

THE FRIENDS OF THE WAITE ARBORETUM INC.



WAITE
ARBORETUM

NEWSLETTER NO. 45
Spring 2005

Secretary
Mrs Rosemary Sawley
8379 7102

Editor
Mrs Jean Bird
8272 4140

GENERAL MEETING

Held on Monday, 15 August 2005

NOTES FROM THE PRESIDENT

Since our Winter newsletter we have seen a great transformation in areas of the Arboretum and around Urrbrae House. The salt damp work on the eastern aspect of the House was finally completed early in September. There is an eastern door with a graded path leading up to it, which will enable wheelchair access to the House. This is something that will be welcomed by those who have been unable to enjoy being able to visit any exhibitions previously held in the House. Work on the final stage of the salt damp treatment is scheduled to begin on 9 January next year.

The Sensory Garden is looking great and the Garden of Discovery has seen major changes. Sample wheat varieties, planted in donated GreenWells and the story of their evolution by scientists of the Waite Campus has been of much interest to visitors. Unfortunately they have been very tempting to some four legged visitors too and we have had to provide some novel wheat protectors around them. Members of The Palm and Cycad Society have generously planted more plants in the area which they tend so lovingly, just off to the right as the main drive goes up to the House.

The Arboretum has seen the mulching of the Elm Avenue and the planting of 40 more trees. We have received a batch of new tree labels with 300 metres of stainless steel cable donated by Mitre 10, Glenunga. We hope these will prove a major deterrent to vandals when attached. The northwest corner of the Arboretum continues to develop under the care of the dedicated volunteers who

have been propagating seedlings and are now weeding around them as the weeds flourish following good rains.

The new roses around the House and those of the whole area of the rose garden are looking very healthy. We are most grateful for the ongoing support of Neutrog. The Sudden Impact for Roses has been responsible for the many comments we receive "the roses have never looked better".

Our August general meeting with guest speaker Graham Brookman was both interesting and challenging. The planned visit to his permaculture property near Gawler on Sunday 9 October should be of great interest to all.

The opening night of Beryl Martin's Art Exhibition was very successful. Beryl's paintings are bright and cheery and are enjoyed by all. We invite all who assist with the exhibition to join us for Christmas drinks on Monday 5 December.

Warmest regards

Cicely Bungey

PROFILE OF SPEAKER

Graham Brookman, the son of an engineer, decided early in life that he wanted to be a farmer. His love of trees developed as a result of his association with the Waite Arboretum. He trained at Roseworthy Agricultural College (now Roseworthy Campus of the University of Adelaide) and, during the Vietnam War, was sent to Malaysia where he saw a different type of land use from that which is generally practiced in Australia, viz., polyculture as opposed to monoculture. This stimulated his interest in a different method of land use and ultimately led his and his wife's purchase of a property near Gawler in 1983. They determined to put into practice the permaculture design system devised by Dr Bill Mollison and David Holmgren. When they bought their property, apart from barley and some old River Red gums along the Gawler River, there was not much else. Now the property is a thriving, environmentally sustainable Permaculture Farm where more than 160 varieties of food are organically grown. Graham and Annemarie Brookman are passionate about sharing their knowledge and do this by running short courses on sustainable ways of living and by conducting public field walks in autumn and spring.

Graham Brookman was guest speaker at the Friends of the Waite Arboretum meeting on Monday 15 August and a summary of his talk, entitled "Permaculture – design for sustainable living" follows.

Throughout his entertaining and well-illustrated talk, Graham's enthusiasm for sustainable agriculture was evident. Some of the most salient points which he made were: 1. Because of our overuse of resources, we would need 3.5 more planets to sustain the world population if everyone lived like Australians. 2. Unsustainability is indicated by climate change, salinisation, erosion, acidification, eutrophication, extinction, starvation and genocide. 3. Largely because of use of nitrogen fertilisers the world's population has boomed to 6.3

million and, whereas, as Bill Mollison and David Holmgren have postulated, various people, including Australian Aborigines, in the past probably needed about 1 ha of land to meet their needs, modern Americans need 9.5 ha with other people generally needing less but not as little as 1 ha. 4. Predictions for climate change in SA by 2070 are that the rainfall will be down by 30%, the temperature will rise 3 - 6° C, CO₂ levels may double and sea level may rise by ½ m. An increase in winter temperature will mean that many plants, e.g. pistachios will probably not be able to set seed, although others, such as olives and carobs might not be affected. 5. The ethical principles of Bill Mollison and David Holmgren, the fathers of permaculture, include care of the earth, care for others, personal responsibility for population growth and consumption of the earth's largesse and the necessity to teach our children these. 6. The design of a permaculture farm (or garden) must take into consideration abstract components, site components and energy components and each element must support more than one function. For example, hens supply eggs, eat food scraps as well as grain, destroy weed seeds and eat some garden pests. 7. Good management practice consists of (1) Observation e.g. Annemarie's observation that stinging nettles deterred rabbits from eating vegetables. (2) Reduction in use of resources (e.g. converting wheat to breakfast cereal uses 5x more energy than the grain contains), reusing, recycling, composting, harvesting solar and wind powered energy. (3) Energy efficient designs and small scale systems which leave space for other life forms and create a diverse environment to encourage, for example, birds and attract insects which eat pests. (4) Even home gardens should be productive as well as ornamental and any environmentally sustainable land use should take into account future climate change. (5) Permaculture design on a larger scale should be split into zones according to the use of the particular product e.g. strawberries, vegetables etc. should be in the backyard zone (Zone 1) with hens and shrubs further away (Zone 2) and there should be a bush zone (Zone 5 at the Food Farm) where native plants and animals can flourish.

The zones at the Food Farm, as well as many other aspects of it were shown in excellent photographs so that the audience could see how successful sustainable land use can be if one has a mind to it.

Jean Bird

FORTHCOMING EVENTS AND DIARY DATES

THE FOOD FOREST OPEN DAY: Sunday 9 October at Gawler – see www.users.bigpond.com/brookman

CHRISTMAS PARTY: 6 – 8 p.m. Monday 5 December in the gardens

NEW MEMBERS

We welcome Maxine Connor-Lange and family, Glen Osmond, who have renewed membership, and Bob Allanson, Plympton.

IN THE ARBORETUM

PEPPER TREE (*SCHINUS AREIRA*)

There is no pepper tree in the Arboretum but there are a couple of mature trees at the southern end of the Rose Garden. Their absence is surprising but perhaps their frequency in Adelaide, the parklands and the countryside rendered them too common. This, however, did not prevent numerous ash, cow-itch and candle pines being planted.

Pepper tree is now widely grown in middle and southern Australia but is rarely seen in the tropical areas. It has been so successful that it is now feral in many areas and is slowly invading arid to moderate rainfall areas, particularly along seasonal creek lines and washes.

Pepper tree is an evergreen tree with an attractive weeping habit, with pinnate leaves that are shiny, light green. The sexes are separate, the inflorescence is a panicle, about 15 cm long, of small, yellowish-white flowers and may be followed by bunches of attractive, pinky-red berries. With age, the trees produce massive lower trunks, often uneven, and may exude some clear gum. Their success after a dry summer can be seen along Bartels Road off East Terrace where the inappropriate elms look staggy and half dead and could readily be removed, while alongside them are green and graceful pepper trees looking fresh and cheerful.

Pepper trees belong to the family Anacardiaceae which includes cashew nuts, mango, poison ivy and ornamental *Cotinus* and *Rhus*. The genus contains about 30 species of which three (*Schinus latifolius* [# 342 (F8)] and #681 (E8)], *S. lentiscifolius* [#679 (F9)] and *S. polygamus* [#329 & # 332 (G7), #675 (F7)]) are growing in the Arboretum. *Schinus areira* is native to the western slopes of the Cordillera (Andes) of Peru and is there called Molle or Mulli. The Peruvians use the seeds to produce a drink by soaking the ripe seeds in water to dissolve the sugary covering, the water is sieved to remove the bitter seeds. If not drunk, it can be concentrated to produce a syrup or fermented to produce a volatile oil and the milky sap from the cut bark produces a mastic which is used medicinally.

The trees were not known in the West until post-Columbian times when they were first grown in Mexico. However, the culinary and medicinal uses of the tree appear to have remained in Peru. The tree was growing in southern Europe by 1579 and became widespread in Spain, Italy and the French Riviera. It was available in South Australia at least by 1858.

David E. Symon.

So far, 12 interpretive signs have been prepared and put in place. Four others are in preparation. Below, is a copy of the sign for Californian Buckeye.

Aesculus californica Californian Buckeye

Aesculus is one of three genera in the Northern Hemisphere Horse Chestnut or Buckeye Family Hippocastanaceae. The genus includes some of the most beautiful flowering trees like the horse chestnut *A. hippocastaneum*, a native of the mountains of Greece and Albania, and there are many cultivars and hybrids like the red-flowered *A. x carnea*.

Aesculus californica is one of California's most handsome and widespread trees. It occurs naturally on the dry slopes and in canyons of the foothills along the length of the Coast Ranges and Sierra Nevada mountains. It has a short trunk, rounded crown and grows to 7 -12 m at maturity.

Its attractive, bright green chestnut-like leaves emerge in early August and it may produce up to 40 cm of new growth by mid September. In October a profusion of large upright, terminal spikes of dense pale pink flowers appear.

With the first hot summer weather, the leaves are shed, leaving a beautiful chalky-white framework. By autumn, the silvery bare branches are hung with numerous shiny brown, woody fruits the size of a hen's egg, each with a single seed.

Californian buckeye is ideally suited to our climate and, once established, thrives without summer watering. Its appearance is striking year round and it certainly deserves a place in our waterwise gardens.



Drawing by Emma Kinnane, text by Jennifer Gardner. Sign donated by The Friends of the Waite Arboretum Inc.

OTHER INFORMATION

DUTCH ELM DISEASE IN ENGLAND

Dutch Elm Disease (DED) is caused by a fungus, *Opiostoma ulmi*, whose spores are carried into the bark of the trees by the European elm bark beetle, *Scolytus multistriatus*. Infected trees usually die. Dutch Elm Disease, named because it was discovered in Holland in 1917, by 7 women scientists, appeared in England in the 1960s and within 20 years had destroyed 17 million of the country's 23 million English Elm (*Ulmus procera*) trees, leaving most of Britain devoid of elms although some survive in Brighton and Edinburgh, mainly because those trees which were infected were destroyed, thus halting the disease. Elms have also survived in the coastal valleys of East Sussex, probably because the trees were isolated and have been managed well.

Although there is considerable regrowth in elms, they are attractive to the elm bark beetle when corky bark has developed after 15 or 20 years, become infected and usually die.

DNA fingerprinting has shown that English elms show little variation in their DNA and so it seems likely that most of them are clones derived from a single parent tree which has reproduced by suckering and, also, from planted cuttings. This extraordinary similarity in their DNA makes elms particularly vulnerable to mass destruction by disease since they all have the same level of resistance, which, in this case, appears to be not much, if any.

Some of the reasons that so many elms have been planted in England (and other places including Elm Avenue in the Arboretum) are that they are very attractive, tolerant of poor soils, water logging and conditions which are generally unfavourable for other trees. In addition, they provide shade for stock and their leaves are nutritious.

According to a report in a recent issue of *The Independent*, large elm trees which are healthy and are still growing are being sought. It is hoped that a more resistant elm will be found among these remaining stands of large trees. To this end, the Ramblers' Association began the search in 2001. The search is now organized by the Ancient Tree Forum and the Woodland Trust. To the end of 2004, only 284 large elms had been identified although how many (if any) of these were *U. procera* was not specified. Britain's Conservation Council is monitoring cuttings which have been planted from surviving trees in parks and woods to see if they succumb to DED. This is of necessity a long term project since the trees are not susceptible to the fungus until they are about 20 years old. Imported elms which are thought to be resistant to DED are also being trialled although they may prove to be susceptible in the long term.

Dutch Elm Disease had never been found in Australia and the Friends of the Elms Inc. are, among other things, working to educate the public about it. They also maintain a register of all elm trees in Australia in case DED does arrive here. Imagine what it would do to our lovely Elm Avenue if it did.

Much of the information in this note has been derived from an article in *Elm Watch Newsletter of the Friends of the Elms Inc.* vol. 14 No. 2 July 2005.

Jean Bird

IMPORTANT GUM TREES

Some prominent eucalypts grow in the Adelaide area. Their importance lies in their age or size. Two species, *Eucalyptus camaldulensis* (the River Red Gum) and *E. cladocalyx* (the Sugar Gum) growing in the Adelaide area were surveyed in April 2003 by Kyle Penick and their circumference (at about 1m above ground level) and height were measured.

Eucalyptus camaldulensis occurs throughout SA except in creek-less areas. In dry areas it is confined to the banks of creeks and has been used in aerial photography to map watercourses. It was named *E. rostrata* in 1847 but this specific name was predated, due to the fact that it had been listed by Denhardt as growing in the garden of a monastery of the Camalduli, near Naples, in 1832. I first learnt it as "*rostrata*" in about 1949. River Red Gums grow in many areas on the Adelaide Plain associated with watercourses.

Sugar Gums are not native to the Adelaide area but occur naturally on Eyre Peninsula, the Flinders Ranges and on Kangaroo Island. They are small, straggly trees on Eyre Peninsula but can grow to 25-35m in the Flinders Ranges. Their common name is derived from the fact that the young foliage is sweetish and thus favoured by livestock.

Seven mature *E. camaldulensis* were measured in the Adelaide Metropolitan area. Of these, the tallest (13.7m) was the "Monarch of the Glen" in Brownhill Creek Caravan Park; the shortest, growing in Lochiel Park, Campbelltown, was 7.0m. The tree measured on the Waite campus was 7.1m. The tallest River Red Gum measured in the Adelaide Parklands was a tree with multiple trunks on Fullarton Road at the 550 m mark of the Victoria Park racecourse, which was 7.1 m; the smallest, planted c. 1857-58 was on the corner of Hutt Road and South Terrace. Seven River Red Gums (2 in the Botanic Garden and 5 in the Botanic Park) have been identified as "original flora" i.e. as having been growing there before European settlement. The trees included in the survey appear to have been planted, probably round 1857.

The Sugar Gums in Sir Walter Young Avenue, Waite Campus, were planted in 1877 and the tree surveyed was 6.6m. The tallest Sugar Gum measured in the Adelaide Parklands was 6.0m (in Palmer Gardens, North Adelaide) and the shortest in Park 18 (Wita Wirra) on the west side of Hutt Road. The Palmer Gardens tree was possibly planted in 1854 by George Francis prior to his becoming the first Director of the Adelaide Botanic Garden in 1855. Although this tree is about 20 years older than the one in Sir Walter Young Avenue, the discrepancy in height might be accounted for by the fact that the Waite campus receives about 50mm more rain per annum than North Adelaide.

The data relating to trees surveyed and measured were obtained from an article, PROMINENT GUM TREES, by Kyle Penick in "Parkland News", December, 2003. Most of the general information about *E. camaldulensis* and *E. cladocalyx* was derived from *Flora of South Australia* 2nd edn (1964) by J. M. Black.

Jean Bird

COMMITTEE MEMBER PROFILE

LYNDA YATES

I was born in Ramsgate, Kent in the "Garden of England". Both my parents were keen gardeners and were also interested in wildflowers and wildlife. As a child I developed a keen interest in nature although it took a lot longer for the gardening bug to bite!

I was mad keen on animals and horses and wanted to be a vet. However my physics and chemistry results weren't good enough so I took a degree in Zoology and Physiology and followed it with a Masters degree in Environmental Resources at Salford. I hoped this would lead to one of the few jobs then available in the environmental field – National Parks or some sort of environmental research.

I applied to the Civil Service for a variety of jobs in the Ministry of Agriculture, Fisheries and Food (MAFF) and other areas. Also on the strength of a day course in BASIC for computers I added computing as my final choice. That was the undoing of my career in the environment as, unbeknownst to me, the Civil Service was always short of computer staff and I was offered a trainee programmer job in Cardiff, Wales, at an obscure Government department, and took it.

I stayed in Cardiff for three and a half years and then moved to London and various jobs in the City of London as a computer analyst/programmer in the banking sector. I was there for ten years, working at all the big banks, mostly as a contractor, and had to satisfy my yearnings for nature by becoming involved with the local open spaces near my home in North West London.

My next big adventure was to spend eighteen months travelling the world with my partner Malcolm and some friends before returning home. However, after the travels, London seemed mundane and so we decided to emigrate to Australia. I got a job in Adelaide and came over here in October 1993. I have not regretted it although after five years' working, I could not find another job, the computer banking sector being too limited here. I decided I could just manage without paid work and have enjoyed the freedom since. I have taken the opportunity of greater space here to acquire two dogs, four cats and a Siamese fighting fish, which satisfies my desire for animals and takes up a lot of my time (but my cats stay in at night to avoid eating any wildlife!).

I formed a deep attachment to the Australian bush soon after arriving here. The sense of space and the wild animals living so close to people amazed me. I have since realised that the extinction debt of all the clearances means that many birds and animals may become locally extinct, especially as the city becomes denser and the large old gardens and trees become courtyard homes. I also became aware of non-native weeds and came to realise how little native bush is left and how little of that is unspoilt.

I came across the Waite Arboretum early on in my survey of the city and became a founding member of the Friends of the Waite Arboretum and a volunteer some years later. When I was no longer working, the main call on my time was a project I took on five years ago, close to my house in Seacliff. The railway passes nearby and we walked our dogs there and observed that olives and castor oil plants were beginning to become dominant. When I complained, TransAdelaide said I could take on the land if I wanted to and so began my project. It was a steep learning curve! With assistance from the local council, members of the local community and Provenance Plants, I have revegetated the half-kilometre strip with plants appropriate to the area and of local provenance. Trees for Life were invaluable supporters as I went on Bush for Life working bees and courses to learn to identify the weeds and the natives. It seemed every plant I had admired in my ignorance was actually a noxious weed! Dr Jennifer Gardner has also helped me many times to identify plant samples I have taken in to her.

I have grown trees and collected seed for Trees for Life for several years and, by helping with working bees and planting, have become familiar with the plants native to different areas. I am also an active member of Friends of Marino Conservation Park, the dune and environmental volunteer group at Holdfast Bay, the Million Trees Project and I am Treasurer of Friends of Waite Conservation Reserve. I also am a community member of the Environmental Advisory Committee at Holdfast Bay Council. I volunteer at the Waite Arboretum although I am still more interested in the natives than the roses, particularly the North West corner where the old grey box woodland understorey is being restored. I continue to realise how little I know and try to keep learning. The South Australian flora and fauna fascinate me and I hope that more South Australians will learn to appreciate them and help to save them while there is still time. I really enjoy doing this and my reward is walking down the rail corridor and seeing the acacias in flower.

Lynda Yates



**WAITE
ARBORETUM**

Give a gift with a difference and support the Arboretum too!

GIFT SUGGESTIONS

T-shirts: forest green with white Arboretum logo, 100% cotton. Available in M, L, XL
\$15

JUST RELEASED!

Ivan Holliday's "Hakeas: A Field and Garden Guide"
\$30

Ivan Holliday's "Melaleucas: A Field and Garden Guide"
\$32

Ivan Holliday, Bev Overton & Dean Overton "Kangaroo Island's Native Plants"
\$16

Dean Nicolle's "Eucalypts of South Australia"
\$25

Beautiful cards with flora and fauna themes by Beryl Martin & Pam Brinsley
\$3

Exquisite silver jewellery and ornaments individually crafted by Pat Hagan
from \$35

**Pet/paperweight echidnas made from Australian timbers by Charles Greig – an ideal,
unbreakable gift to post overseas**
\$25

**Available from the Arboretum Office* (Jennifer 8303 7405)
& at the Christmas Party 5 December**

* At this busy time of year, it is advisable to ring Jennifer first 8303 7405