

THE FRIENDS OF THE WAITE ARBORETUM INC.



NEWSLETTER

SPRING 2002

No 33

Secretary
Mrs Rosemary Sawley
8379 7102

Editor
Dr Barbara Possingham
8363 0346
mlposs@ace.net.au

GENERAL MEETING

Salty soils - how DO some plants cope?

At our Meeting on August 5 we were fortunate to have been addressed by Dr Mark Tester. Mark is a graduate of the University of Adelaide and currently leads the Plant Stress Group in the Department of Plant Science at the University of Cambridge.

There was a full house to hear this eminent scientist, local grown, telling of the research, which he and his team are undertaking into the problem of plants tolerating salinity. The audience was composed of people working directly in the field, scientists from the Waite Institute who are experts in other areas and some members, interested, but not scientific. Mark guided us all very capably through this complex topic.

The effect of salinity upon the world's food production is obvious in 7% of agricultural land and it is expected that by 2050 a quarter of Australia's arable land may be affected by this terrible problem. Scientists all over the world are tackling aspects of salinity and Mark told of the overwhelming need to refine techniques and the constant search by his Cambridge team for answers to combating this challenge to our environment. There is huge variation in plant tolerance and screening to find those best suited for research has led to a range of plants useful in experimentation. The aim is to identify genes responsible for salt tolerance and to either alter the genetic composition of plants so that they can effectively live with salt, by breeding methods and genetic manipulation or to alter the way that soil is managed to produce improved farming methods.

It is hard to understand the opposition to gene technology and the pressure put on scientists who seek through their research to improve the world's ability to feed its growing numbers. Listening to our speaker I could only be thankful that we are blessed with dedicated scientists like Mark, committed to seeking answers for problems which affect the whole world and to sharing the outcome.

Barbara Crompton

IN THE ARBORETUM

CORK OAK, *Quercus suber*

Cork oak, *Quercus suber*, family Fagaceae, is indigenous to the western Mediterranean region where it grows in Portugal, Spain south of the Tagus River and north-western Africa. It prefers sandy, well-drained, open sunny positions with slightly moist, acid soils, in pre-coastal and coastal regions. It is a fast-growing evergreen tree similar to the holm oak but not as big or good-looking with less dense foliage. It also has a thick covering of cork on its trunk and branches. In plantations it may grow to 20 metres but in its rocky native environment it is often smaller and stunted. Leaves are glossy green, leathery, lanceolate with serrate margins and downy-grey beneath; one of the several types of oak which have a pointed, single-lobe leaf instead of the classic oak-leaf shape. The cone-shaped acorns, 2-3 cm long, are much bigger than other regional oak trees.

The cork oak is an evolutionary success in a region also famous for wine growing. It is an especially famous product of Portugal; indeed cork products are Portugal's main export besides being used for corking hundreds of thousands of bottles of local wine each year. But as well as bottle stoppers, cork is also used in many other ways as it is water repellent, fire resistant and indigestible to animals plus it does not conduct electricity. This bark is rugged and thick, spongy, pale grey and deeply fissured. It is formed from layers of cells which have large concentrations of suberin, a wax, impregnating the cell walls. These remain attached to the tree after dying. This means that the species is well adapted to the Mediterranean climate protecting itself against heat and dehydration and surviving frequent forest fires. During a fire the thick cork layer protects the more sensitive, inner tissues of the plant in such a way that the tree does not die but shoots out again later. There are over 60 square kilometres of cork plantations in Portugal which produce 70% of the world's cork production. Spain also grows cork oaks commercially but to a much lesser extent than Portugal.

The bark is stripped off the trunk of each tree leaving the reddish-coloured trunk exposed - the branches are not touched. A cylindrical incision is made at the base of the trunk and then up to the first branch a lengthwise cut is made. The sheet of periderm is prised from the tree in a way that does not damage the vascular cambium. This process does not kill the tree and about nine years later new periderm has filled in and harvesting can be repeated. The trees are numbered, for example No 8 painted on a tree means that it was harvested in 1998. By cutting off only the outer dead corky bark, the tree is able to regenerate new cork tissue from the underlying live bark. In this way it is possible to take bark from a tree about every 9 years, and the tree itself is able to live for about 150 years.

The bark must be flattened after the cork is peeled from the trunk. It is then soaked for a period in water and dried. Only then is it dense enough to use. Trees must be 30 years old before the first cork can be harvested. This is called virgin cork and is low quality.

There have been attempts to grow cork oaks commercially in other parts of the world but these have not been able to compete with Portugal in terms of skilfulness and cheapness of labour. Cheap plastic stoppers for wine bottles are to some extent a threat to the cork industry but for the better wines, cork stoppers are still preferred. This is truly a renewable resource.

Mary Tester

There are two grand, mature cork oaks in the Arboretum. Planted in 1952 and 1954, they are in the main oak collection at G 12 and F 12.

Ed: There is also a fine cork oak in the cark park near Woolworths at Norwood and another near the cafeteria at the Adelaide Zoo.

TREENET STREET TREE SYMPOSIUM

September 5 - 6, 2002

The University of Adelaide, Waite Campus

The third TREENET Symposium was held on the Waite Campus in early September. The conference centre was packed with interested delegates who listened to the speakers attentively and participated enthusiastically. Altogether the atmosphere was excellent and Jennifer Gardner and team members Tim Johnson and Sean Donaghy must be congratulated.

Most of the 141 delegates came from South Australia, but 31 came from the eastern states, which indicates the growing interest in successful street tree planting in general, and TREENET in particular, is widening and increasing. TREENET, a collaborative based at the Waite Arboretum, stands for Tree and Roadway Experimental and Educational Network.

Following are some of the speakers over the two days showing the variety and depth of subjects and the importance of "getting it right" when planting new street trees and caring for existing plantings.

On Thursday morning Phil Hewett from the City of Newcastle opened proceedings showing the big picture with an overall view of a large number of trees giving their value for street plantings. He was followed by local IT expert, Sean Donaghy. TREENET on the web will be a great aid to anyone interested, anywhere in Australia. It's scope can be expanded continually and it is cheap!

Dr James Will from Burnley College, University of Melbourne, placed great emphasis on tree quality. For a successful streetscape the correct tree must be purchased; one must be most careful that they are named true to type, have been grown from first-class seed and are appropriately grown in their pots. Dr David Symon has a long and thorough knowledge of the Waite Arboretum. He spoke on the Arboretum's collection of 80 *Pyrus* which includes about 20 species and cultivars, suggesting a number which could be successful as street trees. Lyndal Plant from the City of Brisbane emphasised the importance of root space which is critical in paved areas in cities. She is introducing into Brisbane's street plantings a structural stone and soil mix which can be paved over without compaction. This allows successful tree root growth and has been used both in new plantings and to modify soils around existing trees.

Michael Heath showed how to minimise risks in street plantings to balance the good points of a tree with its liabilities. Street trees need to perform their intended functions but must remain safe at all times. A huge ask! Denise Schumann, a heritage adviser and cultural historian, brought a different aspect to the symposium. There is a growing awareness in Adelaide of the history of our trees (even if our arboreal icon is a dead gum tree)! After most of the native vegetation was removed, many early street plantings were badly chosen, for example in the mid-1800s a number of Moreton Bay figs were planted along Norwood streets. Most of these have since been removed.

The first session on Friday was given mainly to six students. Dean Nicolle, from Flinders University, listed a number of eucalypts that he has planted, many of which may be suitable for street planting. Anje Marwick from the University of Melbourne, spoke of her research on *Eucalyptus leucoxylon*. This tree is used extensively in Melbourne as a street tree. Kirsty Neaylon, a Waite Campus student, is currently involved in excellent research on improving ornamental eucalypts. Samantha Titheradge from A.N.U., has studied the probable reasons for die-back in Claret ash, a tree widely planted in Canberra.

An interesting change of direction came from two University of Adelaide, Economics Honours students, Philip Killicoat and Ewa Puzio. A study of the economic value of Adelaide street trees has not been done before. It was an interesting start to this study to hear their ideas and suggestions modelled, and costs versus benefits given.

Also in the morning session Lyndal Plant from Brisbane City Council spoke about the trials she is undertaking with the city's 360 000 street trees and Jim Hay from the City of West Torrens, who has about 40 000 street trees under his care, spoke of rectifying past mistakes and of his challenge with forward thinking to give satisfaction to ratepayers within budget.

Both days gave delegates the opportunity to visit the Arboretum. Thursday's session is recorded below and Friday's visit took the form of a guided walk under the charge of Dr David Symon and Roger Bungey. It proved a delightful walk combining pleasure with education.

This was a satisfying and at times challenging symposium, deemed by all to be a great success.

Mary Tester

Thursday's Guided Walk

The first part of the afternoon's proceedings began at the foot of one of the large pine trees, near the front of Urrbrae House, where Phil Kenyon led a discussion on tree pruning. He pointed out that it might take 10 –15 years for polyphenols to build up before a tree is ready to shed a branch. The importance of pruning strategies was emphasised in assisting the tree build up a branch collar and increase the polyphenols. If it is necessary to prune it was again reiterated about the importance of only pruning to the branch collar as some operators are still performing a flush cut against the trunk.

A tree's time is so different to human time. This was evidenced by both David Symon and Roger Bungey's recollection of the same pine 50 years ago being the same size as today. A discussion ensued about the time frame of a negative event in a tree's life and how long after the effect would be evidenced. An example of this was a huge old Ficus tree that fell over, in the grounds of a school, in Melbourne. No one could work out why until an elderly nun recalled 50 years previously a trench being dug close to the tree for a gas pipeline.

An important point was again raised that a tree can only ever be as good as the quality of the stock and that some tree species have been condemned as unsuitable for street trees when it was found to be the poor quality of the stock eg *Hakea laurina*.

We were then guided through the Arboretum, with various stops, to look at well developed and poor root systems, we saw the use of a load cell and an inclinometer to determine a tree's stability, we saw trees requiring selective pruning to remove co-dominant stems and an example of Mundulla Yellows.

Judy Fakes session focused on assessing soils in the field to ensure a tree's success when planting. She pointed out that most of us do not adequately assess the soil on a site, which can lead to poor tree root establishment due (usually) to poor drainage. She had set up various soil samples by an old soil pit from the 1950s, which was almost down to Fullarton Rd, at the bottom of the Arboretum. She was most envious of the wonderful soil profile at Urrbrae. Judy proceeded to take us through the correct procedure when assessing soil. We went through digging a hole, looking at the colour of the profile, smelling the soil, performing a field texture assessment, assessing the structure, and testing the pH of the soil.

I was particularly looking forward to Judy's session, as she was my Arboriculture lecturer at Ryde in Sydney in 1985.

Jill Woodlands
Horticulturist and Friend of the Arboretum

A WANDER IN THE 'WAITE'

As a long-time resident of Cross Road, Highgate, I looked from the front verandah of my house, the family home since 1918, out across the lower paddocks of the Waite Institute to the foot-hills. The view was that of a row of hills extending from Clapham to Glen Osmond.

I knew the district walks well. It was possible then to leave busy thoroughfares behind and find undisturbed semi-rural places close to Netherby and round-about. Sheep grazed, crops grew in lots and two schools were nearby.

Standing on the corner of Fullarton and Cross roads, you could see an unbroken line of majestic pines lining Cross Road, and bordering Waite land above and below Fullarton Road south. In front with its classic architecture was the Lodge. The road curved away up to the splendid buildings along the eastern side, their windows lit golden by the afternoon sun.

There on the left was the Arboretum, where my mother took me to look at trees and their descriptions on tags which told names (scientific and common), date of planting and place of origin. Grazing sheep ate the lower foliage so that the trees had foliage at a uniform distance off the ground, as if a ruler had been used to measure them.

We would seek out the Rose of the West (Ed. probably *Eucalyptus macrocarpa*) as having the most beautiful of flowers. It stood by itself as if to highlight its silver grey leaves and huge pink blossoms. The seed pods and blossoms were of disproportionate size to its spindly trunk and branches.

My mother painted this tree one year and put the finished work in The Advertiser Art Exhibition. We were most surprised to see a 'sold' red sticker on it at the Opening. I wonder where it is now.

The Arboretum is still a place where anyone can walk amongst trees and feel at peace with undisturbed nature. The ordered enclosures of agricultural experiments are close by, and academic work continues busily, but here the trees and birds live relatively undisturbed.

Jeanette Lindsay

NEW MEMBERS

A warm welcome to the following new members:

Verna Fairley, Adelaide
Deidre McKay, Highgate

ARBORETUM NEWS

The recent TREENET symposium was well attended and deemed to be a great success. All the speakers were of high calibre. Delegates commented how much they enjoyed the beautiful Arboretum and Urrbrae House as a venue, and how friendly and helpful the volunteers were. Thank you to everyone who assisted at the conference centre, on the guided walks and with the provision of morning and afternoon teas (which raised over \$900 for the joint Friends).

David Lawry, co-founder with myself of TREENET has joined the staff of TREENET on a part time basis. A shared TREENET office has been established in the Coach House Research Room. The TREENET web site is being upgraded with much new functionality added. The address is: www.treenet.com.au. Log on and participate!

My article on the Waite Arboretum and TREENET project was published in SA Landscaper September edition. I also did an interview on the ABC TV 'Nexus' program which is broadcast by satellite to 14 countries in the Asia Pacific region, including Japan and China.

The regular guided walks in the Arboretum have been so well attended lately, thanks to the banner and radio publicity, that I am scheduling two guides for each session. More guides would be very welcome, so if you have an interest, come and chat to me.

Pruning and mulching in the Arboretum is gradually improving the collection, but there is much still to be done. The work of the volunteers in the NW corner in re-establishing the Black Forest understorey has been very successful.

Next year we will celebrate the 75th anniversary of the establishment of the Arboretum. I would like to have a series of special events like a twilight reading of tree poems by the watercourse or a family picnic day with bark rubbings and other activities for children, etc.. Please give it some thought and send your suggestions to me.

Thank you to all the Friends and volunteers for your support and efforts during the year. I hope to see you all at the Christmas party.

Jennifer

NOTES FROM THE PRESIDENT

Since the AGM our concerns have been raised about the future of our much loved Waite precinct. A well attended meeting was held in June with representatives from various groups and interested parties associated with the Arboretum and gardens, the House and the Reserve. Paul Duldig, Executive Director, Finance and Infrastructure, spoke at the meeting and dispelled the rumours that had been circulating about the House being converted into a conference centre or an upmarket Bed & Breakfast venue!

After listening to those present, Paul Duldig assured us that the University would be planning a further building assessment, including the salt damp treatment; and that future activities would be compatible with the Peter Waite Trust deed. He said that he strongly believes in the value of heritage in the University. We are anxiously waiting for further developments.

Another major event in the life of the University of Adelaide has been the appointment of Professor James McWha as Vice Chancellor. In response to our letters of welcome, Professor & Mrs McWha will be visiting us on Tuesday 29th October to talk with the staff, representatives of the Friends of the Arboretum & the House and meet many of the regular volunteers. We look forward to meeting them.

Our quarterly meeting in August was very well attended. We were fortunate to have Dr Mark Tester, on holidays from Cambridge University, who addressed us on "Salty Soils - How DO some plants cope".

Once again, the Friends groups from the Arboretum and the House combined forces to provide morning & afternoon teas on the two days of the TREENET Symposium. It was a happy event for all concerned and I am most grateful for the ready response to help needed in baking cakes and pouring teas. There were 140 delegates including 11 from NSW, 19 from Vic., 1 from the ACT and 1 from Queensland.

A major focus for a number of volunteers had been the NW section of the Arboretum. The dedicated work is showing some pleasing results with plants readily identified by the stakes and labels. The spraying of soursobs has had an obvious effect. If only we could get rid of them all!

Whipper-snipping around the native plants has been very effective. We recently had a visit to the site with Ellen Bennet in order to identify the native grasses. The plan over the next few weeks will be to mow, under the guidance of the volunteers who have been so involved.

The Garden of Discovery has been receiving lots of attention of late with new plantings and installation of the drip watering points. The public are visiting it more and more. The Sensory Garden is looking much loved and cared for with new plantings and careful planning by another group of dedicated volunteers.

As indicated in our last newsletter, we look forward to a return visit to Ian Roberts's bushland properties at Blyth to see the developments over the past two years. The Champagne & Roses event will be held on Friday 8th November from 5.30 to 7 pm. Thanks to the wonderful work of the weekly volunteers, the rose garden is looking very healthy at present and should be a joy to us all by the end of the month. We are grateful to Maureen Ross for her continuing support of the rose garden and the many roses she has donated over the past years. I look forward to seeing many of you at this occasion with your friends.

The final event of the year will be our annual Christmas party on Monday December 9th at 6 to 8pm. I hope you have noted this date in your diaries.

Warmest regards to all our members.

Cicely Bungey

CHRISTMAS IS COMING

Friends, I cannot tell you EXACTLY how many days before Christmas you will receive this newsletter. I can, however, make some suggestions which may be of interest.

Suggested Gifts:

- ◆ A subscription for your friend to become a FRIEND.
- ◆ Deane Nicolle's book "Eucalypts of South Australian" available for \$25.
- ◆ Cards by Beryl Martin or Pam Brinsley (without a printed message).

All these items can be purchased at the Arboretum office in Urrbrae House.

With Best Wishes for a
PEACEFUL CHRISTMAS

Ed.

FORTHCOMING EVENTS AND DIARY DATES

Champagne and Roses

Friday, November 8, 5.30 to 7.00 pm.

This meeting will take the form of a relaxed walk and talk by
Maureen Ross of Ross Roses, Willunga.

The talk will be in Urrbrae House and the relaxing walk will follow

Tickets are \$15 each

Bookings are ESSENTIAL, Ring 8303 6904

Enquiries : Ring Jennifer on 8303 7405.

Please come because volunteers, many of whom are our Friends, help look after these
Urrbrae House Precinct Gardens

Christmas Drinks for 2002

Monday, December 9, 6.00 to 8.00pm

This will be a joint function with Friends of the Arboretum, Urrbrae House and the
Reserve, as well as those volunteers who help in maintaining these sections of the Waite
Campus of The University of Adelaide.

The function will take the form of drinks and Christmas Cake.