THE FRIENDS OF THE WAITE ARBORETUM INC.

WAITE
ARBORETUM

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Winter 2006

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ELEVENTH ANNUAL GENERAL MEETING
Wednesday 5 April 2006

PRESIDENT'S ANNUAL REPORT

I am pleased to be presenting my final report to you in this eleventh year of the Friends of the Waite Arboretum. Tonight we are here in the Charles Hawker Conference Centre because the final stage of the salt damp treatment of Urrbrae House is being undertaken this year. We are all delighted that the work is happening and look forward to its completion, hopefully before August. A major asset resulting from the treatment has been a graded access at the rear of the building for wheelchairs. The replanted gardens in the front of the House are flourishing as our memories of the wisteria continue to fade.

Many of you as valued friends of the Arboretum will have attended, and, if not, read about, our general meetings and the interesting speakers we have enjoyed over the past year. These have included Sarah Cockerell speaking on "Avenues of Honour", Graham Brookman enthusing about his permaculture property being developed on the Gawler River by his family, participation with Roger Grund from Butterfly Conservation SA in a walk in the Arboretum prior to our combined Christmas drinks party with Friends of Urrbrae House and the Waite Conservation Reserve, and Jill Woodlands who gave an illustrated talk on Mediterranean Gardens. Our general meetings have been well promoted throughout the University via the internet and well attended. The suppers following provide an added opportunity for further discussions and often enlisting new members.

Our major fundraising effort in the past year has been to support Beryl Martin with her colourful art exhibition held in September. It was a great success in every way. What would we do without our wonderful volunteers who cheerfully welcome visitors and transact sales of the paintings or cards? My special thanks to Susan Underwood who organized the roster of helpers.

In recognition of the value of volunteer efforts in protecting our fragile environment, we were invited by the Mayor of Mitcham to a Civic Reception last May. Volunteers were also invited to a special reception late last year in the Elder Hall of the Adelaide University. All volunteers associated with the Waite Historic Precinct have recently been issued with a volunteer badge by the University. It is nice to appreciated!

Over the years we have reported in our newsletters on the Elm Avenue in the Arboretum. Last year it was reported that the University was to fund an irrigation system particularly as the elms were looking very stressed as a result of the very dry summer of 2004/05. This is under review but in the meantime the trees have been well mulched with good effect. The new labels for the Arboretum trees, with stainless steel cable, have been progressively attached. We are delighted that the University has refurbished the seats in the Arboretum which are a great asset to the many visitors who come on a casual visit or are part of the regular guided tour of the Arboretum conducted on the first Sunday of every month. A number of interpretive signs is being developed for the Arboretum to help people appreciate the various trees they see.

A long-term project which is beginning to show great promise is the revegetation of the northwest corner of the Arboretum. Thanks to the dedicated efforts of a small band of volunteers who have raised seedlings, planted them out, nurtured them with periodic watering, labelled, and at the appropriate time, sprayed the couch grass, the area now has some very healthy groups of young saplings and understorey plants. The area will never look like the pre-European grey box bushland but we are doing our best in today's urban environment. It is a credit to those involved and I hope members might make a point of visiting that area and watching its growth over future years.

I am mindful that the aims of the association are:

- To foster interest in the care and use of the Waite Arboretum
- To raise funds for the development and promotion of the Waite Arboretum or for any purpose which has the approval of the Director of the Arboretum.

Your Committee has worked diligently towards achieving these aims. The procurement of sponsorship in the form of fertilizers has meant that the gardens are looking "better than ever" and the mulch has been most beneficial. We are indebted to our part-time casual Mark Ziersch for his dedicated work and his extended volunteer efforts over many hours each week in the Arboretum. Labelling of the roses has been a project in the making for the past years but now we are delighted with the result, as we are with the tree labels. The SA Palm & Cycad Group has added new plantings, which are an added interest. Issues still being pursued include leaflet boxes for self-guided information and the development, with the University, of a strategic plan for the precinct.
My thanks to all the Committee members who contribute their skills, knowledge and enthusiasm for the success of all we undertake. We are all very appreciative of the dedication of our Director, Jennifer Gardner and her never-ending support. It was much appreciated when Jean Bird answered our call for an editor at the last AGM. We are losing the services of Roger Bungey tonight. He has served the committee extremely well over the past nine years. However,

I am pleased that he is continuing in his role as a Sunday tour guide. Our wonderful secretary Rosemary Sawley is resigning tonight, as is required by the Constitution, having served in that capacity for the maximum term of five years. Fortunately she is not resigning from the Committee. I, too, finish my maximum five years as President and am very aware of the need for some new blood on the Committee. Our treasurer Norma Lee will be presenting the financial report following me and we acknowledge the great job she does with some excellent help from our financial adviser, Peter Nicholls.

Our Constitution states that the Committee shall consist of 4 Officers and not fewer than two or more than seven ordinary members + the Director *ex officio*. As we have received the required number of nominations, I am happy to announce Bryan Milligan as President, Peter Nicholls as Secretary, Norma Lee as Treasurer, and me as Vice President for the 4 offices and Jean Bird, Colin Jenner, Rosemary Sawley, Judy Tyler and Lynda Yates as continuing committee members with Henry Krichauff and Jeanette Lord as welcome new members. We look forward to another challenging year ahead.

I move the adoption of this Friends of the Waite Arboretum 2006 Annual Report.

Cicely Bungey AM

TREASURER'S REPORT FOR 2005

I present the accounts of the Friends of the Waite Arboretum for 2005.

The major receipts for the year are:

Subs & Donations	$2,650
Beryl Martin Exhibition	$5,300

which make up most of the $9,300 surplus for the year. It is always pleasing to see the generous way many of our members add a donation when they pay their subscriptions. Thanks must also go to Beryl Martin for the opportunity to hold a most successful exhibition and the many volunteers who assisted with it.

We were pleased to be able to give on your behalf $18,500 this year towards the work of the Arboretum, as follows:

$6,000 for pruning
$2,000 for spreading mulch
$6,000 for new metal labels
$4,500 for some interpretive signs, three of which have been reproduced in the latest Newsletters.

This was about $9,000 more than our year's surplus, so our balance is now $22,000 (down from $31,000 last year).

Because Urrbrae House is closed this year, we can't plan any fund-raisers centred on it, so we have called for extra donations. There has been a very pleasing response and we hope to undertake more events in the future to raise funds for the Arboretum. This, after all, is one of the main aims of the Friends.

I thank Peter Nicholls, who continues to act as our financial adviser and also thank Bevan Craig, who has been a helpful auditor.

MOTION: "That the Financial Statement for the year ended 31/12/2005, and the Auditor's Report dated 21/1/2006 be adopted".

Norma Lee
Honorary Treasurer
5/4/06

2006/2007 COMMITTEE MEMBERS

The 2006/07 Committee members are as announced above in the President's Report.

GUEST SPEAKER

At the conclusion of the business proceedings, Prof. Chris Daniels Director of BioCity/Centre for Urban Habitats, University of Adelaide presented an extremely interesting and well illustrated talk, during which his enthusiasm was evident, entitled "Adelaide Nature of a City. The Ecology of a Dynamic City from 1836-2036". A summary follows.

Chris Daniels, a herpetologist from Adelaide, became interested in urban environments after much travelling and formed Bio/City because (1) most plants and animals are represented in the Adelaide region and (2) 90% of the population lives in the metropolitan area and so most children are educated in the city and need to be exposed to environmental knowledge. Bio/City comprises 40 institutions and 150 people involved in environmental issues and is concerned with (1) Research (2) Communication (3) Education.

In 1836, the Adelaide Plain comprised a patchwork of different environments – mangrove forests, reed beds and samphire swamps, extensive areas of grasslands and mallee and open woodlands; the reed beds were reported to harbour > 1,000 birds.

Before 1836 there were ~ 1135 spp. of plants, ~ 290 spp. of birds, 40 spp. of mammals and 56 of reptiles but for each of the first 20 years of European settlement, massive land clearing for townships, grazing and agriculture occurred. As a result of this, biodiversity declined. The Black Forest was cleared and such was the suburban development that by the 1850s, Adelaide needed to be re-greened. This was achieved by street tree and garden planting which led to an increase in biodiversity but a decrease in native plants so that by 1870 50% of plants in Adelaide were exotic. The population of native mammals declined with the arrival of rats, rabbits, foxes, etc.

Sparrows were introduced in 1870 and the SA Acclimatisation Society (founded in 1878) was responsible for the introduction of many exotic species that reminded the members of home.

Woodland, insectivorous and nectarivorous, although not granivorous, species of birds have declined in the metropolitan area since 1950.

Our habitat now consists of (1) Street Trees, all of which have environmental value regarding biodiversity (2) Open Space and Cultural Gardens which have little environmental value and not much scope for biodiversity (3) Back Yards. These are most valuable if there are bushy plants between the houses to provide homes for assorted animals and areas with fruit trees to provide food.

Environmental Conflict occurs when a resource has multiple stakeholders e.g. fish, and anglers v. dolphins, mangling of trees for powerlines or when there are perceived dangers e.g. sharks in metropolitan waters which, in reality, pose little threat to humans and major bushfires, which occur infrequently but whose perceived threat has led to inappropriate clearing. There is a risk of flooding on the Adelaide Plain but this can be minimised if appropriate steps are taken.

Some Environmental Solutions are (1) Multiple use of resources e.g. SE parklands (2) Managing animals e.g. culling koalas (very difficult because of polarized views) (3) Encouraging native animals where they occur e.g. possums are rare in the State but are regionally abundant.

There is some Environmental Hope for the future e.g. the planting of median strips, the development of frog ponds, etc., and the fact that people seem to be increasingly aware of the need for biodiversity and management of the environment.

IN THE ARBORETUM

OUR DIRECTOR

I draw your attention to the fact that Friday 5 May marked the 20th anniversary of Jennifer Gardner's custodianship of the Arboretum. I am sure that all Friends will join me in congratulating her on the wonderful work done during her tenure. May she continue as Director for many years to come.

Jean Bird

THE COST OF FLOWERING

The Arboretum tree # 473A (G11), *Pyrus amygdaliformis*, has intrigued visitors for the last decade. Alternate halves of the tree flower in any one year. This case seems distinct from the well known "on and off" years in some fruit trees, e.g. apples, where the whole tree sets fewer or more fruits in a season.
So far, no break down of the pattern has been observed in the *Pyrus* - e.g., just a few flowers on the "off" half.

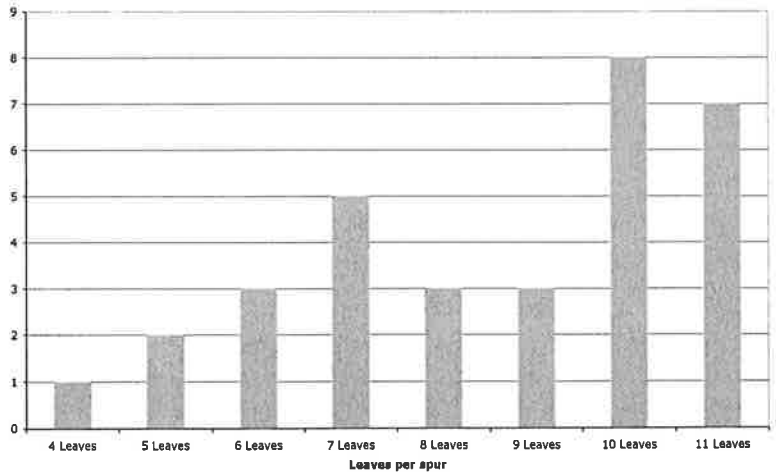
This tree flowers on short spur growth on stems more than a year old. Each spur may flower over a number of years. The effects of the heavy flowering can be seen in the leaf development, on the flowering spurs, in the subsequent season.

Fifteen spurs from the side that flowered in September 2005 were sampled and had a mean of 7.5 leaves per spur and the dry leaves had a mean weight of 0.041 g. Nineteen spurs from the non-flowering side had a mean of 9.4 leaves per spur and the dry leaves had a mean weight of 0.061 g.

There was a substantial overlap in the number of leaves per spur so that number alone is not critical, though one would need to label individual spurs and follow their flowering history to be sure of that. So, not only were there fewer leaves per spur following flowering but also, the individual leaves were smaller.

The overlap in number and weight of leaves per spur suggests that there is some other factor involved. This is demonstrated by the fact that, to date, there has been no break down in the pattern, i.e. a larger or more leafy spur on the flowering side does not follow again in the following year.

Are the nutrients in the trunks of the two halves controlling the flowering?



Pyrus # 473A

E. side
15 spurs
= 113 leaves
= 7.53 per spur
wt dried leaves = 4.50g
= 0.041g per leaf

W. side
19 spurs
= 178 leaves
= 9.36 per spur
wt dried leaves = 10.85g
= 0.061g per leaf

David Symon

POT – POURRI

NOT THE UNKINDEST CUT OF ALL*

You aim to have trees in your garden or want to grow a woodlot. Often the young trees you've transplanted begin to grow crookedly, or are a poor shape due to recovery from a variety of injuries. A woodlot owner will want to grow straight trees, either as good poles or for useful timber and can remedy faults.

The individual gardener wishing to have a straight, single trunk on a prized specimen tree or tall shrub can also avoid crooked growth. Most gardens benefit from tall plants with a crown "break" (the point at which the gardener wants stable branches to emerge) above head height. This has several advantages. In a landscaped garden it adds formality as it places the tree crown in a visually advantageous position. In a practical sense, it provides working space and means that visitors can walk or sit beneath a shady canopy without being impeded. It allows sunlight to penetrate early and late in the day, which, in turn, means some flowers and shrubs can be planted around the trunk. Shrub planting can also help to restrict the tree's root spread by competition for space, thus slowing growth rates of the tree itself to an acceptable level for a landscaped garden.

A straight trunk can be obtained by staking or, alternatively, by shaping with tedious gradual pruning, but cutting back a young tree to around 15 - 18 cm above the ground is probably the best way to improve development and produce a vertical trunk. The practice of cutting the stems of young trees a few centimetres above the root collar zone has been found useful for millennia. It is another case of art imitating nature. Observers have been aware in South Australia, for example, that lopping is a defining feature of the "mallee" habit among native eucalypts. In the case of mallee, the term 'severance' is probably better, as the 'lopping' can be caused by grazing animals or moderate to high-intensity bushfires. Mallee species, like a large proportion of the eucalypts can utilize a lignotuber, a characteristic swelling at the root-collar, to generate adventitious buds that form vigorous young shoots at or above ground level. In fact, many Australian woodland tree and shrub species utilize this feature to regenerate quickly and positively after significant disturbance by fire, thus regeneration is far more vigorous than most seedlings are able to achieve. Vegetative recovery was soon apparent after the practice in the 19th and 20th centuries of broadacre 'scrub-clearing' by anchor-chain and stump-jump ploughs, if consolidation for agriculture didn't proceed quickly.

Significant tree and shrub regeneration predominantly by seedlings, appears to have occurred very infrequently in the woodland zones with low rainfall and then only after catastrophic destruction of the existing vegetation, apparently at intervals exceeding one or more centuries. Consequently, many shrubs and trees rely on vegetative means to stay alive, once they've established a rootstock, until the 'big occasion' when all the 'chips are down'. In the short term, adventitious buds on trunks and branches are among the principal methods of vegetative recovery after storm or fire damage, or insect attack.

One of the most striking records of the intrinsic value of straight, naturally-occurring coppice poles comes from the American Civil War in the 1860s. The forests within reach of the railroads had been heavily cut for timber, but only of easily man-handled, middling sizes. Initially these were for railroad trackworks, sleepers (ties) and trestle bridges but subsequently for fuelling the steam engines. Larger-sized trees were left for sawmillers to cut. In the war military advances and retreats followed the railroads and many bridges were destroyed (see, for example, Buster Keaton's classic film "The General" of 1927, or Disney's remake, "The Great Locomotive Chase" (1956), about one famous

incident, available on video). The stumps sprouted but there was not enough time for poles big enough for bridge rebuilding to grow and hence they were becoming in short supply by 1861. An engineer, Herman C. Haupt, one of the the two men who built the US Military Railroads (said to have prevented the South's seccession), became a brilliant bridge builder. After Abraham Lincoln had seen one of his works he said "That man Haupt has built a bridge across Potomac Creek over which loaded trains are running every hour, and, upon my word, gentlemen, there is nothing in it but beanpoles and corn stalks."

The production of life-preserving adventitious buds low on the main trunk, or at the root collar, of many forest species, is the basis of silvicultural practices widely used throughout the temperate regions to produce specific kinds of forest and woodland products. Coppice, the deliberate severance by humans, is probably the widest and best known of these. Hazel *(Corylus avellana)* coppice has been traced from Neolithic times in Europe. When I was a boy in the first half of the C20th , hazel coppice was cut for use in the vegetable garden as bean-poles, frames for runner-beans, twiggy 'brush' for garden peas and broad beans supports, as faggots (firewood for the wood oven of the village bakery) and, not least, as split poles for weaving wattle fencing panels (a flexible temporary fencing commonly used around gardens and on farms (at lambing time). Throughout mediaeval and early-modern Europe and in North America, posts and rails of oak *(Quercus* spp.) and ash *(Fraxinus* spp.) produced from coppicing were used for house framing. In France a system was evolved that combined the culture of large timber trees with an understorey of coppice of the same species, so as to maximize a flexible supply of forest products. In the settlement of Australia the local natural eucalypts were used for building and fencing. Perhaps, not surprisingly, this led to early attempts at coppicing eucalypts *(Eucalyptus baxteri)* by Woods and Forests Department in SA (late C19th) but results were disappointing due to low vigour and poor form. Coppice willow in Europe, known as osiers and withies, was used for basket making; this same use has been transferred nowadays to eastern Asia and the products are found in local hardware and cane furniture shops. Coppicing is alive and well. One notable non-traditional modern use is the coppice production of willow and poplar poles grown and intensively harvested every few years as renewable fuel for power stations in Sweden and Finland, the ash being recycled to the rootstocks to restore the nutrient drained by harvesting.

Pollarding is a similar practice where the primary cut is made around head height in species with adventitious buds developed up the length of the trunk. The frequent pollarding of Sugar gums (*Eucalyptus cladocalyx*) in many Mid-north towns in this state was a once or twice only operation but one which relied on the ready production of stem adventitious buds on this non-lignotuberous species, one example of relatively few low-rainfall eucalypt species. The reason why it was done so widely is now largely forgotten but was possibly related to extreme drought causing marked dieback of the original crowns. Mallees, incidentally, as a group have low or no ability to initiate adventitious bud development on trunks or branches.

What is all this leading up to? Neither practice need be aimed at commercial ends. A low cut when trees are still small, established for two - four years, can

often result in a vigorous, straight leading shoot that often escapes further harm near ground level. This again imitates nature as it is found, for example, with many oak species whose seedlings are grazed by deer, rabbits and insects, or, which after attack by fungal leaf diseases, mildews and leaf blights, become distorted after the appearance of secondary 'lammas' (or autumn) shoots. Such saplings may suffer attack for several years but then, the crux of the matter, having established a strong root system, they throw up a strong shoot which in one season grows higher than the mouths of the grazing animals and above the still, damp conditions near the ground that favour fungi. Some oak seedlings germinate under shrubs that protect the seedling from grazing but little rain penetrates and they only receive filtered light and so suffer stifled growth rate. However, once a robust root system has built up, these species, too, produce a vigorous straight leader, which emerges above the highest parts of the shrub cover and allows the young tree to develop strongly in full sunlight from this point on. I have seen this, for example, with European oak (*Quercus robur*) 'nursed' by blackberry canes in the Black Forest in Germany and with Tabor oak (*Quercus ithaburensis)* 'nursed' by the ground-spreading *Pistacia lentiscus* on the dunes of the coastal plain near Caesarea in Israel. Just about any tree species that has evolved in a forest habitat will have genes which allow it to grow tall. Ultimately this is to gain full sunlight and exposure to pollinating agents.

So, the opportunity is in their genes; it just needs releasing. It's far from being the unkindest cut of all. It's a silvicultural technique available to all tree-growers with vision for specimens in gardens or arboreta, woodlots or plantations.

* see Wm Shakespeare; *Julius Caesar,* Act 3, Sc. 2

Robert Boardman

DUTCH ELM DISEASE EXERCISE

28 March 2006

In late March a meeting was convened to discuss the emergency response required **if** Dutch Elm Disease (DED) were found in Adelaide at any time in the future. DED is currently not present in Australia but is a real threat and is present in New Zealand. The exercise, which was called Intense Goose, was held at the Adelaide Town Hall, and David Barwick attended as the representative for Friends of Waite Arboretum.

The meeting was called and chaired by PIRSA (Primary Industries and Resources department of SA) with the assistance of OCPPO (Office of Chief Plant Protection Officer) and the Adelaide City Council. Around 30 people attended the exercise representing various Federal and State government departments, local councils, Police, SES, Botanic Gardens, and the Phylloxera and Grape Industry Board.

Dutch elm disease (DED) was first described on elms in the Netherlands in 1921. DED is caused by a fungus in the genus *Ophiostoma* (formerly *Ceratocystis*) by the species *O. ulmi*, or the more virulent strain *O. novo-ulmi.* The fungus has been spread around the world by *Scolytus* bark beetles in elm

wood colonized by the beetles. Subsequently much of Europe and the USA have been denuded of elms. Millions of trees were killed in the eastern United States within a decade in the 1950s to 1960s leaving whole towns without the major shade tree (some places, like Moline, Illinois, had only elms!).

The symptoms of DED are a sudden wilting of leaves on some branches but sometimes, the entire tree. Wilted leaves curl and turn yellow, then brown and fall off the tree and most branches then die. Often this process takes more than a year.

During the exercise strategic discussion points included the legal situation of the various organizations involved, existing government arrangements, establishment of an Emergency Plant Pest Response Plan, surveying and delimiting the extent of the disease, risk assessment, communications, information and media management.

Operational discussion points included decision-making processes, agency liaison, equipment, permits, access rights, treatment options, movement controls, communication with the community etc.

Some of the main concerns of the participants that were raised were:

- Recognising the complex legal issues involved and ensuring that advice is received from legal advisors.
- Ensuring that the network begun through participation in this exercise is maintained and expanded.
- Addressing the need for information about this disease and others to be easily accessible and understandable for the general public.
- Ensuring that similar exercises are run in the future, focusing on other potential plant health threats in an urban environment.

Overall, Exercise Intense Goose achieved its goal and was a great chance for people from different organizations to come together and discuss the response to a plant health emergency in an urban environment. This is reflected in the overwhelmingly positive comments made at the hot debrief and on the evaluation forms.

David Barwick

FORTHCOMING EVENTS AND DIARY DATES 2006

Monday 31 July at 8 pm: – General Meeting: Robyn Barker will speak on "Napoleon's Willow: an overlooked means of dispersal".

Saturday 12 August – Sunday 20: Science Hub at the South Australian Museum. Joint stand with Treenet.

Sunday 19 November: Waite Campus Open Day. Arboretum participation will include special guided walks and a joint stand with Treenet / Shading SA. Volunteers needed to talk to visitors and promote the Arboretum & Friends.

Monday 4 December 6 – 7.30 pm: Joint Christmas Party with Friends of Urrbrae House, Friends of Waite Conservation Reserve & volunteers.