

NEWSLETTER

SPRING 2015

NUMBER 85

FRIENDS OF THE WAITE ARBORETUM INC.

www.waite.adelaide.edu.au/waite-historic/arboretum

FORTHCOMING EVENTS

FRIENDS OF THE WAITE ARBORETUM EVENTS

Free Guided Arboretum walks

The first Sunday of every month
at 11.00 am.
Walks meet at Urrbrae House

Combined Friends Christmas Party

Monday December 7th
5.30 pm - 7.30pm

WHAT'S ON AT URRBRAE HOUSE

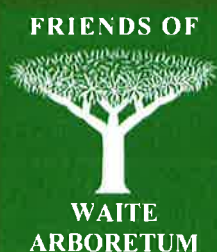
"**Assemblage**" an exhibition of
creative basketry presented by
The Friends of the Waite
Arboretum and Basketry SA.

Open daily **10.30 am – 4 pm:**
Sunday 14 February to Sunday
28 February, 2016.

Official opening: 2 pm Sunday
14 February, 2016.

More details at:

[http://www.adelaide.edu.au/
waite-historic/whatson/](http://www.adelaide.edu.au/waite-historic/whatson/)



Patron: Sophie Thomson

President: Beth Johnstone OAM, **Vice-President:** Marilyn Gilbertson OAM

Secretary: vacant, **Treasurer:** Dr Peter Nicholls

Editor: Eileen Harvey, **email:** eileengarden@y7mail.com

Committee: Henry Krichauff, Robert Boardman, Norma Lee, Ron Allen,
Dr Wayne Harvey, Terry Langham, Dr Jennifer Gardner (ex officio)

Address: Friends of the Waite Arboretum, University of Adelaide, Waite Campus,
PMB1, GLEN OSMOND 5064

Phone: (08) 8313 7405, **Email:** jennifer.gardner@adelaide.edu.au

Photography: Eileen Harvey



Pyrus syriaca, Syrian Pear

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FROM THE PRESIDENT

Spring is here and the evidence is all around us in blossom and fresh shoots. It is always such a cheerful experience to go into spring after a severe winter and the last one has been quite testing.

One of the reasons for knowing that it is spring is the Treenet Symposium, which occurs early in September each year. The Friends once again assisted with the registration period and it was encouraging to see the enthusiastic participants arrive to attend the first sessions. A report of the event will appear elsewhere in the Newsletter.

Quite a few members gathered in the Arboretum on the morning of 25th August to witness the unveiling of signage for the Bee Hotel, made last year by Terry Langham.

Dr Katja van Hogendoorn was on hand to talk about the variety of native bees using the very handsome Bee Hotel. Katja has been very generous with her support and assistance to the Arboretum and in particular, the Bee Hotel. We are all very grateful to her for sharing her knowledge. We are also grateful for the grant from National Science Week, which covered the cost of the signs.



Tomai, Gary, Laurel and the gabion seat. Photo Jennifer Gardner.

The generosity that began with Peter Waite's donation to the University of Adelaide and the people of South Australia so many years ago seems to me to have created an ethos that permeates the precinct.

There are many present day examples of generosity and one of the stand outs is the ongoing commitment of so many gardeners, who turn up regularly each week. Another is the way that Jennifer Gardner designed and built the labyrinth during a Christmas holiday period. The Labyrinth has become a landmark for many people who regularly come to dance, walk, talk and count the labyrinth.

There is also the ongoing commitment of various

garden societies and groups who work hard caring for the heritage roses, the Garden of Discovery and others spots within the precinct.

A recent example is the large amount of hard work put in by Laurel Crouch and Tomai Martin to the neglected space behind the coach house. By dint of very hard labour and sheer persistence, they have created a very pleasant garden.

Lastly there is the wonderfully designed and erected example of the Bee Hotel, with its handsome signage. No doubt there will be more examples in the future and we remain grateful for all the support from all those who assist in so many ways. Thank you from all of us.

Beth Johnstone

Jacob and Gideon Cordover Guitar Concert

The Drawing Room in Urrbrae House demonstrated its very good acoustics on Wednesday 26th August with a concert from the handsome and charming young Cordova brothers.

Currently residing in Barcelona, Spain, Jacob is recognised as one of the finest classical guitarists of his generation.

Gideon graduated from NIDA in 2010 and has performed in theatres in Australia, the United States and Canada.

In this, their first collaboration, they came together to present their adaptation of 'Platero & I', the touching Andalusian Elegy by Juan Ramon Jimenez. The concert interweaves Jimenez' beautiful prose with the evocative musical settings by Castelnuovo-Tedesco.

A century ago the Spanish poet and Nobel Laureate Juan Ramon Jimenez wrote his beloved "Platero and I". These stories tell of the life and adventures of a young man and his donkey, Platero, in their Andalusian village.

46 years later, Italian composer Mario Castelnuovo-Tedesco, drawing from his experience as a film composer, set each verse to music. All seventeen movements reflect scenes of the friendship between the man and his donkey, the change of seasons, children in the village, encounters with gypsies and so on. Gideon's beautiful modulated pronunciations gave great life to the stories that are sometimes humorous and sometimes sad.

In the drawing room, the beautifully crafted and performed music coloured the narration and brought the experience to life. It was an incredibly moving evocation of the marriage of music and literature and was a thoroughly enjoyable experience.

Beth Johnstone

IN THE ARBORETUM - FROM THE CURATOR

As I write this the Arboretum pears are a fine display of blossom and the deciduous trees are bursting with bright green new leaves.

The new version of the free Waite Arboretum App (v1.1) was released in the last week of August with two more themed walks, 730 images all taken in the Arboretum, social media sharing on Facebook & Twitter, the option to choose a Mandarin version and improved functionality. My colleague Marian and I gave a presentation on the development of the App at a workshop at the Treenet National Street Tree Symposium held at the Adelaide Botanic Gardens and there was considerable interest from the audience. Also at the Symposium, individuals and corporations which have made a significant contribution to Treenet were presented with Gold Leaf Certificates of Appreciation. Volunteers Marilyn Gilbertson and Dr Peter Nicholls were recipients for their assistance at symposia over many years.

On 25th August three Waite Arboretum Native Bee Hotel (NBH) signs were unveiled by FWA President Beth Johnstone. The signs were funded by a Community Grant from National Science Week and describe native bees and their nesting behaviour, brood cell closures and the corresponding species, and acknowledge the designer / maker volunteer Terry Langham. The NBH has become a special feature of the Arboretum delighting visitors especially children, as well as raising awareness of important research on native bees being undertaken at the Waite Research Institute. You can listen to Terry talking about the project on a podcast of his interview on Radio Adelaide. <https://radio.adelaide.edu.au/wp-content/uploads/2015/09/Terry-Langham-Bee-Hotel.mp3>

Visits to the Arboretum by children are increasing with schools participating in the University of Adelaide's Compass program taking our Indigenous Plant Use walk, Netherby Kindergarten children with parents taking a guided walk before picnicking on the lawns, and interest from other schools and Nature Play. I enjoy watching the wondrous delight of young children when they discover the native bee hotel, or the spot the Green Man as they play under the spacious enclosing canopy of the Port Jackson Fig *Ficus rubiginosa*, or stroke the trunk of the Paperbark *Melaleuca styphelioides* and spy a delicate, beautifully camouflaged spider, or rest on the robust roots of the iconic Dragon Tree *Dracaena draco*. Children are remarkably observant when they connect to nature.

Netherby Kindy children at the Bee Hotel. Photo Kloe Xu.



A small team of volunteers – Erica, Mauricio, Lucas, Khloe, Gloria and Erik are undertaking measurements of all the Arboretum trees for an exciting new project. If you would like to join this amiable group who come 9.30 am – 12.30 pm every Thursday please contact me.



Gary, Tomai, Laurel. Photo Jennifer Gardner

In the Coach-house Garden, volunteers Laurel Crouch and Tomai Martin, under the tutelage of stonemason Gary Stone, started building a gabion seat from local stone. A second gabion seat will be made in the Garden of Discovery by members of the Mediterranean Garden Society to complement the water feature currently under construction there. Each gabion will be topped with a redgum slab to match the existing seats and tables in the Garden of Discovery which is looking lush and lovely at present with wattles, grevilleas, pandoreas and banksias in full flower.



Acacia decora, Western Silver Wattle.
Photo Jennifer Gardner.

Wattles display splashes of gold in the NW corner of the Arboretum too and Channel 7 recently filmed an evening weather forecast with our Western Silver Wattle *Acacia decora* striking in bloom against a backdrop of the floodlit Lemon-scented Gums along Walter Young Avenue.

Jennifer Gardner

FRIENDS OF THE WAITE ARBORETUM NEWS

Christmas Gift Idea

The Friends of the Waite Arboretum are seeking new members. We suggest that current members may encourage others to join, perhaps by means of membership as a Christmas gift.

Either go online and download the membership application form: http://www.adelaide.edu.au/waite-historic/friends/arboretum/pdf/fwa_membership_form.pdf

Or telephone the Arboretum Office on 8313 7405

16th Treenet Symposium 3-4 September 2015

Many Friends of Waite Arboretum will be familiar with Treenet, the national urban tree research and education cluster based at the Waite Arboretum. Treenet advocates and promotes the value of the urban forest. Each year it shares information through a symposium.

The Friends have had a long association with Treenet in particular helping with behind the scenes work for the annual symposiums. In the early years, when the symposiums were held entirely on the Waite Campus, the Friends were responsible for the catering. I remember many years ago serving morning and afternoon tea on the verandah at Urrbrae House. Arboretum guides have regularly helped with Day 2 activities.

As Treenet grew and more people attended the symposium the first day's proceedings moved to The Wine Centre. Our help changed to assisting with the assembling of conference materials, preparing name tags and serving on the registration desk. We also helped outside caterers serve morning and afternoon tea and lunches in the marquee on the croquet lawn during the second day. This was a big job and the past work of many volunteers is greatly appreciated.

This year the symposium was held entirely away from the arboretum, with the conference sessions being conducted at The Wine Centre and the field day held in the Adelaide Botanic Garden. I helped assemble conference bags and name tags before the conference and with the help from Beth Johnstone, Jane Macdonald and Terry Langham serviced the registration desk at the Wine Centre on the first day. I also helped on the desk at the Adelaide Botanic Garden on Day 2.

It has been a pleasure and privilege working with David Lawry and Glenn Williams in the Treenet office over the years. I was delighted to receive a certificate acknowledging my efforts, along with those of Peter Nicholls who has been a long-time supporter of Treenet.

Marilyn Gilbertson

Treenet at the Adelaide Botanic Garden

About 140 people from the Treenet Symposium joined a Guided Walk in the Adelaide Botanic Garden. 12 Guides from the ABG prepared and presented walks. Some of these Garden Guides are also involved with the Waite Arboretum. I saw many of the Treenet participants while supervising the Woodturning display in the North Lodge and received some glowing reports about the walks. It was also interesting to hear some comments about the beautiful trees made by Les Loffler – there was a genuine interest in taking some wooden memento home after the Symposium

Ron Allen



Marilyn & Peter with Treenet Certificates. Photo Jennifer Gardner

NEW MEMBERS

We warmly welcome the following new members:

Ms Melissa Hellwig & family, Malvern.

How sharp are your eyes?

See if you can pick out the spider in the photo. Find out more on page 7.



WAITE ARBORETUM NATIVE BEE HOTEL SIGNAGE

The importance of native bee hotels is increasing in the University of Adelaide Waite campus with the installation of interpretative signage at the most recently built native bee hotel which opened in December 2014.



Beth Johnstone speaking at the unveiling of the signage.
Photo Jennifer Gardner

Beth Johnstone, President of the Friends of the Waite Arboretum, welcomed 35 volunteers, Friends of the Arboretum and campus staff to the unveiling of three interpretive signs at the Native Bee Hotel (NBH) in the Waite Arboretum. Beth spoke about the value of the contribution the volunteers make to the Waite Arboretum and Waite Historic Precinct Gardens. Beth then introduced Terry Langham who

designed and constructed the Waite Arboretum native bee hotel.

The signage provides general information about native bees, an identification chart of

six common species and their nest closures, and acknowledges Terry Langham. The signage was funded by a grant from National Science Week 2015 SA Community Grants and enhances the educational value of the NBH which intrigues and delights visitors to the Arboretum – especially children.

Dr Katja Hogendoorn from the School of Agriculture, Food and Wine at University of Adelaide - Waite Campus talked about the species of native bees that have been using the native bee hotel. One of these native bees is the Wasp Mimic Bee (*Hyleoides concinna*) that creates a curtain of 'cellophane' strands over a 6 - 8 mm opening.

Terry Langham, the NBH designer and maker, said that he finds working on the project is intriguing, fascinating and challenging. He enjoys observing the native bee residents and discovering their choice of opening size and accommodation types and the specific designs and types of closures they make.

Since the hotel's opening in December 2014, bamboo lengths and variety of plant materials have been installed into the gaps between the posts and into the some of the larger bamboo holes. In the coming warmer months some of the larger bamboo holes will be filled with mixtures of clay and sand. Nesting holes that have been used will also need to be cleaned out as solitary native bees do not clean out nesting holes when they have moved on. Native bees have very good colour vision. Providing a variety of accommodation types makes it easier for them to find their way home.

Terry Langham

Katja Hogendoorn and Terry. Photo Jennifer Gardner.



Waite Arboretum Native Bee Hotel

What are bees?

Bees are vegetarian wasps that collect pollen and nectar for their offspring. The honeybee is a social species that was introduced into Australia in the 1820s. Nearly all of Australia's 2,500 native bee species are solitary bees. Species differ in colour, shape and body length (1.2 mm - 2.5 cm). Native bees are not aggressive. Females have a sting, but will only use it when they are cornered and most of them cannot even get through your skin.

Bees are important!

There are about 100 species of native bees in the Waite Arboretum. They are important pollinators of native plants and crops. At the University of Adelaide's Waite campus, a research group studies their foraging and nesting behaviour.

What is a bee hotel?

A bee hotel provides nesting opportunities for native bees. About half of the native bees nest in the soil. The other half use crevices and hollows in plant stems and wood to nest. The latter species can use the hollows in the Bee Hotel.

Development of native bees








How do native bees make their nest?

Nests of solitary bees contain a number of rooms, or brood cells. The female provisions each brood cell with pollen and nectar and then adds a single egg. Over time, the egg hatches, the larva eats the food supply and then moults into a pupa. The pupa develops and emerges as an adult the next year. The adults mate and the cycle starts again.

What can you see from the outside?

After all the brood cells in a nest have been provisioned, the female closes off the nest entrance to protect it from intruders, such as ants and parasitic wasps. Different species of bees use different materials and ways to close their nest.



CLOSURE TYPE	NATIVE BEE TYPE				
					
Leaf pieces Ø 4 - 7mm	Leafcutter Bees		Resin with chewed plant material Ø 6 - 8 mm	Golden Browed Resin Bee (<i>Chalicodoma aurifrons</i>)	
					
Bee 'cellophane', (a type of silk) Ø 3 - 5mm	Masked Bees (<i>Hylaeus</i> species)		A curtain of 'cellophane' strands Ø 6 - 8 mm	Wasp Mimic Bee (<i>Hyleoides concinna</i>)	
					
Resin or sap from trees, sometimes adorned with stones or twigs Ø 3 - 6 mm	Several Resin Bees (<i>Chalicodoma</i> species)		Mud Wasps use clay to close their nests and provision their offspring with small invertebrates (for example caterpillars, spiders or crickets)	Cuckoo Wasp – a beautiful bee parasite	

Terry Langham. Photo Kloe Xu

Netherby Kindergarten Visit

Parents and children of the Netherby Kindy enjoyed their visit to the Arboretum on Sunday 13 September.



1: At the waterbird pond, 2: At the Paperbark, 3: Off to the Green Man, 4: Fascinated by the Bee Hotel. Photos Kloe Xu.



Crab or Flower spiders.



Crab Spider *Stephanopis* species.
Photo Mauricio Payan.

The tiny spider in the photograph was noticed by Lucas Videla and photographed by Mauricio Payan while they were carrying out tree measurements in the Arboretum.

Crab spiders, or flower spiders, are daytime ambush hunters, and can

be found in most parts of Australia. Many species have legs capable of moving sideways like a crab, hence their common name. They make more use of camouflage than other spiders and some species are able to change colour to match their background. They do not make webs but lie motionless until prey comes within reach. Often the crab spider remains for days, even weeks at the same spot. Their first two pairs of legs are longer and armed with strong spines which they use to catch and hold the prey while killing it with a poisonous

bite (not dangerous to humans) and sucking it dry.

Crab spiders belong to the family Thomisidae and there are three Australian subfamilies: Stephanopinae, Thomisinae and Bominiae.

Stephanopinae, such as the one in the photo, are dull coloured matching the bark where they live. The eyes are set on a common tubercle to the front of the cephalothorax. They often have extremely complex external body shapes to help with camouflage. In the wild they are almost impossible to see unless they move.

Most of the Thomisinae or flower spiders are brightly coloured and match the colour of the flower where they lie in wait for insect pollinators. They have eight eyes arranged in two rows of four, which they can rotate independently of each other.

Bominiae are tiny to small spiders without strong spines on the front legs and eyes in three rows.

Eileen Harvey

Sources:

<http://www.arachne.org.au/>

<http://ednieuw.home.xs4all.nl/australian/thomisidae/crabspiders.html>

Pyrus syriaca, Syrian Pear.

It is thought that the Pear genus, *Pyrus*, may have originated during the Tertiary period (66 million to 2.58 million years ago) in the mountainous regions of Western and Southern China. The Syrian Pear, *Pyrus syriaca*, is one of the main Pear species that is widely distributed in Palestine, Lebanon, Turkey, Iraq, Jordan, and Syria. It is considered to be one of the progenitors of the cultivated Pear.

There are three mature Syrian Pears in the Waite Arboretum, planted in 1967, 78 and 79. They are single-trunked, medium sized, deciduous trees. The leaves are soft, lanceolate and have finely toothed margins. The flower has 5 triangular sepals covered with fine hairs and five white, separate, round

petals. Flowers are about 2 cm in diameter. Colour is provided by the crimson anthers of the 20 - 30 stamens. There are 2 or 3 free styles leading to the inferior ovary.



The flowers are arranged in dense groups, in spherical aggregates of 4-12 flowers. Typically of Pears, the flowers' aroma is slightly unpleasant. Pear flowers need to be fertilised by pollen from a different tree for fruit to develop. Pollinators are usually insects; typically bees. The fruit is pear-shaped, green, and small (4 cm). When ripe the colour changes to yellow or brown. It is edible but contains hard "spots", which are sclereids, cells with thickened lignified walls. In a much reduced form these give the 'gritty' texture to cultivated pears.

The species is well adapted to our climate, being tolerant of drought, most soil types and sun or shade. It requires well-drained soil. The Syrian Pear is used for preparing a root-stock for grafting domesticated varieties.

Pear wood is considered especially good for carving and for making delicate and accurate drawing tools.

Eileen Harvey

Sources:

http://www.acgssr.org/BioTechnology/v7n2july2004/full_paper/020.pdf

<http://www.wildflowers.co.il/english/plant.asp?ID=84>

COLOURS OF THE "TOP END"

Helen and I have just returned from 8 weeks of a caravan holiday in the Northern Territory – spending most of our time in the "Top End". The weather was delightful and was an invitation to walk and see more of the natural environment. The timeslot - June to August - was in the middle of the dry season, and much of the scenery reflected that, with tall dry spear grass and controlled burning as normal scenery. The dry countryside emphasised the colour of some of the monsoonal species.

We started this 'botanical' experience at the Australian National Arid Lands Botanic Gardens at Port Augusta, where as usual many *Eremophila* were in flower. Further on, in the Olive Pink Botanic Gardens in Alice Springs, there too *Eremophila* were flowering, but what took my attention was a pair of



Christmas Tree Mulga

Mulgas (*Acacia aneura*) which showed a beautiful conical form. Such species are described as Christmas Tree Mulga, (*A. aneura* var. *conifera*) on page 285 of the book *Acacias of South Australia* by D.J.E. Whibley and D.F. Symon.

The Northern Territory has numerous species of *Corymbia*. Many Desert Bloodwoods (*Corymbia terminalis*) were flowering profusely on the Tablelands Highway heading towards Cape



Corymbia terminalis

Crawford. As they are relatively small trees it was easy to see the flowers formed in corymbs or crowns, in fact the flowers were all on the outside of the tree. These trees were quite eye-catching with their pale yellow-cream flowers and coloured bark.



Grevillea parallela



Grevillea pteridifolia

We were lucky enough to see four species of *Grevillea* in flower. The first was also in the Barkly Tableland Region, Narrow-leaved or Silver Beefwood

(*Grevillea parallela*), a tall graceful tree with narrow pendant foliage and striking pale yellow flowers. The most common species was Darwin Silky Oak (*G. pteridifolia*) with its bright orange flowers and darker green leaves. It is also a tall graceful tree and in places grows as small forests and is common closer to Darwin.



Grevillea dimidiata



Grevillea pyramidalis

At Elsie National Park we saw a lone specimen of Caustic Bush (*G. dimidiata*). The flowers were similar to those described above but pale lemon in colour, however the leaves were not typical but were large, broad and leathery and dull blue grey in colour. The fourth species, (*G. pyramidalis*) seen south of Tennant Creek was confusingly also commonly named Caustic Bush. It had very slender upright foliage and pale creamy white flowers. It is said that resin on the follicles of both these species can be caustic and cause burns to the skin. We also saw Beefwood (*G. striata*) around Alice Springs but they were not in flower.



Brachychiton paradoxum



Kapok Bush

Two plants of interest had similar growth forms, commonly growing to 1.5 metres and having a single stem and few twigs bearing single flowers, although they could form small well shaped trees to 3 metres. These were the Red-flowered Kurrajong (*Brachychiton paradoxum*) and the Kapok Bush (*Cochlospermum fraseri*). The bright red bell shaped flowers of the Kurrajong grow up to 4 cm and appear before the leaves and on the hard woody stems. The flowers of the Kapok Bush are also quite large, up to 8 cm, and are usually seen without leaves on the plant. The fruit of the Kapok Bush form woody capsules which release a cotton wool.

We visited the Botanic Gardens in Darwin and saw three oddities. The first was a very large fat carpet python lying on a branch of a spreading Fig tree, the second was a very wide African Baobab (*Adansonia digitata*) and the third was a Cannonball tree

(*Couroupita guianensis*) native to Central America. The tree had a number of large hard spherical fruit – the cannon balls, but the most beautiful aspect of the tree was the flowers growing close to the trunk and the ground.



Cannonball tree flower



Calytrix extipulata

However, the most lasting impression we will have is of the Turkey Bushes (*Calytrix extipulata*) growing over hundreds of kilometre's of roadside verge. They varied from less than a metre to nearly 4 metres in height and always seemed to

be in full flower. The photographed example is from the entry road to Litchfield Park.

While staying at Elsie National Park, we discovered a planned "Botanic Walk" which was well signposted and displayed many plants of the tropic forests. One of the delights of this walk was the amazing number of butterflies which rose into the air as we walked, while the most significant tree was the aptly named Mataranka Palm, (*Livistona rigida*). This beautiful palm is a riparian species, limited to the banks of the Roper River to the east of Mataranka and also reported in some of the streams off the Gulf of Carpentaria and in the Lawn Hill National Park in north western Queensland. Young specimens of this palm have beautiful reddish foliage.



I have always admired the beauty of the Bismarckia Palm (*Bismarckia nobilis*) in the Palm House in the Adelaide Botanic Gardens but I was surprised to see so many growing as garden plants in the "Top End".



The one in the photo was part of the garden and swimming pool in the 'Shady Lane Caravan Park' in Katherine.

Although we had seen many Ghost Gums (*Corymbia apparrerinja*) in our travels, I remember seeing the specimen in



Trephina Gorge from many years ago. So we took a detour from Alice Springs on our way home to revisit this iconic tree in the East MacDonnell Ranges. It still captures one's attention and it must be one of the most photographed trees in Australia – rightly so!



On our way back to Adelaide (mid August) and trying to delay the cold weather, we decided to detour and revisit Roxby Downs and Andamooka. What a decision! Some 30 kilometres south of Roxby Downs, there were cars parked on both sides of the road. On a flat area between the sand dunes was an amazing sight. I estimate more than an hectare of Sturt's Desert Pea (*Swainsonia formosa*) was visible. Local people claimed it to be the best season for many years. I was interested to note that most of the flowers were facing in the same



direction – north east. There was also a cluster of brightly coloured Wild Hops, more correctly Ruby or Rosy Dock (*Rumex vesicarius*) which added even more colour to our detour.

Now we are home and the dominant colour is grey and the temperature is less than 30.

Ron Allen

Photos Ron Allen

Rainfall at the Arboretum



The recently completed new weather station at the Waite Campus. Photo Wayne Harvey

Friends of the Arboretum often hear reference to the Arboretum's approach to supplementary watering of trees. Once established, the trees are entirely dependent on the local, seasonal rainfall pattern.

Adelaide's climate is classified under the international Köppen system as Mediterranean, i.e. it is characterised by dry hot summers and wet cool winters, with intermediary conditions separating the two extremes. One of the reasons for not watering adult trees in the Arboretum is to see how diverse species perform in our local climate, providing the community with some guidance on selecting tree species for private gardens and public places.

Knowing about the local weather conditions is an important component of that aim.

Weather observations have been collected at the Waite since 1925. Early observations were the responsibility of the Australian Government's Bureau of Meteorology and the Waite was one of the official government stations contributing data to the national weather observations. However, the

Bureau ceased collecting data from the Waite weather station in January 2000 and the University of Adelaide took on the responsibility for the weather station and the collection of all weather observations.

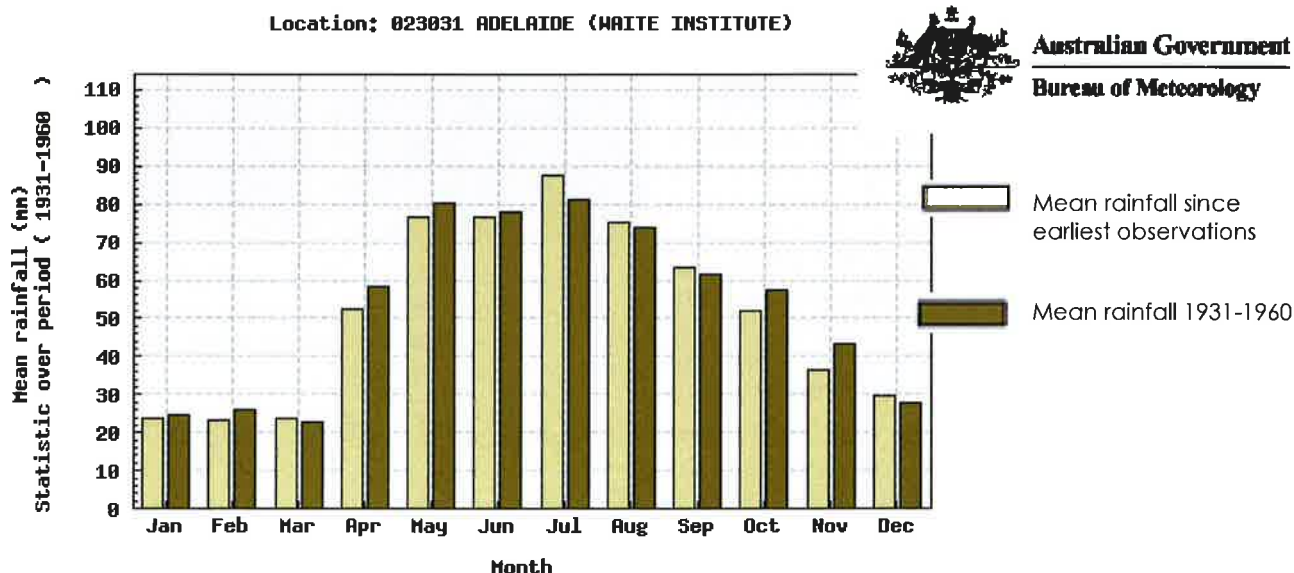
The earlier Stevenson Screen containing standard weather measuring devices was located to the North of Urrbrae House, just outside the Arboretum boundary. This system has now replaced with an array of instruments installed on the same site to measure local weather conditions.

The rainfall data collected at the Waite since 1925 shows a regular pattern of low rainfall levels in January, February and March, with a sudden increase in rainfall in April, May and June before a gradual lowering again from July to December. The graph shows monthly rainfall patterns from 1931 to 1960. Total annual rainfall at the Waite is around 620 mm. Any variation from this pattern is note-worthy to us, and we often comment on dry winters or wet summers. The pattern in 1999, for example, was erratic with a dry April, July and August but a very wet May. Arboretum trees need to tolerate these variations in the annual pattern.

The rainfall patterns at the Waite can also influence the spread of annual weeds, such as caltrop (*Tribulus terrestris*) and bindii (*Emex australis*), in the Arboretum.

The Waite now holds around 90 years of weather data collected from the instruments located adjacent to the Arboretum. Future observations may show changes in extremes of rainfall and temperature as any significant climate change becomes more apparent.

Wayne Harvey



PANGARINDA ARBORETUM

A woodturning friend of mine is a member of the Murrayland Woodturners, based in Murray Bridge. He is also works as a volunteer at the Pangarinda Arboretum between Wellington and Tailem Bend and through this contact I was able to experience the delight of visiting this wonderful reserve. It is situated on 30 hectares of Crown Lands and is described by the volunteers as "Our Best Kept Secret". My visit was in mid April following the Easter holiday period and, in spite of the volunteers' protestations about this not being the best time to visit, there were many plants in colourful flower.



Beaufortia squarrosa

There are two entrances to the Arboretum, the lower one is off the Wellington to Tailem Bend Road. This is probably the older part of the Arboretum, and the plants are well labelled. Those that

took my fancy included *Correa glabra*, *Crocea* 'Festival' and *Beaufortia squarrosa*, a colourful flowering shrub with which I was unfamiliar.



Eucalyptus erythrocorys (L), *Eucalyptus tetraptera* (R)

There were two eucalypts which certainly attracted attention. One was the spectacular Illyarie (*Eucalyptus erythrocorys*), erythro from Greek, erythro red and korys, helmet, referring to the brilliant red operculum which makes it one of the most striking of the eucalypts. When the bright red operculum (cap) falls off, the most brilliant yellow flower appears. The other eucalypt of interest was the Square-fruited Mallee, *Eucalyptus tetraptera*, with its large square fruit.



In newly planted areas were two grevilleas (unlabelled) with large cream to yellow flowers and a beautiful *Verticordia grandis*, which

Verticordia grandis



was flourishing in the sandy soil.

On the western boundary of the Arboretum is a pedestrian entrance and a shelter shed, table and information

board. This area contains many different species of *Banksia*, some images of which are below.



Grevillea sp.



1, 2, 3, 4 *Banksia* sp.



The volunteers suggested that September was the best time to visit. I recommend it as an interesting and pleasant experience.

Ron Allen

<http://www.murrayriver.com.au/wellington/pangarinda-arboretum/>

SPRING IN THE ARBORETUM



Poncirus trifoliata, Trifoliate Orange has white, cup-shaped fragrant flowers, alternate compound leaves and sturdy, sharp thorns. Origin China.



Ungnadia speciosa, Mexican Buckeye has small pink flowers simultaneously with last year's three valved capsule containing shiny black seeds. Origin Texas, Mexico.



The native habitat of *Melaleuca elliptica*, Granite Honey Myrtle is normally sunny sites on granite outcrops in southern WA.



Prunus lyonii, Catalina Cherry has spikes of small white flowers and sour, red, cherry-like fruits. Native to southern California's Channel Islands.



Ulmus x hollandica, Dutch Elm. The wind-dispersed fruit is a round samara flushed with chlorophyll, facilitating photosynthesis before the leaves emerge. Origin hybrid.



Tamarix aphylla, Athel Pine is a listed Weed of National Significance because of its invasiveness, potential for spread, and economic and environmental impacts in arid Australia. Origin NE Africa, W Asia.



Arbutus andrachne, Oriental Strawberry Tree has lily-of-the-valley like flowers and small non-edible berries and cinnamon-coloured bark sheds annually. Origin E Medit.



Cercis occidentalis, California Redbud (above and top) is a deciduous flowering shrub. Small clusters of pea flowers appear before the leaves. Each flower has 5 petals that range in colour from pink to reddish purple. Origin California.



Eriobotrya deflexa, Bronze Loquat. Fragrant white flowers are followed by small, inedible fruits. Origin Taiwan.



Pyrus betulifolia x calleryana 'Edgewood'. Pink buds open to white flowers with pink anthers on long styles. Small fruit, red to purple autumn foliage. Origin cultivar.