiflora in its purple form from Standley Chasm in Sand Country.
Photo: Karlee Foster



The stunning red-winged seed capsules of *Dodonaea microzyga* in Woodland Photo: Karlee Foster

The Park was opened in March 1997 and covers 1,300 hectares of which intensive development is restricted to 52 hectares so as to prevent overdevelopment of the area. The site is of cultural significance to the local Arrernte people and includes parts of the Akngwelye and Yeperenye Altyerre (Wild Dog and Caterpillar) dreaming stories.

Owned by the Northern Territory Government, the Park aims to be environmentally sustainable in its everyday operations. Research in



ASDP Sand Country on a stormy September morning: *Eucalyptus gamophylla* (Blue Mallee) with *Senecio gregorii* (Annual Yellowtop). Photo: Karlee Foster





ex situ conservation of rare and endangered plants is a focus of the Park, for example, seed-biology research and ongoing research into propagation methods of arid plant species.

The plants are of course vital to enhance the displays for the animal species on park. There are eight bird aviaries (three of which can be walked through), an aquarium and a nocturnal house with animals such as Mala, Bilbies, Echidnas, Burrowing and Brush-tailed Bettongs, Golden Bandicoots and Stick-nest Rats onsite. Horticultural staff work closely with the Zoology staff to ensure all needs are met, such as browse, perching and general enrichment materials.

Desert Park nursery

The Alice Springs Desert Park nursery is a unique facility in that it primarily propagates Australian arid zone plant species of the southern region of the Northern Territory. In general, the nursery produces all the plants which are required to be planted on the site. Every wildflower in the annual displays is either propagated in the nursery or grown as a result of seed collected by nursery and landscaping staff. Field trips are undertaken to collect seed and cutting material from the wild, under strict permit conditions. The nursery also occasionally helps Parks and Wildlife Rangers to produce rehabilitation species for sites in Northern Territory Parks and Reserves. In these cases, the seed used is collected from the site to be rehabilitated. This limits the chance of contaminating the local genetic material.



Vegetation in one of the three Woodland Aviaries – this one is home to Chiming Wedgebills, Black-faced Woodswallows and Red-capped Robins. Photo: Karlee Foster



ASDP nursery holding



Macrozamia macdonnellii in cultivation at the nursery

The nursery staff manage rare, threatened or difficult-to-propagate species. The facility assists in the preservation of endangered and threatened plant species such as *Acacia peuce*, *Livistona mariae*, *Macrozamia macdonnellii*, *Acacia latzii*, *Ricinocarpos gloria-medii* and *Acacia pickardii*.

It also succeeds in the propagation of several species known to be difficult, such as *Aluta maisonneuvei*, *Prostanthera centralis* and *Prostanthera schultzii*. The nursery is constantly attempting to propagate more species as they are collected.



Prostanthera centralis



Aluta maisonneuvei Photo: Karlee Foster

Record keeping at the Desert Park

The Desert Park stands out in the world of botanic gardens. With its habitat-based displays, simple garden-bed lists or grid references written on paper would never have worked at the Desert Park. The Park required a reference system that is adaptable, easy to use, and is applicable to almost any situation. The system outlined below forms the basis for an integrated approach to botanical records management.





Staff in the nursery assist with field biology research throughout the southern region of the Northern Territory. The nursery staff regularly undertake field collections of seed and cutting material to be used for propagation for the Desert Park's collection. Often the plants collected are new species for the Park and plants which have not been propagated before, meaning that the nursery staff use 'trial and error' to evaluate the most appropriate propagation techniques. The staff are constantly aiming to increase the diversity of species displayed on park. All plants collected must be vouchered with the Northern Territory Herbarium and given an 'accession number'. This number is then used to keep accurate and up-to-date information on all propagation in a Microsoft Access database. Detailed propagation and maintenance information is added to the database, such as any pre-treatment of seed, use of cutting hormone treatments, movement of stock around the nursery, and pest and disease management.

Before being transplanted each plant has a barcode tag attached. This tag includes the plant's botanical name and the accession number. Once the plants are transplanted on Park, they are mapped with a Global Positioning System (GPS) and added to the Park's Geographical Information Systems (GIS) software. The GPS has a barcode scanner connected which reads the barcode on the tag attached to the plant. This allows for quick, accurate mapping of plants.

Once all the data is entered, staff can then search the GIS for any plant species or accession number and obtain detailed information on survival rates, provenance, maintenance and the location of the planted specimens.



The Alice Springs Desert Park is a fantastic way of getting an introduction to the flora, fauna and culture of central Australia. It allows visitors who have limited time or ability to experience the centre in all its glory.

Endangered species *Acacia peuce*
barcode tag

www.alicespringsdesertpark.com.au

The Intertexta Forest

Connie Spencer

The Intertexta Forest/Dry Jungle is neither a forest nor a jungle but is the closest thing we have to either within the municipality of Alice Springs.

This tiny parcel of land (roughly 3 ha) located 15 km south west of Alice Springs is within the Ilparpa Valley. The Valley, bounded by the Heavitree Range to the north and an unnamed range to the south, contains a rich array of landforms from low hills, a swamp and claypans to a chenopod-covered plain. However, the Intertexta Forest with its diversity of flora is a favourite amongst Australian Plants Society members.

I first became aware of this precious piece of land in 1998 when the Ilparpa Valley Landcare Group was launched with 80–100 people turning up to rid the site of the introduced *Cenchrus ciliaris* (Buffel Grass). As part of the launch, local botanist Peter Latz led a tour of the *Eucalyptus intertexta* forest. I remember well the saying Peter used to describe the reason for this unique site – “the answer lies in the soil”. The dolomite/limestone foothills in front of the quartzite Heavitree Range are the source of minerals and nutrients that enrich the soil that supports the Intertexta Forest and its diverse and healthy understorey. A drainage channel into the middle of the forest provides a good transportation system for mineral-rich sediments and their associated nutrients and concentrates localised runoff, thereby extending the availability of soil water for plant growth.





The dominant upper storey species is *Eucalyptus intertexta*. The common name, Bastard Coolabah, does not do justice to this wonderful old shady tree and hence we call it the “Intertexta Forest” for short. There are only a few single-trunked specimens. It is likely that past damage by fire has caused many trees to develop a mallee form and grow into multi-stemmed specimens as they have matured. Other prominent trees include *Grevillea striata* (Beefwood), *Hakea divaricata* (Fork-leaved Corkwood), *Acacia estrophiolata* (Ironwood) and *Eucalyptus camaldulensis* (River Red Gum).

There is a host of medium to large shrubs with *Capparis spinosa* var *nummularia* – Native Passionfruit being the most photographed when in flower.

Chenopodium auricomum – Golden Goosefoot is another shrub we usually ponder over but the vines are by far the most intriguing. Few places would have so many species growing in such a small area, hence the name dry jungle coined by Peter Latz. There are seven vine species twining and climbing their way throughout the forest.

My favourite would have to be *Jasminium didymum* subsp. *lineare* – Native Jasmine. When in flower, the atmosphere of the forest is thick with its rich fragrance.

Another favourite is *Marsdenia australis* – Bush Banana. Peter Latz, author of *Bushfires and Bushtucker*, says that every part of this plant is edible with the flowers being the most favoured portions.

I get a kick out of introducing *Cucumis argenteus* (Headache Vine) but I liked its old name (*Mukia maderaspatanus*) better. I loved showing off how I could



Capparis spinosa var. *nummularia*
Photo: Barb Gilfedder



Jasminium didymum subsp. *lineare*
Photo: Barb Gilfedder



Marsdenia australis



Cucumis argenteus – fruit



Rhyncharrena linearis – flowers



Rhyncharrena linearis – fruit.
Photos: Barb Gilfedder

roll the name off my tongue! Its common name also provokes interest. Pitjantjatara people pulped the leaves, moistened them with a little water and used them as a cold compress to relieve headaches and induce sleep, hence the common name of Headache Vine.

Rhyncharrena linearis (Bush Bean) is an interesting, rather than decorative, twining perennial climber with thin leaves and pink-brown flowers. Its bean-like pods can be up to 20 cm long. Like the Bush Banana, most of this plant can be eaten – except for the woody stems.

The ground cover or lower storey consists of an assortment of daisies, saltbushes, goodenias and solanums plus 28 recorded species of native grasses. When there is water about the drainage channel has a carpet of green *Marsilea exarata* (Nardoo) and *Leptochloa fusca* subsp. *muelleri* (Brown Beetle Grass) with the latter giving the appearance of a temporary rice paddy.

Of course, the forest is more often dry than wet. The thick leafy mulched floor is crunchy to walk on and the drainage channel is dry and cracked but still the forest is a shady oasis, with a myriad of curiosities and a treasured jewel for those of us with a bent to all things natural.



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Central Australian Bushfoods

Rebecca Duncum

Central Australian Aboriginal people have been utilising the local plants as sources of food, medicine, tools and weapons for thousands of years. Certain fruits could be harvested and eaten fresh while others required various levels of preparation such as grinding or cooking. Typically, it was the women who gathered and prepared these types of foods. Secondary food sources, including lerps or grubs, could also be found on the leaves or in the root systems of the local flora. These provided much-needed protein or added a sweet treat to the diet. The following is a selection of the more commonly used food plants of the region, but is by no means definitive.



Implements used by
Aboriginal women



Dried fruit – Quandong,
Desert Raisin and Bush
Plum



Sugary lerps on *Eucalyptus camaldulensis* leaves



Cooking witchetty grubs in the coals



Lerp on a Mulga (*Acacia aneura*)



Witchetty grub being extracted from a root

Santalum lanceolatum (Wild Plum)

Family: Santalaceae

Wild Plum is a shrub or small tree which can reach 6 m in height but is usually around 2-3 m. The thick leaves appear greyish or blue-green and have a pendulous habit. The small, white flowers are followed by an edible cherry-like fruit which starts off green, phases through pink and maroon until reaching a black colour when ripe. Dried fruits, which have fallen to the ground, can be collected and reconstituted in water. The fruits, which contain a hard, round seed, are reputedly very high in vitamin C. Wild Plum can reproduce by suckering, producing small colonies. It is semi-parasitic on the roots of surrounding trees and shrubs and can be found in a variety of habitats, including along creeklines and in depressions.





Santalum acuminatum (Quandong)

Family: Santalaceae

This large shrub or small tree grows to 4-5 m high. The thick, leathery leaves are narrower and a paler green than *S. lanceolatum*. The flowers consist of small, whitish tepals. The fruit is highly favoured, by local Aboriginal people and the bushfoods industry. The red outer flesh has a tart taste and is rich in vitamin C. Early settlers to central Australia used the fruit to make pies and jams and it is still used for these purposes today. The large, round kernel was ground and used for medicinal and cosmetic purposes. The whole kernels are also used for decoration and jewellery. As with others in this genus, it is a semi-root parasite. It is decreasing across its range, possibly due to grazing by camels.



Ficus brachypoda (Wild Fig)

Family: Moraceae

Wild Fig is a large shrub which reaches 4 m high and up to 6 m across and has deep green, thick, glossy leaves. The small, round fruits ripen from yellow to a reddish brown and appear at any time of the year following rain events. It can be found on rocky hills, in gorges and other places protected from frost and fire. This is an extremely important plant for all central Australian Aboriginal people.



Solanum centrale (Desert Raisin)

Family: Solanaceae

The fruit from this small shrub is either eaten ripe or dried. The plant reaches 30 cm in height and can spread clonally to cover large areas. The deep purple, five-petalled flowers curve backwards to reveal prominent bright yellow anthers. The round berries mature from green to yellow and then dry, turning brown and sticky. It can be found on spinifex sandplains and adjacent to mulga woodlands in red sand. This plant is highly dependent on fire or other disturbances to maximise its fruit yield. Frost and lack of frequent fires can impede its growth and fruit production.



Solanum cleistogamum (Shy Nightshade)

Family: Solanaceae

A low, spreading shrub with stems covered in small spines. The flowers are pale purple or white and the fruit ripens to a pale yellow colour. This is the sweetest of all the Bush Tomato fruits and they do not need to be completely ripe to be enjoyed. The flavour has been described as banana-like. This plant can be found in sandy areas near salt lakes growing with spinifex and occasionally under mulga. It is another species which performs best after fire.

Marsdenia australis (Bush Banana)

Family: Asclepiadaceae

A twining climber with milky sap which requires other trees or shrubs for support on which to grow. The flower buds are sweet and slightly crunchy and the young fruits are eaten raw. Even the leaves of this plant are edible – the young leaves requiring no preparation while the older leaves are steamed first.





Ipomoea costata (Bush Potato)

Family: Convolvulaceae

This twining shrub has prostrate or arching branches. The leaves are thick and leathery with prominent veins. The pink-purple flowers are quite large and have a deeper purple throat. The edible underground tubers have been reported to reach up to 1 kg but become woody with age. The tastier tubers are found along the lateral roots, up to 3 m away from the base of the parent plant.



Enchylaena tomentosa (Ruby Saltbush)

Family: Amaranthaceae

A very widespread small shrub usually less than a metre tall with a sprawling habit. The small succulent leaves are covered in dense woolly hairs. The flowers are small and inconspicuous but the fruits are very distinctive, starting green then ripening through yellow to bright red, often in response to a rain event. This plant is typically found under trees and other shrubs.



Vigna lanceolata (Pencil Yam)

Family: Fabaceae

This trailing perennial groundcover has bright yellow pea flowers. The leaves have three leaflets and are a vivid green. This plant produces an edible swollen taproot and is a favoured food source. It typically lives along watercourses and floodplains.

Cynanchum floribundum (Native Pear)

Family: Apocynaceae

This shrub reaches 1 m in height, has milky sap and opposite leaves which terminate in a point. The flowers are white and star shaped and are followed by a pointed fruit containing large quantities of brown seeds with silky hairs attached to assist in wind dispersal. It is often found on the crests of sandhills and in or nearby to sandy watercourses. The young pods can be eaten raw whereas the leaves and older pods are often steamed first.

Capparis mitchellii (Native Orange)

Family: Capparaceae

This small, dense tree displays obviously different juvenile and adult foliage. The small young leaves are extremely thorny and appear tangled, possibly to deter predation by grazing animals such as kangaroos. The adult foliage is larger and the thorns have disappeared. The short-lived creamy white flowers open at night and only last a day. The fruit that follows ripens to yellowish-green, emits a strong pleasant odour and has edible yellow pulp.



Capparis mitchellii Photo: Barb Gilfedder

Capparis spinosa* ssp. *nummularia

(Wild Passionfruit) Family: Capparaceae

Related to the Caper Bush, Wild Passionfruit is a sprawling shrub reaching 1.5 m and up to twice as wide. The pure white, perfumed flowers last only a day and by afternoon have shrivelled and turned pink. Don a pair of gloves to protect yourself from the hooked spines and you will be rewarded with one of the best bushfoods in central Australia, but you have to be quick to beat the ants and the birds. The fruits are often picked green and allowed to ripen off the plant. The yellow pulp inside



Photo: Rosalie Breen





the ripe fruit is very tasty but the black seeds are bitter so best avoided. This plant likes to grow under trees on floodout areas or low hills. It is severely damaged by frost and the leaves are favoured by the White Caper Butterfly larvae who strip it bare. The larvae also attach their cocoons to this plant. These transform into beautiful white butterflies which can often be seen fluttering around the plant.

Acacias

The seeds of various species of Acacia are ground into flour. This is achieved by using a rounded stone on a flatter stone. Species used include *Acacia aneura* (Mulga), *A. colei* (Kalkardi), *A. estrophiolata* (Ironwood), *A. kempeana* (Witchetty Bush), *A. ligulata* (Umbrella Bush), *A. maitlandii* (Spiny-leaved Wattle), *A. murrayana* (Colony Wattle), *A. ramulosa* (Horse Mulga), *A. sericophylla* (Dogwood), *A. tetragonophylla* (Dead Finish) and *A. victoriae* (Victoria Wattle).



Above: *Acacia aneura* flowers

Left: *Acacia tetragonophylla* seed with bright yellow aril

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Olive Pink Botanic Garden

Ian Coleman

Ian has been the Curator of the Olive Pink Botanic Garden for the last two and a half years. In this time he has developed a special type of madness – antipathy toward Buffel Grass and an obsessive desire to control it on the rocky hills surrounding the Garden. His partner says he needs a more interesting obsession and a new hobby.

The Australian Arid Regions Native Flora Reserve, now the Olive Pink Botanic Garden, was founded 60 years ago after lobbying by Miss Olive Muriel Pink. An unconventional anthropologist, an outspoken advocate for Aboriginal rights, a botanical artist and a woman ahead of her time in the cultivation of Australia's native plants, Miss Pink was the Garden's Honorary Curator from 1956 until her death in 1975, aged 91. Reflecting on the location and founding of the Garden, Miss Pink wrote in 1959 to Dr William Crowther, Director of the Tasmanian Museum and Art Gallery:

One looks at Mt Gillen – & the Todd “River” Gums I thought it so “heavenly” a view (especially at sunrise, sunset & in rain) that I wrote to the Acting Admin. to ask “could it not be preserved as a Flora Reserve – for posterity? (As a place of peace & beauty: to preserve the flora already growing there & to plant the flat area – with Arid region (ONLY) flora....?” The Acting Admin. wired to me to know “If Administration Gazetted it as a Flora Reserve would (I) be willing to be Hon. Curator of it?” I wired back “Honoured & delighted to accept.....” So here I am!!! Curator with no knowledge of Botany whatever!! (And don’t want to have it! It seems chiefly arguments about classification of plants!)... But I “worship” trees & flowers. And especially the “gallant” ones of the arid regions of Australia. So I encourage & plant as many as I can get (& at 75, have strength for!).’

Miss Pink lived in the Garden, initially in a tent, then in a small tin hut. Today we treasure a globally unique arid zone botanic garden and continue to work towards Miss Pink's vision:

‘... forty-nine acres of ground on which to preserve and grow, native trees, shrubs and flowers – as a ‘soulfeeding’ antidote to the restless rush and materialism of what ‘modern living’ entails for so many...’.

Opened to the public in 1985 and renamed the Olive Pink Botanic Garden in 1996, the Garden of today has over 600 central Australian plant species including six that are listed under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999. The Garden provides an important habitat for the rare Black-footed Rock Wallaby and the 100 plus bird species recorded on site.





Hybanthus aurantiacus, makes a comeback at the Garden



Swainsona canescens in flower after spring rains

The Commonwealth Threatened Species Scientific Committee recognised *Cenchrus ciliaris* (Buffel Grass) under the Key Threatening Process 'novel biota and their impact on biodiversity' for ecosystem degradation, habitat loss and species decline in arid and semi-arid Australia, noting:

'it threatens biodiversity by out-competing native vegetation and increasing fuel loads to produce hotter and more intense wildfires... 'transformer weed'... widely considered to be the most debilitating 'fatal injury' weed of natural ecosystems in arid and semi-arid Australia and directly or indirectly displaces and threatens a large percentage of native and endemic plants and animals'.

With such a significant threat to the ecology and plants of central Australia, the role of the Olive Pink Botanic Garden is becoming ever more important. A major focus of the Garden over the last 18 months has been the control of Buffel Grass on the hills surrounding the planted garden. Three Green Army projects in the Garden have helped achieve important control goals. The Green Army is a federally funded environment programme for 17 to 24 year- olds. Last summer our Green Army participants – who are mainly from an indigenous background – were starting work at 5.30 am spraying Buffel Grass. An extraordinary diversity of plants and level of natural regeneration has occurred where control-has been achieved including numerous species of grasses, *Ptilotus*, *Solanum* and two species of *Nicotiana* not previously recorded in the Garden. *Cleome viscosa* and *Tephrosia* species have been especially prolific in a colourful display.



There have been 17 different plant species recorded in this small rocky outcrop, an area dominated by Buffel Grass just 12 months ago. Photo: Jenny Purdie

The outcomes of our Green Army projects, in particular in the area of Buffel Grass control, have been nationally featured by the Commonwealth Department of the Environment in their Green Army promotion. We are hopeful of being awarded more Green Army projects to work on extending the control and introducing more species threatened by Buffel Grass fires into the Garden.

Sixty years ago the visionary and activist Miss Pink planted a few native plants in a newly declared flora reserve. The renowned central Australian author and botanist Peter Latz describes today's Garden as: *'a globally unique treasure-trove of biodiversity and store of potential food and medical cures.'*

We can now add to that description our increasingly important role as a refuge, insurance population and translocation site for communities and species threatened by Buffel Grass wildfires.

Olive Pink Botanic Garden is located within walking distance of the CBD on the eastern bank of the Todd River and is open from 8 am until 6 pm every day except Christmas Day and Good Friday. The Bean Tree Café is open from 8 am until 4 pm for breakfast and lunch seven days a week. The café closes from 24 December until 31 January.

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