

NEWSLETTER

WINTER 2016

NUMBER 88

FRIENDS OF THE WAITE ARBORETUM INC.

www.communitywebs.org/friendsfowaitearboretum

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

17th Treenet Symposium

Thursday September 1,

registration at the Wine Centre

Friday September 2, Field Day
in the Waite Arboretum

WHAT'S ON AT URRBRAE HOUSE

Monday August 8 at 5.30 pm

Piano recital Marija Bajalica

Cost \$20. Bookings essential.

Enquiries: 8277 1426

Tuesday August 9 at 2.30 pm

Afternoon tea and Illustrated

Talk by Eileen Harvey : *Plant
hunting and other diversions.*

Cost \$10, pay at the door.

Enquiries to Beth Johnstone

Tel 8357 1679

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

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Erica Boyle, Dr Jennifer Gardner (ex officio)

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Photography: Eileen Harvey



Eucalyptus incerta, Mount Day Mallee. Origin WA

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FROM THE PRESIDENT

It seems no time since we had our Annual General Meeting and were absorbed in listening to Viesturs Cielens' stories, pictures and poems about gardens created by some special women of South Australia. The feedback given in response was very positive and we are very grateful to Viesturs for his continued interest in the Arboretum and Gardens. He was very generous to the committee through his donation of a percentage of sales of Anne Latreille's book *Garden Voices*.

We said 'thank you and farewell' to both Henry Krichauff and Norma Lee at this Annual General meeting as they had reached the time limits for service on the committee. We welcomed a new member, Erica Boyle, who has become part of the staff at the Waite Precinct as Arboretum Officer and Volunteer Coordinator.

Honorary Life membership was awarded to Marion Wells, Henry Krichauff and Mary Tester for their donations of time and skill. Mary Tester had been a foundation member of the Friends committee as well as being an Arboretum Guide and willing volunteer. The committee has been very well served by all of those who have been so generous with their time and skills over the twenty two years of its existence.

Volunteers and the members of the Friends committee celebrated with the Curator, Dr Jennifer Gardner the thirtieth anniversary of her time at Waite on 5th May. It was an occasion for stories of 'remember when' and served well as an opportunity for lots of friendly chatter.

One of the events celebrated recently was the opening of the completed rose garden ponds, replacing the removed fountain with a refurbishment of the three ponds. This was done with funds supplied from a grant from the Rose Society and supplemented from funds raised by the Friends committee. The ponds now have beautiful stainless steel covers, cleverly designed and made by Silvio Apponyi.

To date our plans for a combined Film Event with Friends of Urrbrae House have been thwarted by the failure to find a suitable film. We hope to rectify this soon.

Several members of the committee attended a meeting of the Historical Society of South Australia held at Burnside Community Centre Friday 1st July. The talk was given by Dr Geoffrey Bishop who is the custodian of Dr David Symon's notes and papers on Dragon Trees. His talk was entitled 'There's a dragon in my garden! The heritage of Dragon Trees in South Australia.' As the Arboretum uses the tree as a logo, it was very interesting to hear stories of the tree in South Australia and to see photographs of the different trees.

Beth Johnstone



Opening of the Rose Garden Ponds. Photos Erica Boyle



IN THE ARBORETUM - FROM THE CURATOR

Welcome to new team members

I warmly welcome two new members to the Waite Arboretum team: Erica Boyle and Dr Kate Delaporte.

Erica has been an invaluable volunteer since March 2015 when she joined the Tuesday morning gardening group and a couple of weeks later formed the Friday tree survey team with Mauricio Payan. In May some funding became available until the end of this year for a part-time Arboretum Officer. Erica was offered the position and commenced immediately. Her role includes Volunteer Coordinator to supervise the garden and Arboretum volunteers and maintain all the records relating to volunteers in those areas as well as those in the Waite Conservation Reserve. Her other duties are to be the first point of contact for visitors, provide administrative assistance to the Curator, take bookings for guided tours, develop promotional brochures and fliers, maintain the Arboretum website, develop social media (Facebook, Twitter, Instagram) to engage a wider audience, provide assistance to both Friends of the Arboretum and Reserve for events and other activities and continue her data collection in the Arboretum – all in just 11 hours a week! Erica has also joined the FWA Committee. She will be sharing the office next to the Arboretum office in Urrbrae House on Tuesdays after 1 pm and on Fridays.

Kate will be Acting Curator of the Arboretum and Manager of the Waite Conservation Reserve when I am on long service leave for much of the second half of this year. She will already be known to many of the Friends following her presentation to the Friends on her ornamental eucalypt development program and tour of her experimental eucalypt plantation (adjoining the Arboretum along Cross Road). Her position is 22 hours a week and she will be based in the Arboretum office for part of most days as well as separately pursuing her other research projects.

Urrbrae House Gardens

On 24th May the garden volunteers, Friends and invited guests celebrated the refurbishment of the 20th Century Rose Garden ponds followed by morning tea in Urrbrae House. The intricate and elegant stainless steel safety grates designed and made by well-known sculptor Silvio Apponyi were much admired as was the new capping of Kanmantoo stone. Silvio, Landscape Designer Viesturs Cielens and FWA President Beth Johnstone spoke and the grants from the FWA and the Rose Society of SA were gratefully acknowledged.

In collaboration with Viesturs Cielens, Maureen Ross



Pond with Kanmantoo stone capping. Photo Meg Butler

of Ross Roses, Trish Frith and other members of the Heritage Rose Society a concept is being developed for the Sun Garden on the south side of Urrbrae House. The plan is to gradually establish new Memory Roses plantings to replace the many decades-old fragmented rose beds with a much more sustainable and attractive arrangement, a central level area for a marquee, paths to improve equity of access and a feature to link the Sun Garden with the Garden of Discovery. The Sun Garden will be the fourth and last of the major thematic gardens envisaged in the original Master Plan (1994) to be developed and will require major fund-raising efforts and sponsorship to implement.

The Mediterranean Garden Society



MGS working bee June 19. Photo Jennifer Gardner

The Mediterranean Garden Society held their second working bee in the Garden of Discovery in mid June. After good autumn rains, the luxuriant growth of shrubs and grasses was tamed and new specimens planted. The hard work of this enthusiastic group is much appreciated. Members enjoyed camaraderie and morning tea as they planned the next working bee in August.

Arboretum activities

Planting began with a fine Wollemi pine specimen generously donated by foundation member of the FWA Beryl Martin. Since then, two more Wollemi's have been offered to the Arboretum, one from Max Ewer who has donated many specimens to our Hakea collection.

I continue to promote the use of the Arboretum for teaching so that the young generations discover the Arboretum. Recent practical sessions include University of Adelaide (Soil science & Entomology), Flinders University (Plant Taxonomy and Systematics), Uni SA (Invertebrate Taxonomy) and Urrbrae TAFE (Land Management & Conservation - GPS practical).

Transitioning the Waite Arboretum App from stand-alone on a device, to web-based has been completed. This will enable continuous updating and addition of more themed walks, images and fields without the need to issue new versions. New fields include height of every specimen and canopy extent (shade). Download the App and use it to explore the Arboretum.

i-Tree Eco

Many of the recognised benefits of trees in the urban environment such as aesthetics, improvement of general health, wellbeing and social behaviour, and provision of habitat for wildlife are difficult to quantify. An exciting project on which my colleague Marian McDuie and I have been collaborating is to *quantify* some of the environmental benefits of the Arboretum trees. i-Tree Eco v6 is a free, state-of-the art, peer-reviewed software suite developed in the USA by the USDA Forest Service and numerous co-operators, and now being used around the world. Recently it has been tailored specifically to suit Australian and Canadian growing conditions.

i-Tree uses standardized field data and local air pollution and meteorological data to quantify the forest structure, environmental effects and values (<https://www.itreetools.org/about.php>). Over the past 15 months, the Arboretum field survey team led by Erica Boyle has been collecting data on each Arboretum specimen. The data collection requires meticulous recording and the higher the level of detail the more accurate the results of analysis. Our measurements include trunk diameter(s) at 1.3 m, height to crown base, % crown missing, % crown dieback and crown light exposure. Tree height and canopy extent were obtained from our high resolution aerial image. Erica has been assisted over that time first by Mauricio Payan then Khloe Xu, Gloria, Lucas Videla, Georgia Zhou, Erik Stockhausen and Muriel Ehbar.

The majority of substantial trees now have been surveyed. The software also requires a species code

for every specimen. There is an i-Tree library of codes, but many of the Arboretum species have yet to be assigned a code which relates to the growth data of each species, so Erica, Marian and myself, using reference books and features such as habit, natural distribution, and leaf size and form, look for the best match of our species to another which does have a code. This is a very time consuming task and we still have a way to go on this (volunteers welcome!).

We have recently run our first analysis on nearly 800 Arboretum trees with both field data and i-Tree codes. Environmental benefits quantified for each tree include: annual air pollution removal (NO₂, O₃, CO, particulate matter), carbon storage and sequestration, oxygen production, and avoided runoff and assigns a \$ value to each of these environmental values. i-Tree also calculates for each tree a structural value defined as the cost of having to replace that tree with a similar specimen. All our results will eventually be published on open data but a summary analysis of the first 800 specimens indicate: Canopy cover ~17 hectares providing 0.6 km² of leaf area; Air pollution removal – (mainly O₃ and NO₂) 1 tonne/year (\$625); Carbon storage 924 tonnes (\$21,000); Carbon sequestration 26 tonnes/year (\$588); Oxygen production 69 tonnes/year; Avoided runoff 904 m³/year (\$2,000); and a Structural (replacement) value of \$9.5 million.

Afternoon tea

Finally I would like to record my heartfelt thanks to the Friends for the memorable afternoon tea celebrating my 30 years as Curator of the Arboretum, especially to Beth Johnstone, Marilyn Gilbertson and all the others who organised wonderful food including the Dragon Tree cake. It was lovely to see Anna Cox and Isabella Rawnsley two of the inaugural Arboretum guides who founded the Friends, and Beryl Martin whose exhibitions raised awareness of the Arboretum and generated tens of thousands of dollars for the Friends of the Arboretum.

It is a privilege for me to work at The Waite, not only for the physical beauty of the Arboretum, Gardens and Conservation Reserve, and having a job that I love which is stimulating, satisfying, at times challenging and always varied, but also for the wonderful people with whom I interact daily – my colleagues on staff, volunteers and visitors. I am very grateful for the support of the Friends of the Waite Arboretum, Friends of the Waite Conservation Reserve and the many community groups which contribute their time, effort, plants and funds to conserve, restore, develop and maintain our rich natural environments for study, teaching and the enjoyment of the public.

Jennifer Gardner

Welcome to two new staff members



Kate Delaporte and Erica Boyle. Photo Jennifer Gardner.

Kate Delaporte

Dr Kate Delaporte graduated from University of Adelaide with a BAgSc (Hons) 1992-95 and a Doctorate of Philosophy 1996-2000. Kate has amassed over 20 years of experience in the research and development of ornamental eucalypts and has a special focus on the development on new and novel plant crops. Kate was the 3rd Playford Trust Horticulture Scholar (1996-2000) and awarded a Churchill Fellowship (1999) to research the development of Australian plants overseas (Mediterranean climates: France, Italy and California).

In 2011, Kate was selected as a Board member of the Playford Trust, a position that enables her to participate in the selection and mentoring of new scholarship and award winners at University and TAFE level. She regularly presents to the South Australian plant community, TAFE and university students on her work, and publishes in industry and peer-reviewed publications. Kate has studied and worked at The Waite for over 20 years, establishing her Eucalypt research field site near the northern Arboretum, and has a deep love for the site and the Arboretum; it is her "home". She is very much looking forward to becoming more acquainted with the Arboretum and the Friends.

Erica Boyle

Erica moved with her husband and her three children in 2014 from the city of Azul, Argentina, in the middle of the Pampas. She used to live in her house surrounded by dozens of hundred-year-old *Eucalyptus camaldulensis*, lots of yellow-flowered beautiful acacias among other sorts of plants she grew from seeds or cuttings and planted in her one-hectare garden.

In Argentina she studied Agronomy and was awarded a Diploma in Intensive Vegetable

Production. Complementarily she attended many courses about plant growing as well as medicinal and aromatic plants.

She lived for two years in the City of Fukuoka, Japan where she studied Japanese and, through the plants, she made beautiful friends by engaging in Ikebana (Japanese flower arrangements).

On arrival in Adelaide she initially studied English at TAFE two years. It was as part of one of those courses' activities she discovered the Urrbrae House Gardens and after contacting Dr Jennifer Gardner Erica started volunteering with the Tuesday's gardens volunteers. Again, it was through plants, she met beautiful people. In addition to this she started field data collection in the Arboretum and was an initial member of the tree measurement group. Because of this, once a week, she dedicates her time to hug trees (to get their diameter!).



Lucas Videla and Erica Boyle measuring trees in the Arboretum. Photo Lynette Zeitz

It is Waite Arboretum's special energy that made Erica feel very fortunate in such a magnificent environment. After fifteen months volunteering at Waite, Erica was offered a contract by the University of Adelaide now works on Tuesdays and Fridays as an Arboretum Officer and Volunteer Coordinator.

Currently she also attends Certificate III in Conservation and Land Management at TAFE Urrbrae Campus and volunteers with the Environment Team at City of Playford.

Erica feels blessed for the chance to work in the Waite "paradise", as she says, surrounded by amazingly kind people and managed by a lovely and pro active person such as Dr Jennifer Gardner.

FRIENDS OF THE WAITE ARBORETUM NEWS

Thirty Years as Curator



On 5th May a special afternoon tea was held in Urrbrae House to celebrate Dr Jennifer Gardner's thirty years as Curator at Waite. There had been some thirty apologies because of the many volunteers and people, who had served in various ways with her, wanted to congratulate her on this milestone.



The Friends of the Waite Arboretum had obtained a 'Dragon Tree' cake for this occasion and Jennifer who enjoyed the experience of meeting and greeting the many people present, cut this.



Ron Allen, a member of the committee, presented Jennifer with a very special bowl made with wood from the Arboretum, while Peter Bird spoke of the deep appreciation of those workers from the Waite Conservation Reserve.

The President of the organizing committee, Beth Johnstone put her accolades to Jennifer in verse that ended thus:

*So we wish her well for these thirty years
and the years ahead, coming still.
She will not slow down,
but can wear her crown of community goodwill.
Many stand in awe of her tenacity,
and admire her perspicacity.
Those of us who share this space are grateful for
her strategy.*

Beth Johnstone



Above and left, photos Brian Richardson



Jennifer and Beryl Martin. Photo Lynette Zeitz

Aleksandr Tsiboulski Guitar Concert

"Tsiboulski is little short of a magician [...] producing astonishing varieties of tone from the lute-like early music to virtuoso feats of contemporary dexterity . ." (The Advertiser, Adelaide)



Aleksandr Tsiboulski at the concert. Photo Jennifer Gardner

Friends of the Waite Arboretum organized a special concert in the drawing Room of Urrbrae House Thursday 2nd June to provide an opportunity for Aleksandr Tsiboulski to once more connect to his beginnings as a performance artist.

Aleksandr is a Ukraine-born, Australia-based guitarist who began his career playing a concert in the drawing room at Urrbrae House some twenty years ago. He is a superb guitarist and the winner of twelve international competitions as well as being the recipient of numerous honours and awards. He was the Australian-American Fulbright Scholar in the Visual and Performing Arts.

The programme comprised a range of music that gave an indication of the skill possessed by Alex. Although it was a wet, cold evening quite a number of people turned up to enjoy this special experience, despite the gate to Claremont Avenue being unexpectedly closed off.

Beth Johnstone

Your best photos please!

Jennifer Gardner would like to build a library of high resolution images of the Arboretum which could be used in publicity material, for the Waite Arboretum app, displays and so on.

As well as general views of the Arboretum landscape, Jennifer would like photos of flowers, fruit, autumn colour, statuary, wildlife and scenes of people participating in Arboretum activities or just enjoying being there.

Photos should be at least 3MB. Please email your photos to: arboretum@adelaide.edu.au

NEW MEMBERS

We warmly welcome the following new members:

Mrs Pamela and Ms Jennie McArthur, Parkside.

Farewell to dedicated garden volunteer



Jane MacDonald and Jennifer. Photo Erica Boyle

Jane MacDonald is reluctantly retiring after 7 years as a dedicated, hard-working garden volunteer . She was thanked at the Tuesday morning tea and told how much she will be missed by the Tuesday garden group.

Jennifer Gardner

Tree Hollows

Trees with hollows and the animals that depend on them are disappearing. Natural tree hollows are valuable and often essential for many wildlife species. They provide refuge from the weather and predators, and safe sites for roosting and breeding. Destroying living or dead hollow-bearing trees displaces or kills wildlife dependant on those hollows. Only old trees have hollows. As they fall and die or are logged or cleared, they can not be replaced without 100 or more years of growth, maturity and decay.

As trees age over time, they are subject to various natural forces such as wind, heat, fire, lightning, rain and attack from insects such as termites and beetles, fungi, bacteria and so on. Whilst the external, living part of the tree may remain healthy, injuries to the protective inner bark may allow the entry of fungi (which can cause wood decay) and chewing insects such as termites. Termites usually enter trees at points where fungal wood decay has already started.

Fire can contribute to the initial cause of injuries and the creation of hollows in trees. An intense fire or an area that has been subject to repeated burns can lead to a shortage of hollows for wildlife but can also assist in the process of hollow formation.

Wildlife will also renovate the hollow using beaks, teeth or claws. Eucalypts usually shed their lower branches as they grow (self prune) exposing the point of branch attachment. These openings may eventually develop into hollows.

Generally, small hollows with narrow entrances suitable for small animals such as the brush-tailed phascogale (small carnivorous marsupial) and the eastern pygmy-possum take about 100 years to form. Hollows of a medium size and suitable for parrots will take around 200 years to form, and the larger and deeper hollows occupied by glossy black cockatoos and larger masked owls can take a lot longer.

Most species of eucalypts and other long-lived trees produce hollows. In general, gums and boxes tend to produce hollows more readily than stringy barks and ashes. River Red Gum (*Eucalyptus camaldulensis*) is a well known hollow producer. Manna Gum (*Eucalyptus viminalis*), Mountain Grey Gum (*Eucalyptus cypellocarpa*) and Yellow Box (*Eucalyptus melliodora*) also. Many introduced trees such as willows, pines and conifers do not produce suitable hollows for native wildlife.

In Australia many native vertebrate and invertebrate species use tree hollows. In south east Australia this includes an estimated 17% of bird species, 42% of mammals and 28% of reptiles. They include bats, possums, gliders, owls, parrots, antechinus, ducks, rosellas and kingfishers as well as numerous species

of snakes, frogs and skinks. Some introduced species also use hollows and compete with native wildlife for available hollows. This reduces shelter, roosting and breeding sites for many native species. Hollows must be within reach of suitable food sources to be of value.



Eastern Rosella in tree with created nest hollow in northwest Arboretum.



Rainbow Lorikeet in Sugar Gum. Photos Jennifer Gardner.

Many animals will choose a hollow for a nest site that will provide protection from potential predators. Mammals such as the brown antechinus or the sugar glider will choose a hollow with a narrow entrance that will restrict predator access.

Some native fish use submerged hollow logs in streams for shelter and to attach their eggs. Crevices under bark are used by lizards, frogs and invertebrates. Many species that are not considered hollow-dependent still utilise

hollows e.g. echidnas may shelter in a burnt out hollow at the base of a tree.

You can find tree hollows in various places in the Arboretum and observe the range of creatures using them. There are numerous hollows in the old Sugar Gums (*Eucalyptus cladocalyx*) lining the lower part of Walter Young Avenue and these are favoured by parrots, lorikeets and galahs. Other good places to look for hollows and their inhabitants are the larger gums in the area below the dry rainforest alongside Claremont Avenue and the old trees in the Grey Box revegetation area in the north-west corner of the Arboretum.

At several Treenet Symposia arborists demonstrated the construction of artificial nest hollows in dead branches in the old gums near Claremont Avenue and in Grey Box revegetation area and logs with artificially created hollows were submerged in the pond near the parking area. As well as birds, possums and reptiles you may see droppings of the insect-eating micro bats which roost under bark or in small cavities in old trees.

Graham Bald

Ref: <http://www.environment.nsw.gov.au/resources/nature/Factsheet5TreeHollows.pdf>

Waite Arboretum Seats: History Walk Fact Sheets Project

There are 63 seats spread over the Waite Historic Precinct including the Waite Arboretum, Urrbrae House Gardens, Garden of Discovery and the Twentieth Century Rose Garden.

Many seats have been installed as memorial seats in memory of former staff members of the Waite Institute. A number of seats are in memory of past admirers, supporters and recreational users of the Arboretum. Other seats have been donated by people with existing connections to the Arboretum as either staff, volunteers, and or community members who have a fondness and appreciation of the Arboretum.



Mary Jacobs seat. Nearby tree species: #55 *Eucalyptus loxophleba* Benth, York Gum MYRTACEAE, W. A. 1940. Photo Terry Langham

A collection of fact sheets on the 'garden' seats of the Waite Historic Precinct is being created as a record of the seats which could be used as a guide for walks in the Arboretum such as a history walk. Each fact sheet will include ID numbers, text, and images of a nearby tree and or plant species. Additionally there will be text and images and stories (where possible) of the people whose names appear on the nameplates that are on each one of the seats.

There will be approximately 72 fact sheets that describe the 63 seats, a fact sheet on Peter Waite with his dog 'Shrimp' and 8 fact sheets from the two 2001 Denise Schumann's metal books located in the Garden of Discovery. The books are *Girls with Grit: Women Scientist at the Waite Institute 1925 – 1945* and *Collaborations: Understanding the Australian Environment*.

Some stories are just a few words of appreciation taken from a seat nameplate. For example:

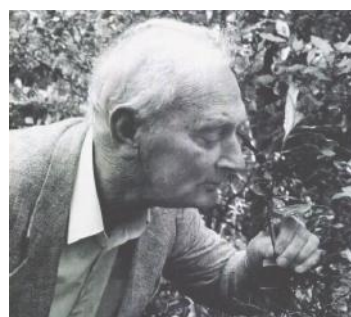
'As a thank you for many pleasant hours exploring the beautiful Waite Arboretum' (the Chambers seat)

Other stories are about how people came to work at the Waite Institute and their working lives. Also there are stories of individuals and community associations that have connections and appreciation of the Waite Arboretum in the past and the present.



The Coolabah Club Seat 1959 - 2002. Photo Terry Langham

For example, The Coolabah Club was formed in 1959 by a number of farmers who heard a lecture from Waite Arboretum Curator David Symon in 1957 on the use of trees on farms. (Michelmores & Michelmores 1991 in Barker, 2013).



Professor Peter Martin seat is on the left side of Elm Avenue from Walter Young Drive and faces west. Nearby is #241 *Brachychiton populneus* ssp. *populneus*. Kurrajong. NSW, Qld 1928.

Professor Peter Martin with roses. Photo The University of Adelaide

To date information for the text and images has been acquired by public sources: the web, libraries etc. Should any one wish to provide information: text and or images and would like detailed references for this article please contact me.

Email: terrytpot@hotmail.com, phone: (08) 8379 9302, mobile: 0459 091 777.

Waite Arboretum Seat Maintenance.

There are 63 seats (including 5 seat and table settings) in the Historic Waite Precinct areas. The number of seats in the Arboretum is partly governed by the capacity to maintain ongoing maintenance of the seats. The seats are at the mercy of environmental conditions, especially the hot South Australia summers. The 'varnish' on the seats weathers and fade over time. The care and management of the seats requires ongoing labour and material costs. In the past the Arboretum has been very fortunate to have volunteers to 're-varnish and care for the seats.

The Waite Arboretum is in need of volunteers who would like to participate in re-varnishing and caring of the timber seats.

To register your interest please contact Erica Boyle at arboretum@adelaide.edu.au

Terry Langham

Celtis Africana White Stinkwood



Celtis africana #741 in November.
Photo Jennifer Gardner

Celtis africana is a deciduous to semi-deciduous tree in the family Cannabaceae, or possibly in the family Celtidaceae, taxonomists have not reached a consensus. The White Stinkwood is widespread and common in southern Africa and also occurs in Yemen. *C. africana* is commonly known as White Stinkwood, because of the unpleasant smell of the freshly cut wood, and its pale colour.

Depending on the environment and conditions White Stinkwood can take the form of a large tree (up to 25 m in forests) or in poor, dry, rocky soil it can grow as a bonsai-like shrub. There are two *Celtis africana* in the Arboretum, one planted in 1970 and the other a year later. They grow as medium sized deciduous trees in our conditions.



The leaves are simple, alternate, ovate to acuminate in shape with three distinct veins from the base. The leaf margin is slightly toothed or serrate

towards the apex, while the basal third tends to be entire. The new leaves are bright, fresh green and hairy on the upper surface; they turn darker green and become smoother as they mature. In Africa *Celtis africana* leaves are browsed by buck, cattle and goats, and are food for the larvae of the long-nosed butterfly. The dry, shed leaves are also eaten by wild life and stock.

The trunk of *Celtis africana* is distinctive with its smooth, pale grey to white bark. It sometimes has horizontal ridges as our Arboretum specimens do.



Celtis africana #752 in June.

The flowers appear in spring and are small, greenish, star-like and inconspicuous. Separate male and female flowers are produced on the same tree. Male flowers are in dense clusters at the base of new branchlets and female flowers are solitary or in groups of 2 to 3 in the leaf axils. The flowers are pollinated by bees. Masses of small (5 mm), rounded, berry-like fruits on 1-2 cm long stalks follow the flowers, in late spring to mid summer. They ripen to a yellow-brown to black colour. In their native habitat many birds like willow warblers, black-eyed bulbuls, mousebirds and crested barbets feed on the fruits and disperse the seeds.

The wood of *Celtis africana* is white to yellowish in colour and of medium hardness. It is tough and strong, and polishes well, but is difficult to work. It is a good general timber suitable for making planks, shelving, yokes, tent-bows and furniture. The African people have always used it to make a variety of household articles.

This tree is revered as having magical, spiritual powers by some African cultures. It is said to offer protection from negative forces and to bestow fertility. Strips of the bark, hung within the home, are reputed to deter snakes. In traditional medicine the wood is mixed with crocodile fat as a charm against lightning, and many people believe that it has the power over evil and that pegs of wood driven into the ground will keep witches away.

Celtis africana is fast growing and adaptable. It is fairly drought resistant and can withstand frost. It is a popular and successful tree in South Africa where it is planted in large gardens and parks, and it has also proved to be a suitable street and avenue tree. In Capetown *Celtis africana* were planted as shade trees in the visitors' car park at Kirstenbosch Botanic Garden and before long they were providing shade and softening the hard, hot expanse of paving.

Eileen Harvey

Van Wyk, B., Van Wyk, P. & Van Wyk, B-E. 2008.
Photographic guide to the trees of southern Africa.
www.plantzafrica.com

***Diospyros dichrophylla*, Monkey Apple**



Diospyros dichrophylla #805 planted 1930

Diospyros dichrophylla, Family Ebenaceae, is one of the approximately 20 species of *Diospyros* native to southern Africa. It grows in a wide coastal belt mostly in the eastern Cape in the summer rainfall areas. It can tolerate some frost and, although it grows best with higher rainfall, it is quite drought resistant.

The generic name, *Diospyros*, comes from two Greek words, 'dios' and 'pyros', meaning food of the gods. The specific name, *dichrophylla*, refers to the bicoloured leaves, glossy dark green on the front and pale green on the back. Its common name is Poison Star-apple or Monkey Apple. It was cultivated in at the Cape in South Africa by the Dutch East India Company as early as 1815 and was known in gardens of Europe even earlier than that.

Diospyros dichrophylla, is a rather slow-growing shrub or small tree and can be single or multi-stemmed with branches that grow vertically to form a dense canopy. It has grey to brown smooth or wrinkled bark. New growth is covered in soft brownish hairs. The oval leaves are leathery and glossy above and paler below. The margin is often tightly rolled under, entire and not wavy. The central vein is raised below.



The Monkey Apple flowers in summer with the male and female flowers carried on separate trees. The small creamy white flowers are bell shaped and drooping. The prominent 5-lobed calyx and petals curl backwards.



The fruit ripens in autumn and is a round slightly flattened berry up to 25 mm in diameter covered with dense orange-yellow velvety hairs. The persistent calyx has 5 narrow lobes that usually curve backwards. The fruit's clear, jelly-like pulp holds from 3 to 8 dark, shiny brown seeds.



The fruit is said to be poisonous to humans which is surprising as it is closely related to the Persimmon (*Diospyros kaki*) and ripe fruits from this genus are quite tasty and edible, although green fruits are rich in tannins and unpleasantly astringent.

The flowers are pollinated by insects and the fruit is eaten by birds. The wood is hard and black but has no commercial value. *Diospyros dichrophylla*, can be trimmed for hedging or grown as a decorative garden plant, with the female tree bearing masses of yellowish fruit in autumn.

Eileen Harvey

Sources:

Coates Palgrave, M. 1990. Keith Coates Palgrave Trees of southern Africa, second revised edition. Struik, Cape Town.
www.plantzafrica.com

WINTER IN THE ARBORETUM



Eucalyptus 'Urrbrae Gem' was discovered at the Waite Arboretum in 1956. It is chance a hybrid of *E. erythronema* x *E. stricklandii*.



Hakea fraseri, Gnarled Corkwood Oak flowers in winter and the nectar attracts rainbow lorikeets. *H. fraseri* is restricted to a small area of NSW and is listed as Vulnerable.



Eucalyptus baueriana, Blue Box has large, thin, broadly ovate grey-green leaves and small white flowers. It is named in honour of Ferdinand Bauer who travelled to Australia with Matthew Flinders as his botanical artist. Origin Vic, NSW, Qld



Eucalyptus pyriformis, Pear-fruited Mallee is a small tree with smooth bark and thick, grey-green leaves. It has large, ribbed, pear-shaped buds and big, hemispherical fruits. Flowers are cream, pink or red. Origin WA



The leafless white branches of *Aesculus californica*, California Buckeye are a prominent feature in winter. Origin California



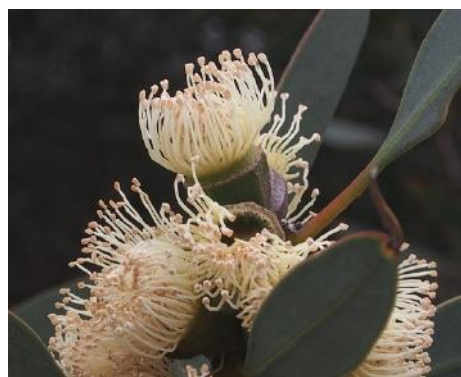
Hakea francisiana, Grass-leaf Hakea is named after George Francis, the first Director of the Adelaide Botanic Gardens. The long racemes of red to purple flowers are attractive to honey-eating birds. Origin WA, SA



The WA Dept of Agriculture lists as *Eucalyptus varia* ssp. *salsuginosa* as suitable for the revegetation of moderately saline soils in WA.



Eucalyptus woodwardii, Lemon-flowered Gum has a limited distribution east of Kalgoorlie, WA. It has a weeping habit and attractive, large, lemon-yellow flowers.



Eucalyptus rigens, Saltlake Mallee Origin WA



(Above and left) *Eucalyptus transcontinentalis* ssp. *semivestita* is in full flower in the mallee section between Cross Road and Walter Young Drive. Origin WA