

THE FRIENDS OF THE WAITE ARBORETUM INC.



WAITE
ARBORETUM

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GENERAL MEETING

Held on Monday 31 July 2006

FROM THE PRESIDENT

Jennifer is providing separate notes on progress in the Arboretum and many of you will have attended the re-opening of Urrbrae House on September 11. However, I would like to take this opportunity to pay tribute to our past President (and current Vice-president), Cicely Bungey.

Cicely has worked tirelessly both as a volunteer and as Chair of the Committee for as many years as the Constitution allowed. Her friendly nature and networking skills have been invaluable to the Committee and FWA members.

I extend a special welcome to new Committee members Henry Krichauff and Jeanette Lord.

Also, I thank those of you who generously donated to our funds this year. Because of the closure of Urrbrae House we were unable to have fund-raising functions in the precinct and donations are enabling us to make up some of that loss.

During August I was able to meet a number of volunteers at work in the grounds of Urrbrae House. If you would like to join this happy group, speak to the Director, Jennifer Gardner.

We were pleased to provide funds this year to further employ Mark Ziersch to continue his excellent skills helping Jennifer achieve more in the Arboretum.

Lastly, I apologize to those of you who had difficulty getting into Urrbrae House on the evening of Robyn Barker's talk on July 31 – a situation we can be sure will not happen again!

Bryan Milligan

IN THE ARBORETUM

OUR ELM AVENUE, WHAT IS ITS FUTURE?

Recent publicity of deaths of elms in the West Parklands draws attention to the state of health of the same species in the Arboretum.

Deaths of elms have been occurring in the Parklands for several years and although the bark beetle *Scolytus multistriatus* has been found, it has not been possible to isolate the fungus *Ophiostoma ulmi* which is transmitted by the bark beetles.

The fungus causes the breaking down of the cambial tissue between the wood and the bark, resulting in the death of the tree.

Trees with good moisture supply can resist bark beetle attack with their sap flow but trees suffering from moisture stress are susceptible to beetle attack and are killed.

The water requirements of the Parkland trees and the Arboretum trees would have increased considerably as the trees increase in size over the years. This could give rise to moisture stress at various times of the year and successful beetle attacks. This has certainly occurred in the Parklands but not, so far, in the Arboretum.

One elm tree in the Parklands between a group of dead trees and living trees showed some die back in the crown. On examination this was found to contain bark beetles but no *Ophiostoma* was found.

For our Arboretum elms, it seems a careful watering and mulching program is necessary to preserve the wonderful avenue.

R.S. Bungey

FROM THE DIRECTOR

I wish to start by acknowledging the excellent work of Arboretum horticulturalist Mark Ziersch. His unbounded enthusiasm and hard work are making a huge improvement in the health and general appearance of the collection. Thanks to Mark's careful preparation of planting sites and regular watering and weeding, new plantings are flourishing.

41 specimens were planted this year including a number palms donated and planted by members of the Palm and Cycad Society (SA), 3 more *Aesculus californica* Californian buckeye, 3 *Angophora hispida* dwarf apple raised by Treenet's Tim Johnson from seed collected from a fine street tree in Victor Harbour, another *Cussonia paniculata* mountain cabbage tree and rare *Cupressus dupreziana* raised from seed by David Symon from Arboretum specimens, 2 *Wollemia nobilis* Wollemi pine one donated by Cicely Bungey, 3 grafted *Eucalyptus* 'Urrbrae Gem' resulting from a research project at the Waite, and 3 *Geijera salicifolia* donated by Coromandel Native Nursery for trialing.

In June Adelaide Tree Surgery crew spent three days in the Arboretum, removing dead and declining trees and pruning others. This work was funded by a grant from the Friends.

Our partnership with Urrbrae Horticulture Centre has continued with TAFE students doing practical training - brushcutting in the Arboretum and pruning in the rose garden - to our mutual benefit.

Treenet's 7th National Street Tree Symposium in September was the biggest and best yet with high calibre speakers and delegates from around Australia. My thanks to the volunteers who helped pack satchels and greeted delegates with a friendly smile.

At 11 am on 11 November there will be a national release of Gallipoli Rosemary. Fifty cents from each sale will go to support Treenet's *Avenues of Honour* project. Congratulations to David Lawry for initiating and driving this exciting project. Thanks too to the volunteers who helped harvest the cuttings from the hedge of Gallipoli Rosemary planted in the Urrbrae House gardens. The propagating material was sent to nurseries interstate and 30,000 plants will be available for sale on Remembrance Day. ABC TV produced a film about the Avenues of Honour project that went to air last April. DVDs of this film will be used to promote the project nationwide.

The Arboretum will feature on a 'Gardening Australia' program on ABC TV in October. This program will go to air at 6.30 p.m. on Saturday 14 October with a repeat on Sunday 15 at 1.00 p.m. It will also be shown on ABC2 but the date and time are unknown at this time. Sophie Thomson was filmed talking about several mallee species in our collection: *Eucalyptus preissiana* bell-fruited mallee, *E. grossa* coarse-leaved mallee, *E. pleurocarpa* tallerack and *E. pyriformis x youngiana* pear-fruited mallee. All were flowering beautifully when filmed in August. I had another opportunity to promote the Arboretum in July when I was interviewed by Ashley Walsh for ABC Radio 891 'Good gardening' program. You can read the text and listen to the tape on <http://www.abc.net.au/adelaide/stories/s1698712.htm>. A display in the Science Hub at the SA Museum promoted the Waite Arboretum during National Science Week.

My thanks to the Arboretum guides who have given over 30 tours this year including to 150 delegates to a National Conference of the Australian Garden History Society. Members of the University of Adelaide Council gained an insight into the purpose of the Arboretum and how its activities contribute to research, education and community engagement when I took them on a tour in June.

David Christophel, Professor of Botany and Director of the Chester M. Alter Arboretum at Denver University, Colorado is currently spending three months sabbatical at the Waite Arboretum.

In August the Vice-Chancellor, Prof. James McWha announced a restructure of central services areas. It was proposed that the Waite Arboretum, Waite Conservation Reserve and Waite Historic Precinct remain in the portfolio of Corporate Services (formerly Finance & Infrastructure). During the consultation

period, Yvonne Routledge and I put in a strong submission to transfer to the Office of the Deputy Vice-Chancellor (Research), Prof. Alan Johnson AM, with a reporting line through the yet to be appointed Pro Vice-Chancellor (Community Engagement). We are delighted that our arguments were supported and we eagerly look forward to contributing to the University's community outreach, research and educational activities within this new structure.

Jennifer Gardner



Sophie Thomson at the Arboretum's *Eucalyptus preissiana* for ABC TV 'Gardening Australia'

POT – POURRI

THE WHEAT COLLECTION

The wheat display bed in the Garden of Discovery attracts much interest from visitors to Waite Historic Precinct. The living display was developed to illustrate a narrative of wheat breeding in Australia. Varieties important in the history of Australian wheat breeding are presented, as well as recent cultivars such as 'Yitpi' developed by scientists at the University of Adelaide's Waite and Roseworthy campuses. The garden also gives urban children the chance to see the plants from which their bread and pasta are derived. Each year the plots are planted, tended and the seeds harvested by volunteers.

This year two new cereals have been added: 'Treat' triticale and 'Bevy' rye. 'Treat' is one of five triticale varieties bred and released at the Waite by Dr Kath

Cooper. Triticale is the common name for \times *Triticosecale*, a hybrid genus between *Triticum* (wheat) and *Secale* (rye). This cultivar is drought tolerant and has grains more closely resembling wheat. 'Bevy' rye was bred at the Waite by Geoff Dean and released by Kath. Kath has been a strong promoter of triticale and has written a cookbook to raise public awareness of this grain. She also runs a 500 ha mixed cropping farm at Sherlock.

The following wheat varieties are represented in the collection.

'Purple Straw' was selected in 1860 from 'Red Straw', the English wheat grown at that time in Australia. English wheats were not very suitable for growing in Southern Australia because they yielded too late and were subject to drought. However, 'Purple Straw' yielded earlier and was, to some degree, drought resistant. These factors allowed a major expansion of wheat growing in the southern states.

'Improved Fife' was a white-grained selection of the US 'Red Fife'. This variety was introduced by the significant early wheat breeder, William Farrer, and was selected for its quality.

'Ward's Prolific' was a rust resistant variety selected from the South African 'Du Toit'. At the time, stem rust was causing problems and this cultivar was significant in that it marked the beginning of attempts to breed wheat cultivars that showed resistance to rust, thus protecting crops its ravages.

'Datatine' shows some resistance to rust. It is a club-headed soft wheat, low in protein and is the highest yielding soft wheat currently available. It has been grown in WA since 1998 with the soft flour market in mind. The flour is marketed as a variety-specific flour.

'Federation', Farrer's most successful wheat bred for Australian conditions, was released to mark the beginning of Federation in 1901 and was widely grown up to the 1940s.

'Early Gluyas', released in 1894, was selected from 'Ward's Prolific'. It was more drought resistant than the former and was an important variety in SA until the 1930s. It was used in the development of other drought resistant varieties.

'Marshalls' No. 3' (1890) was selected by a farmer as a superior type and was widely grown in SA around 1910.

'Free Gallipoli', released in 1917, during WW1, was developed by Prof. A.E.V. Richardson in Victoria, prior to his coming to SA as first Director of Waite Agricultural Research Institute. This variety was drought resistant and was widely grown in Victoria in the 1930s. The 'Free' in its name relates to the fact that it was 'freely thrashed' i.e. the grains fell easily from the glumes. This was, of course, an advantage to the grower.

Continued breeding for drought resistance led to the release of 'Bencubbin' in 1929. This variety was widely grown in the 1930s and 1940s. The drought resistant 'Bindawarra' was released in 1980.

'Null-4A' wheats lack the gene which codes for amylose and so their starch is different from that of other wheats. This is important for our export market since their flour is better than that of other cultivars for white salted Japanese noodles.

'Durati', another of the modern cultivars, is an old type old durum wheat.

I thank Jennifer Gardner, Russell Cooke and Colin Jenner for the information contained in this article.

Jean Bird

NAPOLEON'S WILLOW

At the General Meeting held on Monday 31 July our guest speaker, Robyn Barker, an Honorary Research Associate at the State Herbarium of South Australia, addressed the global distribution of willows and its association with Napoleon Bonaparte.

Robyn illustrated her most interesting talk throughout and showed photographs of Napoleon, his tomb on St Helena, monuments and cemeteries where willows, long associated with death, have been planted and of assorted willows.

Napoleon's interest in willows apparently began during his exile on St Helena when he was shown a well with a willow growing nearby. He is alleged to have said 'Should I die on this island, I should wish to be buried under that tree; and I will drink no water but from this spring' and 'Bury me under the willow next to the fountain from which my water is brought each day...'

Pictures of Napoleon's grave from 1821 - 1838 all show willows and a well. Pictures of the grave site after the removal of Napoleon's body to Paris, also show willows. The dispersal of the willow (*Salix* sp.) is likely due to its association with Napoleon. Cuttings taken by his doctors, and twigs or cuttings by visitors to the tomb, were apparently taken to Scotland, England, India, South Africa, England, Australia, New Zealand and America.

All weeping willow trees in Australia are allegedly descended from cuttings taken from trees round Napoleon's grave on St Helena. The first willows introduced into SA were recorded in 1841.

Robyn raised the possibility that the willow near the well might have been a wattle, not a willow. Baudin took many Australian plants to France, including wattles. A specimen in de Candolle's Herbarium in Geneva bears the label 'Acacia Saule de la tombe de Bonaparte jard. Boursalt 1823' ('Willow of the grave of Bonaparte garden of Boursalt 1823'). This specimen looks little like a willow but seems to resemble *Acacia vestita*. There are various references to mimosa growing on St Helena in the early part of the 19th Century and *Acacia vestita* is referred to as 'Mimosa Sainte Helene'. However, the author of 'A Flora of St Helena' is adamant that the willows round Napoleon's grave were willows, not wattles. The problem is yet to be resolved.

Willows are proclaimed pest plants in South Australia.

Jean Bird

TREENET

Proceedings of the 7th National Street Tree Symposium 7th & 8th Sept 2006

About 200 delegates representing most of the states and both private firms and council work forces attended the TREENET Symposium held at the National Wine Centre. Friends of the Waite Arboretum pre-packed the satchels for the delegates and were on hand for registration and to deal with any queries. The annual TREENET Symposium is recognized not only for the high calibre of the speakers but also for the friendly atmosphere and networking opportunities that it provides. Dr Greg Moore (Vic.) Chair of TREENET welcomed delegates and Prof. Chris Daniels (U. of A.) gave the opening address.

Prof. Bob Hill (U. of A.) spoke first on the topic 'Urban Trees and Climate Change' and discussed 'Long Term Climate Change and Vegetation Response'. He explained that Antarctica had been covered by polar forests from 200-80 M.Y.B.P. and, more recently, by trees similar to modern *Araucaria* spp. because when the supercontinent Gondwana existed ocean currents travelled to equatorial regions and back, thus being warmed; this accounted for the warmer conditions. Nowadays, the currents circle Antarctica only in the polar regions. The CO₂ levels 200-80 M.Y.B.P. were 10x current levels and acted as a stimulus to growth although such high CO₂ levels would be toxic to modern plants. Australia was also warm and wet with tropical rainforests of broad leaved plants and mangrove swamps, even at high latitudes, peaking at about 45 M.Y.B.P., after which Australia gradually dried out and became cooler. Fires became more common as leaf litter accumulated. *Eucalyptus* spp. evolved 25 M.Y.B.P. on the E. coast of Australia. Prof. Hill concluded that climate change had influenced the development of Australia's unique vegetation and that some spp. would survive human – induced climate change. However, since their recovery would be too slow for human timescales, global warming should be minimized as far as possible.

Under the same general banner, Dr Greg Moore (UniMelb.) discussed 'Urban Trees and the Global Greenhouse'. From the World Conference on the Changing Atmosphere in 1988, he quoted 'Humanity is conducting an unintentional, uncontrolled, globally pervasive experiment, whose ultimate consequences could be second only to a global nuclear war... It is imperative to act now!' He gave the history of the Kyoto Protocol and pointed out Australia's change of heart from an originally strong supporter to refusing to ratify it even when offered very lenient targets. He felt that, although the urban forest is currently ignored by the Kyoto Protocol, the value of urban trees for carbon sequestration will rise as a consequence of global warming and the public and political attitude to trees will improve.

Speaking on the topic 'Urban Trees and Water', Professor John Argue (UniSA) explained how engineers are attempting to emulate the natural catchments using WSUD (Water Sensitive Urban Design) techniques. Where catchments are over-developed, remedial efforts are made to retain as much surface runoff as possible and to restore the natural drainage path

as much as possible. Liz Denman (UniMelb.) followed by asking 'Are Street Trees and Their Soils an Effective Stormwater Treatment Measure?' The answer was 'Yes' and some trees grew better with stormwater than with tap water. 'Green Streets: Creative Stormwater Design' gave Georgie Wettenhall the opportunity to discuss various treatments of stormwater in Adelaide, including linear rain gardens and swales and to show photos of actual sites.

Dr Jane Tarran (UTS) addressed the topic 'Urban Trees and Urban Dwellers' and provided evidence that green environments have social and psychological benefits e.g. in Public housing in Chicago there was a 52% reduction in crime where there were higher levels of greenery and children diagnosed with ADD or ADHD improved after contact with nature; the greener the setting the better they were. Inner city residents coped better with poverty and were more hopeful when they lived near trees and greenery. Outdoor spaces with more trees and grass were more used than barren areas and consequently helped communities interact more socially. Dr Tarran concluded that the importance of the urban forest should be marketed more widely to decision-makers and the public.

Kevin Taylor (Taylor Cullity Lethlean, SA) in 'Improving the Urban Forest by Design' gave various examples of designs with which he had been involved. Especially memorable was the attempt to use an Australian native, the spotted gum, along North Terrace to replace the plane trees. This was thwarted by public and political over-reaction to the exaggerated possibility of dropped limbs and no proper shade. There were interesting photos of the Australian Garden at the Royal Botanic Gardens, Cranbourne, displaying native plants and different-coloured sands rather than the Eurocentric lake originally considered. An interesting proposal for the Canberra Arboretum is for '100 forests', each comprising an endangered tree species, to represent the post-colonial world. Each forest would be 400 m square, large enough for one to stand in the centre and see nothing but that particular forest.

Steve Leadbeater (Energex, Qld) speaking on 'A Community in Conflict' took the side of managers of roadside vegetation under power lines. He pointed out the difficulty of finding competent people to do the pruning and suggested that there ought to be some sort of standard for pruners.

The speakers on 'City Limits. An Urban Forest Reality Check' discussed specific problems in various cities – Karen Sweeney (City of Sydney), Lyndal Plant (Brisbane City Council) and Stephen Hughes (Parks and Places, ACT) showed photos and explained their problems and plans for their cities' trees.

On the topic 'Trees on Development Sites', Andrew Morton (Earthscape, NSW) discussed 'Determining the Retention Value of Trees on Development Sites', a complex formula to analyse and rate all aspects of a tree's value (environmental, heritage and amenity) to give a final retention rating of 1 – 7. David Galwey (Tree Dimensions, Vic.) explained the 'Draft Australian Standard for the Planning and Protection of Trees on Development Sites' and the requirements of Tree Protection Zones during development.

Addressing the topic 'Heritage Trees: Are They Past It? Managing Trees for Future Significance', Dr Karen Olsen (Room Outside, Vic.) discussed the problems of trying to preserve heritage-value trees that are substandard, Ben Kenyon (Homewood Consulting, Vic.) discussed 'Development of a Standard for the Avenues of Honour Database', with examples of the type of data required and their categories and Chris Lawry (City of Charles Sturt, SA) spoke about 'Tree Reports and Planning', explaining how he had managed to detect and prosecute people for tree damaging activities.

Philip McNamara and Carsla Carter (NTSA) presented 'The National Trust of South Australia Significant Tree Conservation Policy Launch', resurrecting a Significant Tree Register originally launched in 1983 and with 625 trees on the register by 1992. After this the register was used only as a reference and no new trees were added. NTSA did advocate on behalf of Significant Trees and held forums in 1998 and 2000 while the State was developing its Significant Tree legislation. The register has been reopened, with little change to the criteria or procedures, after concerns about the State legislation. Nominations are received free-of-charge from any individual or group and rated against 16 criteria.

Dr Greg Moore (UniMelb.) speaking on 'Urban Tree Valuation. A Current Perspective and Progress Report' discussed the 2006 draft for amenity tree evaluation. He was not optimistic that the draft would be adopted as an Australian standard but was hopeful that it would be widely used.

'Pruning of Amenity Trees A54373. Update on Australian Standards' by Judy Fakes (Ryde College of TAFE, NSW) also has a history, though not quite so long, from 1989 -2006 when public comment closed on the latest draft.

The closing report was 'Avenues of Honour 1915-2015 Progress Report'. David Lawry gave a progress report on the *Avenues of Honour* Project.* Gallipoli rosemary will be launched nationally by Bunnings on 11 November 2006 as a fundraiser (50c per plant) for the *Avenues of Honour* Project. A film clip of the ABC 2 segment on the project was shown.

Much interesting information was given by the speakers, all of whom showed great enthusiasm for and knowledge of their chosen topic.

Lynda Yates

*More information on the *Avenues of Honour* Project can be found at www.avenuesofhonour.org. All papers from the symposium will be available as PDF from the Arboretum website.

NEW MEMBERS

We warmly welcome new members Torben and Jeanette Davidson and Maria Savant and also former member Robyn Barker who has recently renewed her membership.

FORTHCOMING EVENTS

Waite Festival : Sunday 19 November at 11 a.m.

Christmas Party : Monday 4 December from 6 – 7.30 p.m.

Christmas will soon be upon us and any (or all) of the following books available from the Arboretum Office would make ideal Christmas gifts (and benefit the Arboretum, at the same time).

***Gardener's Companion to
Eucalypts
(4th edition)***

by Ivan Holliday & Geoffrey Watton

\$30 each

***A Field Guide to
Australian Trees
(3rd edition)***

by Ivan Holliday

\$30 each

2 other books by Ivan Holliday are:

***Melaleucas – A Field and Garden Guide* \$32 each**

and

***Hakeas – A Field and Garden Guide* \$30 each**

Another great buy is:

***Eucalypts of South Australia* by Dean Nicolle \$25 each**

**Bottle green Arboretum T-shirts with logo
\$16 each**