THE FRIENDS OF THE WAITE ARBORETUM INC.

WAITE
ARBORETUM

NEWSLETTER NO. 61

Spring 2009

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FROM THE PRESIDENT

First of all an urgent reminder. This Sunday, October 18 you and your friends are invited to join us on a visit to Dean Nicolle's Currency Creek Arboretum.

We are to meet at the Lions Park at Currency Creek at 10 am. Cost per head is $5. You may wish to bring a picnic lunch, or go on to Goolwa when the tour is finished. This is also an excellent opportunity to view first-hand the state of the Lower Lakes and talk to the locals about the problems they face.

Take the Goolwa turn off after Mt Compass and then left at the Strath – Goolwa Road.
If you have any problems on the day, call me on my mobile 0400 828 971.

On Friday September 4 a Field Day was held on Waite Campus for the 10th National Street Tree Symposium (Treenet). Volunteers from the Friends assisted with the preparation during the week and staffing at the Wine Centre on the Thursday. We also had wonderful support for the catering and guiding of groups on the Friday.

Special thanks go to Beth Johnstone who consulted with David Lawry and made the provision of lunch to the delegates run so smoothly and to Peter Nicholls for organizing the guides and keeping oversight of the day's activities. Jennifer put in a huge effort in preparations for the Symposium and I know is very grateful to all of you who gave of your time during the week.

Also in September we hosted two music events in Urrbrae House and they were both well supported. On Sunday 20th the Arbor Wind Quintet gave their second performance for the Friends and on Wednesday evening the 23rd Aleksandr Tsiboulski gave us another brilliant recital in classical guitar.

Aleksandr performed works from eight separate composers over one and a half hours of beautifully played and lovingly executed pieces. Those who were fortunate enough to be present in such a venue

enjoying the performance of this brilliant young musician will not forget it. His first public performance was at Urrbrae House 15 years ago at the age of 15. Since then he has received numerous awards and performed all over the world. How privileged we were! Thanks to those Committee members who enabled both functions to run so smoothly.

I was fortunate last month also to attend the tree-climbing competition in the Arboretum on the 19th and a nature walk with our Conservation Reserve Friends on the 20th. Their progress in removing olives and gradually restoring many native plants on the Reserve is a great credit to such a small but dedicated group.

Next year we are planning with Basketry SA for their exhibition during the Fringe Festival and we hope to have a Sunday in Autumn with our Patron, Sophie Thomson, giving a talk in Urrbrae House.

If you have anything of interest you would like to contribute to our newsletters feel free to contact Jennifer or our editor Jean and when thinking about gifts for a friend what about a year's membership to Friends of the Waite Arboretum?

The Arboretum is becoming better known and we like to keep as many people as possible informed of its activities, so increasing our membership is important to the aims of the Friends. Meanwhile we hope you can join us on October 18 and at the Christmas wind-up on December 7.

Bryan Milligan

IN THE ARBORETUM

FROM THE DIRECTOR

State Tree Climbing Championships

The SA Tree Climbing Championship held in the Arboretum in perfect weather on Saturday 19th September was a great success. Our State Championships are widely regarded as the best in the country. It was lovely to see so many families attending, introducing children to the Arboretum. Climbers from Victoria also participated in the event with former world champion Kiah Martin providing valuable mentoring for the less experienced competitors. Congratulations to all 23 SA climbers especially State Champion Stefan Gfrerer, owner/Director of Adelaide Urban Tree Service – one of our most generous sponsors. Channel 7 will be filming a segment on our State Champion at work. A camera mounted on Stef's helmet will give viewers an arborist's eye view from the top of a tall eucalypt. Also next week, Channel 10's 'Totally Wild' crew will be filming arborists Gary Moran and Daniel Tuckwell of Arborsmart doing some treetop pruning in the Arboretum for their children's program 'Top Job'. All this media exposure helps to raise the profile of the Arboretum in a very positive way. Watch for these TV features.

New vehicle for the Arboretum

A new (second-hand) Toyota Hilux tray top utility has been purchased for the Arboretum to replace the old vehicle. This will greatly facilitate Mark's work and watering new plantings as summer approaches.

Garden News

During winter and spring, the **Mediterranean Garden Society** (SA Branch) members continued their Sunday morning working bees in the Garden of Discovery, planting many more native specimens which they donated. Next year the Society is planning an Open Day in the Gardens to celebrate the 10th anniversary of the formation of the SA Branch in Urrbrae House in 2000. Friends of the Arboretum will host and participate in this event planned for Sunday 21 March.

Heritage Rose Society members collaborated with our regular Tuesday morning volunteers to redevelop the heritage rose collection. All the roses were pruned, lifted and subsequently replanted in a new parterre shaped like a wheel with five spokes, outlined in bricks. Heartfelt thanks are extended to Jean Reid and her stalwart Society members and also to the volunteers especially David Giersch, David Barwick, David Oates and Peter Chisholm as well as Mark Ziersch, Stephen Wait and Daniel McDonald.

Campus Services has secured funding to install drip irrigation across the campus to replace non-compliant overhead sprinklers. Installation of drippers in the Precinct gardens will start soon.

All the gardens are looking lovely at present and the roses are already blooming in profusion. The Tuesday morning volunteers do a wonderful job and new helpers would be very welcome if you have an hour or so to spare and enjoy gardening and good company.

2009 Planting

Planting is almost completed for this year with over 100 specimens planted and possibly some more advanced trees to trial, donated by Metropolitan Trees, Victoria. Many of the specimens planted this year were donated by Daryl Kinnane, Proprietor of Native Rainforest Flora, for the Dry Rainforest Garden. A number of trees were raised at Urrbrae TAFE from seed collected from species in the Arboretum which are not commercially available but worthy of trialling as street trees. These were distributed to Councils for Treenet trials as well as replicate specimens being planted in the Arboretum.

Treenet Symposium

Our 10th National Street Tree Symposium was a resounding success with about 30% of the 250 delegates attending from interstate. Every mainland State was represented including for the first time NT & WA, so Treenet is truly a national organisation. Feedback from delegates was very positive and all expressed support for Day 2 being held in the Arboretum, with a practical emphasis. Congratulations David Lawry, Director of Treenet for once again putting together Australia's premier tree conference.

As part of her demonstration of best practice tree planting on Day 2 of the symposium, arboriculturalist Judy Fakes, a member of Treenet Advisory Board and Management Committee since its inception, planted four *Angophora costata* raised in Rocket®Pots by Peter Lawton. These specimens will be monitored and the root architecture examined at future symposia. Judy, the acknowledged 'Queen of Arboriculture' in Australia, has just been appointed a full-time Commissioner in the NSW Land and Environment Court and is to be congratulated on this prestigious appointment.

The financial success of the symposium enabled Treenet to make a generous grant of $5,000 to the Friends of the Arboretum in recognition of the sterling contribution made by the Arboretum and garden volunteers to the smooth running and friendly atmosphere of the symposium.

Acknowledgements

Finally I thank all the arboricultural companies which have donated mulch this year: over 250 truckloads to date. A complete list can be found on the Arboretum website: www.waite.adelaide.edu.au/arboretum/. I also acknowledge the dedicated efforts of Arboretum groundsperson Mark Ziersch throughout the year.

Jennifer Gardner

ACACIA ANEURA F v M. ex Benth.

Acacia aneura, Family Leguminosae, commonly called mulga or true mulga, is endemic to arid Australia and is widespread in all States except Victoria and Tasmania. It is such a common feature of inland Australia that the words 'the mulga' can be used to mean the bush, the outback or wilderness in general. The botanist Ferdinand von Mueller first described *A. aneura* in 1851 from a specimen which some historians believe he collected from the Kanyaka ruins near Hawker in South Australia. The dense, hard wood was used by Aboriginal people to make tools and a small, flat shield, called "mulga" by one Aboriginal group, gave the plant its common name.

Acacia aneura occurs in pure stands or together with eucalypts or shrubby understorey plants. It ranges in form from a small shrub of 1-2m to a small tree of 10-15m with upright branches and leaves. The bark is rough and the 'leaves', actually phyllodes or flattened leaf stalks, are grey-green in colour. Both the form and phyllode shape are exceptionally variable. The phyllodes range from short and needle-like to long (20cm), broad (Icm) and flat. The deep yellow flowers are rod-like, 8-25mm long. Flowering time is dependent on rainfall with flowers often appearing after good rains. The smooth, brown seed pods are oblong, flat and straight, up to 10cm long and 7-17mm wide and contain the dark brown seeds, each with a small pale aril at the base.

Acacia aneura is an extremely variable species. It both intergrades with other species, especially *A. ayersiana* and *A. minyura* and hybridizes with other species, particularly *A. ramulosa* and *A. craspedocarpa*. Botanists have recognised ten varieties of *A. aneura* and expect that more will be described in the future when further work is done on the intergrades between the ten named varieties.

In contrast to most acacias*, A. aneura* is long-lived. A study counting growth rings in felled mature trees showed that stems of only 25cm in diameter had from 150 to 240 rings. A typical life span for an undisturbed tree is around 200 to 300 years. The tree is well adapted to arid conditions and poor soil. The needle-like phyllodes stand erect to absorb morning and evening sunlight and minimise the effect of midday sun. The phyllodes are thick-skinned, have high oil content, sunken stomata and tiny hairs all of which reduce water loss through transpiration. The long tap root can access deep moisture. Any rain that falls is channelled down the erect phyllodes and branches, to be collected in the soil immediately next to the trunk, increasing the effective rainfall. *Acacia* roots carry bacteria that fix atmospheric nitrogen which supplements the nutrient poor soils. In addition the tree is drought deciduous and the layer of dropped foliage forms a mulch from which the nutrients can be recycled.

Acacia aneura has been and still is used for a wide variety of purposes. The wood is one of the hardest of Australian timbers and it is so dense that it sinks in water. It is used for guitar fret boards and bridges and for turning and craft work because of its attractive brown colour, golden grain lines and creamy sap wood. Early settlers used the wood for fencing, charcoal and bullock team yokes. Aboriginal people used *A. aneura* wood for shields, spear-throwers, spearheads, barbs, boomerangs and digging sticks.

Pastoralists value the mulga for the shelter, shade and forage it provides for their stock. *A. aneura* leaves have quite high protein levels but the tannin in the leaves allows only about one third of the protein to be digested. As a defence against browsers, mulga leaves have even higher tannin levels in times of drought, in younger leaves and in the lower leaves. Stock cannot thrive on mulga leaves alone and need supplementary feeding.

Acacia aneura was one of the most important food sources for Aboriginal people living in the arid regions. The edible seeds were gathered from the pods or collected from under the tree, mixed with water and ground to a nutritious paste which is said to taste like peanut butter. Branches attacked by insects would ooze a delicious sugary gum which would harden on the outside but remain syrupy within. When trees are attacked by the sap-sucking mulga lerp (*Austrochardia acaciae*), red lumps form along

the stems and ooze a sweet honeydew which could be sucked off the branches. Most galls on mulga foliage are inedible but one type, the mulga apple, produced by a particular wasp larva, was a great delicacy for both Aboriginal people and bushmen. The marble sized gall tastes like dried apple. At least three kinds of mistletoe parasitise mulga branches and all of these bear edible fruit. The sought after honeypot ants (*Melophorus inflatus*) often built their nests deep under mulga trees. Nowadays bush food restaurants use wattle seeds, including *A. aneura* seeds, in desserts such as cakes and icecreams and cleaned wattle seed is available from some speciality suppliers.

The specimen in the Arboretum (# 2183 located in K15) was planted in 1984 and is now a small tree about 5 metres tall and 2 metres wide.

References

Low, T., *Wild Food Plants of Australia*, Angus & Robertson, 1991, North Ryde, NSW.
http://www.anbg.gov.au/abrs/online-resources/flora/redirect.jsp
http://asgap.org.au/APOL
http://www2.dpi.qld.gov.au/sheep/4906.html
http://en.wikipedia.org/wiki/Acacia_aneura

Acacia aneura (#2185) with numerous seed pods containing edible seeds.

Eileen Harvey

POT – POURRI

In September, the Friends were treated to two excellent musical performances. The first, on Sunday 20 September, was by the Arbor Wind Quintet (Lynette Whellan, oboe, Caryl Lambourn, bassoon, Philip Stephenson, clarinet, Paul Hampton-Smith, French horn and Jane Mackenzie, flute). As was their concert last year, their performance was first class and much enjoyed by the audience. They played works by the 16th Century Tielman Susato, the late 19th – early 20th Century Sergei Prokofiev, the late 18th – early 19th Century Anton Reicha and the 19th – 20th Century composers Carl Nielsen and Jaques

Ibert. Each of the musicians gave a brief background of one of the composers and described the works chosen.

As well as giving backgrounds to the chosen composers and their works, the musicians demonstrated various aspects of their instruments. All in all, it was a most interesting and entertaining afternoon.

The second musical treat was a recital by the talented classical guitarist, Aleksandr Tsiboulski on Wednesday 23 September. This outstanding performance has been described in the President's Report. It was reviewed in *The Advertiser* (Tuesday September 29) by Peter Burdon who described Aleksandr's performance as, among other things, 'demonstrating formidable technical and interpretative skills, lively and rhythmically diverting'.

We were fortunate indeed to host two so excellent musical performances last month.

Jean Bird

10TH NATIONAL TREENET SYMPOSIUM

The 10th National TREENET Symposium was held on Thursday 3 September in the National Wine Centre and on Friday 4 September in the Waite Arboretum.

TREENET started off this year with a long line of Arborists queuing for their name badges and their copy of the proceedings. After briefly mingling, the group took their seats.

Dr Greg Moore, chair, and one of the main contributors to TREENET welcomed everyone and gave an overview of the day's talks.

The first speaker, Judy Fakes, head teacher of Horticulture & Arboriculture at Ryde TAFE NSW, started her lecture by breaking down the acronym TREENET = Tree and Roadway Experimental and Educational Network, and went on to discus its origins.

TREENET was co founded by Dr Jennifer Gardner, director of the Arboretum and David Lawry. Together they recognised the opportunity that the Arboretum provided as a focus for research and education. Judy then highlighted some of the achievements of the past 10 years.

Dr Greg Moore reinforced the importance of trees in the urban environment, the need for good sustainable management and for trees to be given a monetary value. He also emphasized the importance of water and for better management of this vital resource, a topic relevant in South Australia.

Senior Arborist of the City of Mitcham, Tim Johnson, discussed the different tree planting trials carried out through the Mitcham city area.

Mark Brindal gave a view into economic efficiency with the value of urban trees.

Phil Hewett, City Arborist – Infrastructure Mgt Services (Natural Assets) of the City of Newcastle gave a fantastic and inspiring power point presentation underlining the need for more green infrastructure.

David Lawry spoke about his work with the Avenues of Honour project and the great work been done to preserve this national memorial.

Ian Shears from the City of Melbourne talked about the issues of managing heritage trees and landscapes and the effects the long period of water shortage have had on some of Melbourne's oldest trees. He shared some of the methods being used to try to save them, as well as discussing the need to plan for the replacement of ageing trees.

Dr Jane Tarran from the University of Technology Sydney talked about urban ecology and peoples' attitudes toward trees and green infrastructure.

Lyndal Plant from Brisbane City Council talked about climate change and sustainability action plans and the role that trees play in these areas.

Karen Sweeney from the City of Sydney Council gave a brief overview of the Sydney Council's tree management plan and the recent inauguration of the three council areas that now exist as the City of Sydney Council.

Dr Peter May from May Horticultural Services discussed the use of storm water for the irrigation of street trees and the results of the trials using structural soils.

Overall the day was very informative and gave an inspiring and constructive outlook on the future of the arboricultural industry and street tree management.

Kieren O'Neill

Presentations at the Waite Arboretum: Friday, September 4th - 9am to 3 pm.

Four groups participated in 6 practical sessions aiming to demonstrate improvements in tools and of knowledge for application in urban forests. Each session had a 40-minute presentation. Each group comprised around fifty attendees escorted by three Arboretum Guides.

This article gives some glimpses of the expertise found in each session. The high quality of the presentations impressed us all.

1st Stop. David Galwey – **Standards for protection of trees on development sites.** A new Australian Standard, AS4970, had been published the previous week. David gave an outline of the assessments, surveys and lists of issues comprising stages in the development and management process of features incorporated into AS4970. He stressed its value in resolving the conflicts likely to occur between developers wanting to maximize the commercial gains from the development and the practices needed to maintain existing healthy and significant trees at the site. He noted that each Local Government council has its own standards and by-laws about structures and sizes of trees to be retained. He concentrated on a major feature of the Standard - the definition of a circular root system protection zone allocated to *each* desirable individual tree, the TPZ. Flexibility was built in to the AS with ways to makes a suitable compromise between the retention of quality trees and ways to modify the zone without reducing the total *area* of the TPZ. This is secured by defining a sacrosanct stability root zone (SRZ) inside the circumference of the basic TPZ. This is the way (a) minimum impact on these trees but (b) optimum location of buildings and works occupying the site, can be found. Its definition is more complicated, but a 'sacrosanct' area remains around the tree, with a radius about 2/3 of the TRZ but not less than 1.5 m. This aspect is resolved in the planning and pre-construction phases. A useful hand-out was provided.

A *Corymbia* tree near the pond of 80cm diameter at breast height (dbh), was used as a practical demonstration. Its 'basic' TPZ had a radius of 12 x dbh = 9.6 m, giving a circle with an area of 289m² around the trunk. In this case the radius of the SRZ was set at 6.4m; both radii were illustrated by tape measurements. In the area between the circumferences of the SRZ and TRZ, a trench had been excavated to in a depth about 25cm to investigate the distribution of roots and especially to assess the presence or absence of lateral support roots. Only 'fine' roots had been exposed in this case which means that encroachment of development works inside the TPZ perimeter would be allowed *provided that* it did not exceed 10% of the TPZ area, in this case about 29 m².

This trench had been freshly cut by a Hydrovac soil 'blaster' running at a non-injurious, 3-4000 psi. An alternative tool, used in NSW, used an air-pressure hose. Ground-penetrating radar, a non-destructive/non-intrusive method, was still under investigation. The cost of root investigation was $600-$1200 per tree, around $900 per half-day.

Stop 2: A David Lawry triple whammy - **New Species for Street Trees: Raising planting stock in a Shipping container-sized system: TREENET Gutter Inlet and 'Black Hole' cistern water detention system**.

The comprehensive 'shipping container-sized nursery-raising system' was demonstrated using Rocket®Pot technology emphasizing roots air-pruned especially for length of tap root (i.e. depth desired). Not just limited to special needs of street tree culture, it can deal with non-commercial seed lots, including special seed sources, ranging from those collected from desirable specimen trees to local provenances of limited extent (e.g. for conservation). The containers hold 200 pots, are floodable and have cyclic rewatering draining to any desired depth with the aid of a sump. The aim was to get a single sturdy seedling in a 1½ L pot no later than the 7th week from an initial sowing of four seeds, with a tap root in 3 weeks and radial root development over the next 4 weeks. Transplanting to larger 400mm pots occurs at 6 months. Water content is managed by pot weighing, maintained between 6.7 and 10 kg.

The TREENET street watering system was demonstrated with a mock-up showing all the basic parts (plus two useful pictorial handouts). Virtues of the method, smart features to prevent excess take-down of granular road-wash, special colloidal, carbon-enriched low density (1t/m^3) filler for the sump, and almost total use of recycled materials were emphasized. Cost was about $300 per inlet, comparable with current costs to councils of street tree maintenance.

Stop 3: Judy Fakes: **Understanding soil - Correct Planting techniques**.

It is important to understand what factors might cause trees to struggle. The demonstration began with the examination of soil at the planting sites. Need is for 40cm to (no more than) 60cm of freely draining, aerated soil over an adequate area. Most people do not take enough samples to determine desirable minimum requirements. Preliminary site assessment was essential, first of surface terrain and features, second of soil characters at depth (stones, macropore frequency, friability, dispersive nature, mottling – indicating poor drainage, etc.). Holes removed with 10-cm diameter auger are ideal, quick and can be comprehensive. Volunteers cut auger samples, depths were measured and successive depths of soil laid out on a plastic sheet to the same scale, so that changes in texture and colour could be readily determined. Judy emphasized the value of using simple hand tests for soil texture. She also recommended a 24-hour test for soil stability using an undisturbed sample in a jar of water and use of a hefty screwdriver for a quick test for soil compaction. Use of a back-hoe needs careful supervision to avoid compaction of clay subsoil.

Stop 4: Dr. Jennifer Gardner: **Values in Arboreta - good trees for streets; managing drought; mapping moisture *in situ*.**

Good trees for streets: Arboreta give value in comparing different provenances of species with some especially-suited for street planting in a particular locality, e.g. *Flindersia* spp. in high rainfall climates can grow to 40m but in the Waite (with average rainfall = 600mm) are limited in height development - yet show a high degree of drought tolerance, and are suitable for Adelaide.
Water-use patterns research project: River red gum and its survival and growth in riparian zones, utilised Enviroscan® technology to meter soil water regime in the surface and sub-soil zones to assess withdrawals through the year.
The "Homoclimes" concept aimed to compare adaptation to climate: it was incorporated into the Arboretum from the 1950s. This introduced species from around the globe with a similar Mediterranean-type climate to South Australia's and the group saw the Californian oak species collection as a part of it. Many of the fifty oak species in the Arboretum fit into the homoclime series. Visited the Arboretum's large iconic *Dracaena draco*, now 80 years old.

Landscape features: Final stop was in the Elm Avenue, that has been stressed by a 7-year period of low rainfall and 3-year drought that had an average rainfall of only 400mm/year. The 80 individuals upon which to assess damage and recovery patterns was posited as a unique research opportunity as well as helping to find ways to save iconic specimen trees around the city. Funds were obtained to apply mulch and a watering system to restore health.

Stop 5: Ross Clark: **Selecting for quality in planting stock**.

Ross had on hand a useful set of examples of good and poor quality potted trees at a stage ready to transplant into a street or park-like setting where individuals are placed to minimize mutual interference, at least for the first few years. He used these to quiz the group on how they assessed them as "fit for the purpose", suitable or not? He took the decision-path beginning with traps in specifications supplied to the nursery (the inadequacy of a single criterion such as height, and that, if more comprehensive, e.g. it included 'caliper' (diameter at ground level) as a measure of sturdiness, it might, or might not be well-informed). He demonstrated a simple test suitable for a pre-delivery inspection - with possible traps for the gullible by flexing, or wobbling, the pot and tree stem to see the way they behaved. He reminded the group that nurseries grow only what customers are willing to pay for and they aim to produce stock at a profit. He postulated *five elements* of successful tree planting - measuring success if the objectives of the planting had been achieved after a year or longer.

> Planting *design* should be well-researched: *Choose* suitable species: *Quality of the stock* – are they worth the trouble of putting in?: *Funding* of the purchases should be adequate to ensure best quality was obtained: *minimize maintenance*; avoid *unnecessary* 'maintenance'-remedial work after planting is often a sign that some stage of the supply chain was not done well, any aspect of the preliminary design, site preparation, stock specification, inspection or selection: finally, *steady communication* between the parties involved in the process is essential to ensure quality stock is sought and obtained.

A discussion on choice of pot design, solid walled pots v. Rocket®Pots followed. His conclusion was that either type could be satisfactory, either should be the correct size, but they each had need of specific care practices and the need to consider the form of lateral root development specified. The most significant feature, shared by both, was effective air pruning of the emergent tap or sinker roots at the base plate of the pot. It was best to specify a good root medium to use in a pot.
Discussion of plant quality began with **branches,** their balance and frequency of side. Branches 'feed' the parts of the tree above them; if there was a need to prune this should be from the base upwards.
Stem quality: it should be self-supporting. Often 'rubbish' stock with a high height:caliper ratio is purchased because it is cheaper. He thought that around 80% of the current market comprised this material because poor discrimination meant this is what sold well enough.
R**oot development**, he said, cannot be seen without unpotting. A pointer was in the flex test -there should be adequate 'ballast' in the pot. This factor indicates that the root occupation is well-developed through the soil volume; it is neither too much (root bound) nor too little (due to poor stock raising practice). He demonstrated with examples of good and poor root development in both kinds of pot, especially where an inadequate watering regime was evident. The best aspect of the Rocket®Pot was its (detachable) base plate with ample aeration, and with adequate watering, its capacity for side root air pruning.
Planting stock quality was the foundation of the mature tree.

Stop 6: James Smith: **Discovering Life in the Urban Forest**. The group proceeded on a walk through the Arboretum.

Tree hollows: Australia has around 80% of its fauna dependent on tree hollows. The USA fauna, for example, has 10% reliance on hollows. None of the Australian avifauna is capable of creating hollows. The species rely on termites and heart rotting fungi. In Australia about one-third of mammals depend on tree hollows for nesting and two-thirds of the micro-bats (i.e. not fruit bats).
Diversity: In Adelaide and the Mt Lofty ranges there are 1150 vascular plant species that survive at present and more than 85% are found in Adelaide itself.

Studying trees: Look at them in layers (of about 5m), beginning at ground level with herb, grass and shrubs, lifting the eyes to lower, middle and upper canopy layers of trees.
Structure of the vegetation is its most important feature and this factor determines the kind of fauna that will be attracted; this and the availability of clean water.
Wildlife abundance: Parrots and three species of rosella are abundant in the urban area. Native honey-eaters have been outnumbered by miners for which the modern city is a perfect habitat because the vegetation has been managed. Urban conditions favour possums and southern cities in Australia have populations 5x to 10x the natural intensity. The fur of possums enables them to live within urban structures, especially roofs, during summer heat and frosty nights. Nevertheless, they are territorial and adjusting in the urban setting can be stressful shown by disorders of their fur and skin.
Problems with planted trees: Native hardwood trees need to be a minimum of 60 to 80 years (the age limit of the Arboretum) and those with high density wood over 100 years old, before hollows appear and termites can develop the hollows that can be utilized by the fauna. Hollows in native trees retain their size and so become used by the same species over decades. Exotic hardwoods, such as elms, oaks have wood more easily-rotted and hollows appear sooner but these hollows enlarge more rapidly and so have a limited 'life'. Nesting boxes as a palliative: Hollows have to be of a size that among the predators, currawongs cannot insert their beaks and so prey upon the nestlings. This often means that they have to be quite deep. The microclimate of hollows is 15 to 20º C cooler than the hottest days and similarly warmer than the coldest nights. Nesting boxes tend to be too narrow to resist currawong intrusion. Plus they have been made of preserved softwood timber, the openings are often seen to be chewed larger, and wood fragments from chewing can release copper from the digested wood that can be toxic to birds. Nesting boxes have a microclimate rarely more than 2º C more favourable than ambient temperature.

Robert Boardman

NEW MEMBERS

We warmly welcome the following new members:

Mrs Gaynor Strapp, St Georges; Mr Les and Mrs Faye Loffler, Belair; Ms Barbara Russell, Hyde Park; Ms Jennifer Goodwin, Marion.

NB A reminder that membership is due for renewal on 1January, 2010. Individual membership - $15, Family - $20. Donations are gratefully received and are **tax deductible**.

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FORTHCOMING EVENTS

Sunday 18 October: **Visit to Dean Nicolle's property, *10 a.m. - cost $5.00 per person.**

Monday 7 December: Christmas Drinks. 5.30 pm – 7.30 pm in the Coach House and Gardens.

Saturday 27 February – Sunday 8 March: Basketry SA Exhibition

Sunday 21 March: Garden Open Day (with Mediterranean Garden Society)

Monday 12 April: FWA AGM

***NB** Please note. The time to meet at the Currency Creek Lions Park (directions in President's Report) is **10 a.m.** I apologise for this omission in the last Newsletter.

JB