

Newsletter

*For Friends of the Christchurch Botanic Gardens Inc
To Promote, Protect, & Preserve*

No 67, Summer 2006

President's Report

Comment has been made that "nothing much happens at the Botanic Gardens." I can assure everyone that this statement is not true.

On a wet evening in October the Peace Bell was unveiled by the Mayor and the Director of the World Peace Bell Association of Japan. This unveiling was the culmination of several years hard work by a team comprising various disciplines within the Council. Many hours were put in by Jeremy Hawker and the late Dr David Given who had to grapple with location and design to ensure that the proposed structure was in keeping with the Botanic Gardens. For so long all we had to view were the conceptual plans. Within a short period the site was cleared and the area prepared to receive the bell. Garden staff are to be complimented for the effort they made under adverse weather conditions to ensure the unveiling was not delayed. I think the site was well chosen being next to the Cherry Mound. It is significant that the bell has been sited between the Rose Garden and the Daffodil plantings which are two of the most peaceful areas of the gardens.

Last month the age-old English tradition of "Beating the Bounds" was carried out in the Botanic Gardens to herald in the Spring by walking the boundaries. After Councilor Barry Corbett had spoken and the Wizard had blessed the proceedings, Guide Bob Crowder led the gathering. At certain points symbolic beatings were held and at other points Guides explained historical features. This event proved not only to be informative but brought people together.

The Draft Management and Master Plans for the Botanic Gardens and Hagley Park have caused much discussion from the citizens of Christchurch and beyond. Many residents do not understand the workings of a modern Botanic Garden but they are certainly passionate about what is being proposed. In the main, people I have spoken to are supportive of the proposals and said that they would be making submissions. It is gratifying to know that the Mayor and Councilors are in agreement that the Botanic Gardens need to be upgraded. Jeremy Hawker, Derek Roozen and the late Dr David Given are to be complimented for the depth of research and drafting of this material into a readable format.

Members may or may not be aware that the Friends now have a most attractive brochure which has been developed by Liz Wolf and her team; I suggest all members take a bundle and encourage friends and business colleagues to become members.

Who said that nothing happens at the Gardens?

David Moyle

Christmas Party

Don't forget the Friends Christmas Function from 4.30-6.30pm Saturday 2 December at the Petanque Rooms, North Hagley Park,.

**I
N
S
I
D
E**

2 Gardens' News
4 Articles
6 Recent Events

12 Friends' Groups
14 Coming Events

FCBG
PO Box 2553
Christchurch

Gardens' News

Jeremy Hawker reports -

The Botanic Gardens are undergoing a period of discovery, as consultation closes on both the master plan and the management plan, allowing the citizens of Christchurch to input into its future direction. The planning process will continue over the coming months, looking towards redevelopment and enhancement of the gardens. This process has taken some time, and it is indeed an exciting and stimulating period for the Botanic Gardens staff that has not stopped the activities and development within the gardens.

The Peace Bell was unveiled by the Mayor and a representative of the Japanese Peace Bell Association on a less than pleasant evening, with showers and rising river levels. A good response from residents as a moderate number attended a memorable opening. Further enhancement of this area will occur over time as the Asian plant collection expands.

The Peacock fountain is undergoing a make-over and will be complete, weather permitting, by Christmas. The fountain has been in place for nine years and the existing paint was deteriorating. A new colour scheme based on heritage British colours is planned.

Plant collections within the gardens continue to be enhanced and improved with many new plants being grown to rejuvenate borders and plantings, and these will become evident as they mature.

Botanic Gardens of Australia and New Zealand (BGANZ) held its 6 monthly meeting in Christchurch in October. The heads of the major gardens in the country attended along with their Visitor services staff. This is an important networking opportunity as benchmarking and collaboration are explored, to enhance our own gardens, but also to promote botanic gardens, and the amenity horticultural community.

In October next year Hamilton will host the Australasian conference of BGANZ and the theme is, Building Partnerships. Four streams will be developed,

- Plant diversity and conservation
- Engaging with the local community
- The botanic garden as a visitor attraction

The educative role of botanic gardens
All gardens within this region are reviewing their function and role and how we deliver our messages to a broad range of people.

The direction within the planning documents indicate the focus for the gardens to include research, conservation and education and these areas are currently being pursued with external agencies, as we seek to enter into partnerships with established providers. The planning process has allowed us to engage with a range of institutions and the future looks promising as we seek to enhance the visitor experience and engage with our visitors, telling the stories about plants, and the environment they live in.

Discovery Trails continue to be well supported

Over four hundred children, aged 5 to 12, took part in the latest school holiday discovery trail. This discovery trail was titled "On the Scent of a Trail" and helped the children uncover the amazing plants that produce chemicals to attract and repel animals. Participants were introduced to the orchid house, the Australian border, the herb garden and the fragrant garden.

The children were fascinated to learn about carnivorous plants and how they attract, capture, kill, digest and absorb their prey. Feedback on the trails has been very positive. A number of children are returning each holiday break to test their skills and knowledge of plants.

The plan is to continue to develop these activity trails during each school break.

Plants - Where would we be without them?

"Plants and You – Discover the Connection" is the title for the display to be mounted in the Botanic Gardens Information Centre from November through to the end of February. Visitors will have the chance to ponder on how many everyday items we use and consume that has been produced from plants.

The Information Centre back room is to be transformed into a lounge, kitchen and bathroom, where various everyday items can be viewed.

Interesting facts about plants and their uses will be hidden within the rooms to encourage people to interact with the display. Those that examine the display will go away with the understanding that our life depends on plants; from the food that we eat, to the energy that we burn, to the materials that we use.

Kerry Everingham, Visitor Services Coordinator

Botanic Gardens Staff Profile – Nicky - Gardener, Section D

From zoology to horticulture: Nicky's bold change in career path led her from pursuing rhinos to roses. Nicky, and husband Jason, a chef, shifted up to Christchurch from Timaru to pursue work opportunities. Nicky had been an office manager and saw the move as an opening to do something totally different. "It's always exciting to try something new," she says. "I would quite like to have been a zoologist. In 2000 I did my first year of a science degree at Canterbury University, but all I saw for the future was working mainly with birds and sea creatures like dolphins, and I decided that really wasn't me. I wanted to work with big animals." Nicky, appears to have boundless energy (fuelled, according to her work mates, by a chocolate addiction) so despite her petite figure, you could easily imagine this feisty blonde tirelessly working with the big animals. In fact she owns two of the biggest domestic dogs, St Bernards.

Meanwhile, career-wise, she now focused on gardening and went to Christchurch Polytechnic to do a course in horticulture. Nicky had often helped her mother, who owns a 10 acre property 2 acres of which are in garden with some 300 roses – all old fashioned. "I didn't know at the time I would end up looking after the Christchurch Botanic Gardens' roses", she says with a hint of disbelief. While at university Nicky had been a volunteer gardener at Mona Vale, then became a summer student for two summers at the Botanic Gardens. After attaining her Certificate of Horticulture from Christchurch Polytechnic, she went back to Mona Vale for another summer, then in February 2000 started full time at the Christchurch Botanic Gardens. In June of that year Nicky began her traineeship; in 2005 she gained her National Certificate of Horticulture and became employed as a gardener.

It is fortuitous that a position was open for Section

D, because Nicky says, "If I had to choose anywhere in the Botanic Gardens to work, it would be the Rose Gardens." Section D also includes the Chinese Border, Cherry Mound, Copper Beech bedding, Australian Border, and New Zealand cultivars. Around the rose garden there are plants from the Rosaceae family and the dahlia border, which primarily focuses on New Zealand dahlia cultivars.

One of the first places visitors ask to see, the Central Rose Garden must be kept in pristine condition. Not an easy task, although every alternate week, a trainee is detailed to help. At present there are over 1,400 plants and a total of 180 different varieties. Dead-heading is an on-going daily job. Although there are two main flowering flushes, the busiest time for dead-heading is December. Some flowers are left on climbers to form rose-hips for autumn colour. Once a fortnight the roses are sprayed with a general fungicide combined with a garlic concentrate and seaweed extract to deter aphids. They prefer to let natural predators control insect pests. This seems to be working because for the past two seasons an insecticide has not been used.

To take a photo of Nicky, you must make sure the flowers look their best. "You're not taking a photo of that," she says as she quickly dead-heads another rose. Which are her favourites? "I lean towards more the look of old-fashioned roses and I'm going through a phase of liking single flowered roses, such as 'Mermaid' and 'Golden Wings'; also the new 'Papa Meiland' is a beautiful red rose with a very fragrant scent." Nicky doesn't like cut flowers, she prefers to see them growing on the plants; so don't buy her roses – give her chocolate!
Candi Gibson

Recent walks

Friends and the wider public were entertained by the following special guided walks in the Gardens:

- Saturday 19 August by Friends' Guide Nedra Johnson – Rock and alpine plants.
- Tuesday 22 August by BG staff member Mark – the Native Section.
- Saturday 16 September by Friends' Guide Tricia Carr – Special in spring.
- Tuesday 26 September by BG staff member Dean – Pruning and shaping conifers.
- Tuesday 31 October by BG staff member Brian – Heritage theme.

Articles

John Tradescant the elder (c1570-1638); his son John (1608-1662) and the Museum of Garden History

These two men were gardeners, collectors of curiosities and importers of exotic plants. They were responsible for introducing many new plants into Britain from abroad, some gathered on their own extensive travels, and others supplied to them by friends overseas. Both men supervised some of the great gardens of their day. Their own botanic garden at South Lambeth, London, from which plants were disseminated far and wide, became the centre of horticultural interest in England. Inside their Lambeth house they opened The Ark, the first museum in the country which the public could visit, a permanent exhibition that attracted the curious and the scholarly alike.

Today, when there are few corners of the earth still undiscovered, it is difficult to understand the narrower confines of the seventeenth century when world exploration was just beginning, and the intense interest aroused by all the curious and exotic objects that flowed in to Britain from all over the world. Gardening had become a fashionable hobby among the gentry who were busy building themselves stately homes. The Tradescants played a leading role in both fields and were justly famous in their own day.

In 1607 John Tradescant the elder married, and the young John was baptized the following year. John the elder went to work for Robert Cecil, first Earl of Salisbury at Hatfield House in Hertfordshire in 1610. He must already have been well known, as the Earl employed only the best. The house was nearing completion and the gardens were laid out, and the vineyard was being prepared to receive more than 30,000 vines! Tradescant was supervising the kitchen garden. He was sent to buy further vines, and traveled to Europe buying exotic trees and plants. The items were dispatched home in baskets and padlocked hampers.

By 1615 Tradescant had moved on to Canterbury to work for Lord Wotton but three years later he managed to join in the entourage of Sir Dudley Digges who had been sent to Archangel, then called Muscovy, on what Tradescant describes as

'A viag of Ambusad'. Digges' mission was political but Tradescant went along for the botanizing. However, he left a full record of the trip. In the first part he documents all the events of the voyage, the storms, the wildlife, and the second part, headed 'Things by me observed', covers events ashore and the way of life of the local inhabitants. It also lists his botanical discoveries. In the manuscript he lets slip that he had no sense of smell, a deprivation which perhaps goes some way towards explaining his constant pursuit of the strange and rare. His sole introduction from this trip was a sweet-smelling single rose which has been identified as *Rosa acicularis* Lindl.

Two years later Tradescant joined an expedition to quell pirates in the Mediterranean for which he enrolled as a gentleman volunteer. The expedition achieved little but it gave Tradescant the chance to collect plants at various ports on the Spanish Mediterranean coast and on the island of Formentera, where he is said to have found *Trifolium staltatum* L. His ship also made one short stop off Tetuan on the North African coast, where he described the many acres of gladiolus he saw growing there. He probably gathered many more plants than those recorded, as a number of varieties from this area are first listed growing in England in *Plantarum in Horto*, his printed garden list of 1634. These include four *Cistus*, two *Smilax* and *Pistacia terebinthus* L.

Tradescant was summoned to work for the Duke of Buckingham who was the most powerful man at the court of King James 1. Tradescant fulfilled many other roles for his new employer. When Buckingham was appointed to go to Paris in 1625 to bring back the French princess, Henrietta Maria, as the bride of Charles 1, Tradescant was taken along as baggage master in charge of all his master's opulent clothes, all as rich as 'Invention can frame or Art fashion.'

In that same year Buckingham decided to build up a Closet of Rarities, a popular status symbol at the time. It was a project after Tradescant's own heart and he was evidently appointed its keeper. Tradescant would have picked up the duplicates that were found.

Tradescant's next adventure took him on the

Duke's ill-fated expedition to relieve the Huguenot (Protestant) stronghold of La Rochelle on the French Atlantic coast, for which he enrolled as an engineer. Fewer than half returned and the failure of this expedition sealed Buckingham's unpopularity and a year later he was assassinated.

Tradescant's life now takes a dramatic turn. He had evidently become financially independent and was in a position to establish own botanic garden and museum. It must have been soon after Buckingham's death that he took a lease on a house and garden in the South Lambeth Road. Lambeth was largely rural at that time and life centred round the church of St. Mary, about a mile away. One or more rooms in the house contained his growing collection of rarities and the building became known as 'Tradescant's Ark.'

In addition to running this family business Tradescant was appointed Keeper of the Gardens, Vines and Silkworms at Oatlands Palace for King Charles I in 1630. His salary was one hundred pounds a year. He supervised many improvements during his time there. Six years later he became associated with the Oxford Physic Garden, and it seems likely that some of the 1,600 plants later listed by his successor emanated from South Lambeth.

He died in 1638, but his son was not at this funeral, for he was in Virginia under the auspices of the King to gather flowers and plants. It was perhaps a very sad homecoming for him. He returned with about two hundred new plants as well as seeds and dried specimens, but his father was no longer there to share in the excitement. Among these were the American Plane (*Platanus occidentalis* L.); the Swamp Cypress (*Taxodium distichum* (L.) Rich.); the Virginian Bladder Nut (*Staphylea trifolia* L.); the Virginian Jasmine (*Gelsemium sempervirens* (L.) Aiton) and the purple Pitcher Plant (*Sarracenia purpurea* L.).

John the younger had married in 1628 and had a daughter Frances, and a son, another John. His first wife died very young, and he married again in 1639. He succeeded his father at Oatlands Palace, but the English Civil War between King and Parliament began in 1642, and it is unknown how long he continued working there.

He headed for Virginia again. Although both the elder and the younger Tradescant were evidently

born with green fingers, it seems little short of miraculous that they were able to transport plants over such long distances, alternately becalmed under hot, windless skies endeavouring to eke out the always limited stock of fresh water; or tossed by heavy seas trying to protect plants from the salt spray.

The family business kept open through all the troubles and provided the Tradescants' main source of income. The Puritan thinkers were happy to absorb any co-operative ex-Royalist with knowledge and expertise. Their considerations were purely practical; they were anxious to improve the hitherto often poor standard of horticulture. This perhaps explains why the younger Tradescant grew many more common medicinal and food plants alongside the exotics than his father had done. It was probably a case of adjusting to the time.

In 1652 Tradescant's only son, John, died. A year later he was again off to Virginia. On the two later trips his introductions included the Tulip Tree (*Liriodendron tulipifera* L.); the red and yellow Trumpet Honeysuckle (*Lonicera sempervirens* L.); the Sensitive Plant (*Mimosa sensitiva* L.), and the Virginian Yucca (*Yucca filamentosa* L.)

It was in 1650 that Tradescant first met Elias Ashmole who was an eminent historian with wide-ranging interests. Tradescant was endeavouring to catalogue his collection of rarities and to make a garden list, and Ashmole, with another mutual friend, Dr. Wharton, offered to help. Tradescant no doubt accepted assistance in order to speed up the process, and the *Musaeum Tradescantianum* was published in 1656. A few years later Tradescant began to concern himself with the future of the collection and to whom it should be entrusted after he was gone. He had already thought of donating it to a university and this was made clear in his will. However Ashmole tricked Tradescant into signing a deed of gift in which he realised afterwards that he had given the entire collection to Ashmole outright. He was furious. John died in 1662. Ashmole in fact carried out the Tradescants' wishes by donating the collection to Oxford University - albeit the gift was in his own name instead of theirs. Such items as remain can still be seen in the Ashmolean Museum

These gardeners are now commemorated by the plant named after them by Linnaeus. The variety popularly known as Moses in the Bullrushes,

6 FRIENDS OF THE CHRISTCHURCH BOTANIC GARDENS

having been sent to the elder Tradescant by a friend in Virginia, first grew in England at South Lambeth before 1629. Another plant that arrived this way was the Scarlet Runner Bean (*Phaseolus coccineus* L.) which came to him from the West Indies.

Both Tradescants, father and son, are buried beneath a uniquely-sculpted tomb in the churchyard of St. Mary at Lambeth. Thus when the church was closed in 1972 and subsequently threatened with destruction it seemed appropriate that any project for its future use should be associated with their name. It was on this foundation that in 1977 the Tradescant Trust was formed by Mr and Mrs Nicholson in order to restore the fabric of this historic church and turn it into the first Museum of the History of Gardening in the name of the Tradescants.

I was involved in the very beginning of the creation of the Museum because Mrs Nicholson was the mother of a good friend of mine. The church was very forlorn and dilapidated, as was the garden. We had Craft Fairs and endless fundraising went on. The Nicholsons were untiring in their work for the Church and Museum. They were responsible for the creation of the beautifully restored building, and the museum, which you can see when you visit London. There is now a plaque dedicated to them both on the church wall outside in the garden. One of the most treasured possessions owned by the Museum of Garden History is diarist John Evelyn's personal copy of the catalogue, *Musaeum Tradescantianum*, dated 1656.

A last word must be said on the tiny and exquisite garden of the period behind the church. The Marchioness of Salisbury of Hatfield House designed a garden in a style that would have been familiar to the Tradescants. The compartments made by the hedge are planted with a mixture of shrubs, roses, herbaceous perennials, annuals and bulbs. The reproduction 17th Century knot garden with historically authentic planting was made in 1981 and formally opened by the Queen Mother in 1983. 17th century tastes and styles are clearly demonstrated most clearly by the fact that the hedge around the knot is planted with *Buxus sempervirens* 'Suffruticosa' rather than herbs. Previously the scent was considered offensive and box was rarely used. The design of the knot is traditional and geometric, and would have traditionally been symbolic, representing meaning^e such as 'heaven on earth', marriage or union. Topiary is a crucial ingredient in this garden as well. The Tradescant family tomb, a Victorian sandstone replacement of two earlier memorials stands out in the gardens, among other tombs. This 19th Century version is a replica of the original 17th century tomb, copied from drawings held in the Pepys Library and is carved with wonders from the natural world, as well as intriguing mythical creatures.

The Museum is next to Lambeth Palace and open every day from 10.30 am - 5.00 pm.

(Ref: The story of the Tradescants by Prudence Leith-Ross, and the Museum of Garden History Guide Book)

Tricia Carr. October 2006

Recent Events

Annual General Meeting

The following report on aspects of the Annual General Meeting held on 27 August is supplied for the benefit of members who could not be present.

Presidents' Report.

The Annual Report by David Moyle was sent to Members with the Notice of Meeting. At the meeting he supplemented that report with the following comments:

- The death of Dr David Given, Curator of the Botanic Gardens, last December was a very sad loss for both the Friends and the Gardens.

- The Friends were a unique grouping of people who, during the year, had contributed over 2,500 hours of voluntary labour to the city by their work on behalf of the Gardens. Special thanks were due to all those who had contributed to various activities.
- Jeremy Hawker had to be commended for carrying the double workload of Operations Manager and that of Curator whose position had yet to be filled.
- A Planning Day held last November under the guidance of Peter Berry as facilitator had proved worthwhile by highlighting the strengths and weaknesses of the Friends. Attention was being given to the problem areas identified at the meeting.

- The Information Centre displays had aroused much public interest.
- The Society had been very well served in the work done by the Specialist Groups and Committee Members as fully detailed in his Annual Report

Subscriptions For year Commencing 1 July 2007.

To assist with Committee and individual planning, subscriptions are now set one year in advance. The Committee recommended a small increase of \$2.00 to all levels of subscriptions to cover rises in administrative costs leaving the proceeds from other fund raising activities to meet special projects for the benefit of the Gardens. The Meeting approved new rates of subscriptions as from 1 July 2007 at the following rates – Student \$10, Ordinary \$16, Affiliate \$16, Family \$22.

Committee.

Having held the position of President for two years David Moyle would not normally have been eligible for re-election. However, because no other person was available to fill the position David Moyle was prepared to continue as President for a further year. His re-election was possible subject to three fourths of the members present at the meeting approving a temporary amendment to the Constitution. This amendment was approved at the meeting and David Moyle was re-elected as President.

Don Bell was elected as Vice President, Nancy Boundy and Bill Whitmore were elected as new members and other past members were re-elected to the new Committee which now comprises:

- | | |
|----------------------------|--|
| President - | David Moyle. |
| Vice President - | Don Bell. |
| Immediate Past President - | Position Vacant. |
| Treasurer - | Lesley Godkin. |
| Membership Secretary - | Ruby Coleman. |
| Minute Secretary - | Jim Crook. |
| Committee Members - | Nancy Boundy & Bill Whitmore (New Members), Elizabeth Wolff. |
| Ex Officio - | Jeremy Hawker. |

David Moyle paid tribute to the work done by retiring Committee members Faye Fleming, Alison Fox, Robyn Gordon, Adrienne Moore, Dennis Preston and Jay Rogers.

Talk by Operations Manager.

After the formal business of the Meeting Jeremy Hawker, Botanic Gardens Operations Manager, gave a most informative talk about the recently released Management Plans for Hagley Park and the Botanic Gardens. Public comment on those Plans was invited by 25 October.

Jim Crook

The soils of Hagley Park and the Botanic Gardens

Presentation by Ian Lynn, Landcare Research, 29 July

When the pioneers of Christchurch set aside an area of land that was to be the future Christchurch Botanic Gardens, what prompted them to choose that particular block of land? What ever their reasons it is hard to imagine a better choice. The chosen area proved to be particularly suited for the establishing and growing of the trees and other plants that have become such a feature of the Gardens.

Ian Lynn, a highly qualified and experienced soil scientist and geomorphologist, gave the presentation to the Friends on the soils of the Botanic Gardens and Hagley Park. (He was standing in for his colleague Trevor Webb, who was to have to have spoken but was unavailable when his work took him overseas at the time).

Ian pointed out that soil should not be taken for granted, as just something to walk and build on. Soil is a life support platform and is probably the most biologically active zone on earth; a spoonful of soil can contain hundreds of millions of organisms. Soils are comprised of approximately 50% solids (sand, silt and clay) and 50% pores or channels. The solids are important for structural reasons and as a source of mineral nutrients; they must be in appropriate proportions if the soil is to be fertile and friable. The spaces between the solids are however of equal importance; it is in these spaces that the air and water move and where the plant-available nutrients and organic matter are found. Soils also have an important cleansing and recycling role.

The desirable characteristics of soil were listed. A soil should be friable and porous; it should have a vibrant soil fauna and an active population of microorganisms; there should be a good size range of solids; it should have a pH level of 5.5-7.0; and it

8 FRIENDS OF THE CHRISTCHURCH BOTANIC GARDENS

should provide good rooting conditions for plants.

Canterbury has a very complex and varied pattern of soil types. Different soil types arise as a result of soil processes. The development of alluvial soils, as are found on the Canterbury Plains, takes place over long periods of time. In Canterbury it has been complicated greatly by periodic floods which have deposited or removed soil material. Further complications can arise as the result of the formation and shifting of sand hills.

Three distinct soil types can be identified in Hagley Park with each having their own different characteristics.

- *Waimakariri silt loams* are fine sandy loams which are well drained.
- *Kaiapoi silt loams* are fine sandy loams which are imperfectly drained.
- *Taitapu silt loams* are deep silt loams which are poorly drained.

Because of their characteristics the Waimakariri silt loams have the advantage of much higher levels of available water and air than is found in the other soils.

Much of North Hagley Park is composed of Waimakariri silt loams. Because such soils drain well the sports fields stand up well to the effect of wear and tear inflicted by winter sports players. In contrast poorly draining Kaiapoi and Taitapu silt loams predominate in South Hagley Park where the sports fields can cut up badly in winter.

A predominant reason why the Christchurch Botanic Gardens are of such a high quality is that the area is largely composed of Waimakariri silt loams. The soil in the Gardens is well drained and naturally provides good aeration. It has a stable structure and is porous and friable. The topsoil is deep - generally greater than 90 cm. The soil provides a good rooting medium with no impediments, such as impermeable lower layers, to root growth. Large trees are able to take up groundwater from accessible groundwater sources.

A talk on the subject of soils might seem at first glance not to be the most entertaining of subjects. However it was clear that those who attended the presentation found themselves engrossed. They appreciated Ian's knowledge and experience and asked him many questions. They went away having enjoyed a very informative and interesting talk. It had been well worth getting away from the

other distractions of a fine Saturday afternoon.
Bill Whitmore

Macro, Meso and Microclimates and their effect in the garden

Members enjoyed, and were informed by, Bob Crowder's talk at their September meeting. For those who were unable to attend Bob offers the following summary -

One cannot be a guide in the Botanic Gardens without realising that the plant communities represented comes from a vast array of contrasting climates that span the globe. That is why the term horticulture has its strongest use in the English language where environmental manipulation was very necessary as the early plant explorers brought back exotic species to Britain where the aristocracy sought to grow them for interest, fascination and perhaps commercial gain. Many of these species came from MACRO-CLIMATES very different from that of Britain but by careful choice of MESO-CLIMATE using appropriate soil amendments, hillsides, aspect and shelter the generally maritime environment of Britain could be adapted to broaden the spectrum of species able to be grown and displayed. Add to this the manipulation of MICRO-CLIMATE, using even more shelter, brick and stone walled gardens, paved terraces, raised beds, darkened soil amendments and finally aspects of frost protection using temporary frost covers, cloches, bell jars and then the total cover of cold and even heated glass houses and there was little that the early gardeners of Britain could not achieve. One of the features of the renovated Secret Garden of Heligan in Cornwall are the frames used by the Victorian gardeners to grow and ripen pineapple for the household.

Not surprising therefore that New Zealand inherited this horticultural knowledge and put it to good use sorting out New Zealand.

The macroclimate of Canterbury at first sight is not that more benign than that of much of Britain but it is at 43degrees of latitude compared to 50 and more for Britain. That is a huge or macro difference as far as plant growth is concerned and puts us on a par with Northern Spain. Another macro influence is the Ocean which ameliorates both winter and summer temperatures reducing the extremes possible. Then there is wind exposure which is severe and very desiccating and damaging at times, especially the notorious NW föhn. These are

macro-climatic features of the Canterbury region and make for the generalisations associated with our region.

But as the first settlers soon found out there were plenty of meso-climates. The two best examples would have been quickly realising that for the best winter vegetables you needed to scoot up the valleys of the Port Hills where the soils were rich and well drained, not only of soil water but also of the cold night-time air which being heavy flows down onto the Plains leaving the slopes almost frost free. Later it was obvious that it was also the place for stone fruit and of course tomatoes which needed that bit of extra heat in the summer and freedom from late frosts.

Meanwhile it didn't take long for those settlers to realise that summer growth needed water and that Marshlands with its peat soils and high water table was the obvious place to grow the main summer crops. No surprise therefore to find that Marshlands is the oldest vegetable cropping area in New Zealand.

But there was still more to achieve; that pesky NE wind was lethal in summer and the NW had the potential to blow the peat away in spring while the S could roar down the Port Hill valleys laden with hail and annihilate everything in its path. The answer was to create microclimates varying from pine and macrocarpa in the valleys to willow, poplar, flax, toi toi, but usually pampas, and even autumn cereals as windbreaks out on the peat.

Today the Botanic Gardens is a paradise compared to what it would have been like when the first settlers arrived. The whole macroclimate has been ameliorated by the plantings and many meso- and microclimates created, which in turn allows an even wider spectrum of plant species to be successfully grown. It is this factor that confuses the understanding of climatic change because without the plantings the Botanic Gardens would not have the climate it has today. When quoting the climate of Christchurch it is therefore better to look at the Botanic Garden record rather than that of the airport; it will be far more representative of the conditions experienced by most residents than the airport.

Horticulture died with the coming of industrialised agriculture; big machines need big fields, less climatic amelioration is possible and therefore only plants and crops that can fit the big macro

scenario are economic. The hillsides have no value today; it is more economic to grow on a big scale and bring the produce in even if it comes from overseas. To a great extent it is only the true horticulturist that still retains the expertise and understanding of how to make an environment sustainable and self-sufficient.

But times they are changing yet again. There is a much greater awareness now of environmental issues, more people are seeking out local sources of produce and the growth of farmers' markets is sparking a new interest in how to become more locally self-sufficient. Such trends could well spark a renaissance in horticulture and stimulate an interest in how climatic factors and plant growth interact to provide suitable growing conditions for a much greater range of plants than has been the case in recent years.

For most gardeners the meso-climate is already set and expertise will be applied only at the microclimate level. Much will be instinct. More delicate frost-sensitive plants will have pride of place on a wall facing north. My own attempts with the tamarillo are restricted to under the eaves of the house facing north. But don't forget other plants will benefit from being on the wall facing south where it will be cooler and wetter; this is still a micro-climatic advantage. The kiwifruit vine grows in an area facing north but sheltered by various trees that overhang the vine protecting against those late frosts in spring but also those early frosts that might occur in autumn. If located on heavy wet soils then the micro environment will benefit from raised beds to dry the soil and warm it up earlier than would be the case if left on the level.

Most people understand that mulching conserves moisture in the soil; but it also excludes moisture from getting in the soil, keeps the soil cooler in summer and warmer in winter and most spectacular of all can increase the incidence of frost which is a serious disadvantage in spring if frost-sensitive plants are being grown.

During the course of the talk various meteorological terms were clarified and defined. One that has always frustrated me is the use of the term hoar frost to describe the freezing fog that turns mainly the inter-montane basins into fairy land on occasions during winter. These should more correctly be called rime frosts; the freezing of suspended water droplets onto a solid object when below the 0°C level. Hoar frost is the frost that

10 FRIENDS OF THE CHRISTCHURCH BOTANIC GARDENS

occurs frequently on clear winter nights everywhere. Such a frost in New Zealand is recorded when the grass temperature falls to -1° or below. This is usually much lower than the air temperature taken at 1.2 m above the ground in a standard exposed situation and explains why the forecaster on TV often talks about frost when the minimum on the graphic is well above freezing. This is an excellent expression of micro-climate in action.

It is also worth keeping in mind that a grass frost of several degrees will not mean that it will be the same over the bare soil seed bed adjacent to that grass. In fact if that seed bed is kept moist then the temperature difference may well be 5° C and tomato seedlings may escape frost damage when the official record may record a -5° C frost. Such are the finer points of micro climatic understanding.

Another point to keep in mind is that it is no good covering crops against frost with plastic or micro-climate type materials unless they float above the vulnerable leaves; contact will cause frosting but the airspace underneath will keep the frost at bay. Therefore a full cloche is necessary to protect from frost, a floating protection will warm the soil but not prevent frosting. Perhaps the best material to keep handy in the spring for frost prevention is newspaper because it is a good insulator and frost will sit on top of it but not penetrate to the foliage underneath. A section of the Press folded over potatoes for instance is quickly done on a cold evening and will be very effective protection and easily removed the following morning.

Protection for fruit trees and larger plants is not so easy so selection of site becomes important. However in extremity one can light a wood fire close by to set up some thermals to break up the frost layer and it has been known for a blow heater on an extension cord to be directed under the kiwi vine to enhance the frost protection *in extremis*.

It is all these interactions that make working with the environment so stimulating and exciting. That is what horticulture is all about and although the Botanic Gardens was established on such an inhospitable site just look and marvel at all the nooks and crannies that have been established so that such wide global bio-diversity can now be enjoyed by us all.

Bob Crowder

New Plants for Excitement, New Plants for Innovation.

Presentation in October by Chris Hughes from Blue Mountain Nurseries, Tapanui

Not many have the good fortune to be born into a family of plant lovers and have a huge garden and nursery as your workplace, plus the job of traveling around the country to talk about the plants you love. Chris Hughes is the Wholesale Manager for Blue Mountain Nurseries in Tapanui and is the 3rd generation to work in the nursery. He obviously loves his job and sharing his enthusiasm for ornamental plants with others. We heard some of the family background, where new plants come from for New Zealand gardeners and how they are produced.

As well as sample plants (some of them for sale) Chris had many photos to show us of the successes developed or grown at Blue Mountains, those currently being trialed and some of his own favorites. A lucky member won the rhododendron Chris donated as a raffle prize. He gave out catalogues and the full list of plant shown in his PowerPoint presentation.

Stan Hughes, Chris's grandfather, arrived from the UK during the depression to help elderly relatives, then worked in the Forest service in Otago and Southland living under canvas. In 1932 Stan started growing perennials and bulbs and a few shrubs and later forest trees. He selected plants with worthy features such as the deciduous *Agapanthus* 'Blue Mountain', a smaller growing plant with the darkest blue flower then available. *Lavender angustifolia* 'Blue Mountain' is another Blue Mountain signature plant first recognised by Stan and further selected by Denis. The fully double-flowered, beautifully scented *Eucryphia glutinosa* 'Flora Plena' grown by Stan is now around 70 years old. The nursery now has an extensive selection of Eucryphias for sale. (Some years ago the Friends donated several Eucryphias to the Botanic Gardens some of which are now planted near the Kiosk Bridge.)

Stan's sons, Denis and John, took over the business in 1964 and Blue Mountain Nurseries now specialise in rhododendrons including azaleas, conifers and pleione orchids and also produce hardy trees and shrubs including the rare and unusual, as well as some perennials.

New plants come from several sources - some are imported through the Hughes' connections with the

network of worldwide plant breeders; some identified in local gardens, e.g. *Cornus kousa* 'Greenvale' to be released this year, (which was identified as special by the owner of a garden near Gore); other plants come from the nurseries' own breeding programs.

Denis Hughes has worked extensively in the development of azaleas to produce the deciduous Blue Mountain double-flowered scented forms - using the llam strain, originally raised in Christchurch by Edgar Stead*, and double Ghent Azaleas imported from England in the mid sixties. *Edgar Stead had obtained plant material for his llam garden from Exbury, the Rothschild's garden near Southampton.

When Nicholas and Caroline de Rothschild visited Blue Mountains Nursery in the early 1990's, they looked over and evaluated the several thousand selected double seedlings. These had been hybridized in 1984, then flowered and initially selected in 1989. Caroline chose one with large, double, scented, pink flowers and deep burgundy red autumn foliage. This Azalea, A. 'Caroline de Rothschild', is now available. Other Blue Mountain double azaleas include *Azalea* 'Pavlova', A. 'Sunray' and A. Blue Mountain 'Softlights'.

It takes many years for a new plant to reach the market and for some azaleas there have been trials with 3 beds of 20,000 plants per bed. The aim is to produce disease-free plants, with good flower and truss size. Anything prone to disease is destroyed. Once rooted the new plants are grown on for several seasons and evaluated again prior to sale. Some azaleas are never released to the market because they are too difficult to grow eg out of 5000 cuttings from one cultivar, only 5 produced roots so this line was abandoned. Seed lines are cheaper to produce but using genetic material gives better results.

Some rhododendrons that are hard to propagate are grown by tissue culture. Imported material is grown on for a year in the level 2 quarantine facilities on the Blue Mountain site, then trailed and evaluated for NZ conditions. Rhododendrons and azaleas make up about 25% of production, with rhododendrons field-grown to get a more fully rounded plant. The production area now covers 5 hectares with 7-8,000 plants in the stock beds and 2,500 different plant crops grown each year. Some extreme weather conditions have caused problems and by having plant material with friends

off-site, the nursery has been able to replace lost or damaged trial stock. There are 18 full time staff with up to 30 people in the height of the season.

Plants selected for release or developed at Blue Mountains in recent years include *Nothofagus fusca* 'Rainbow', *Pseudowintera colorata* 'Red Leopard' (a New Zealand native pepper tree with unique foliage colour) and *Chamaecyparis lawsoniana* 'Blue Mountain'.

We were tempted with slides and stories of yet to be released azaleas and worthy plants including *Actinidia kolomikta*; *Cotinus* 'Grace'; *Fothergilla major*; *Clematis* 'Leprechaun'; *Clematis paniculata* 'Bridal Veil'; *Acer pseudoplatanus* 'Esk Sunset'; *Sophora molloyii* 'Haulashore Island'; *Viburnum plicatum* 'Roseace' and *Skimmia x confusa* 'Kew Green' (a male form with large cream heads of scented flowers, not previously available in New Zealand).

Chris advised planting skimmia's in full shade to protect the leaves from fading in the bright New Zealand light and suggested new ways to use plants such as planting *Eucryphia lucida* as a hedge. He urges gardeners to look out for new sports from plants in our gardens and to seek out the best form of the species when buying new additions to our gardens.

Oh for a few acres to have room to grow some of these special plants!

Adrienne Moore

P.S. A visit to this exciting nursery at 99 Bushy Hill Street Tapanui West Otago is a real treat. Or visit the website www.bmn.co.nz

Plant Exchange

I have two *Brugmansia* 'Sunset' plants (*Brugmansia*, syn *Datura* 'Angel's Trumpet') and would like to exchange them for any other *Brugmansia*, whether seed, cutting or plant. I should like to hear from anyone interested in such an exchange. Many thanks, Trudy van der Weerden - ph 9017 033

Christmas raffle

We are going to have our usual "Pick your own Prize Raffle" at the Christmas Party on the 2nd of December, which is always great fun. I would be happy to receive donations for hampers or any other item of interest for the raffle. Please contact me (Alison Fox - ph 9424 989) and I will arrange a pick up.

Friends' Groups

Guiding Group Report

The last few years of records for garden guiding indicated that client take up was pretty minimal at the beginning of September so guiding did not commence until Monday 18th this season. So guides took to the gardens in their new smart white tee shirts emblazoned with Botanic Gardens GUIDE over the left bosom in a spring that has never looked better in the Gardens and Canterbury in general.

But this has not been reflected in clients guided so far despite many perfect days. During September, of the 13 available days, only 5 drew patronage with a total of 8 persons. October proved to be a disaster as well; only 12 client days out of the available 31 days, with just 27 guided persons. Last season in comparison by the end of October 69 persons had been guided compared to just 35 this year. For over 60 percent of the time our guides made the journey to the gardens to no avail.

This is a great disappointment for the guides, a dedicated bunch, who on the whole enjoy a walk through the gardens even if it is on their own. Surely some serious questions need to be asked concerning whether the service offered is getting through to the people that matter? Almost without exception the targeted clientele are overseas visitors, so do the Friends target the tourist industry aggressively enough at the start of each tourist season?

Meanwhile the guides have been taking their task seriously with their monthly upgrades on what is new in the Gardens. The last meeting in October saw the intrepid Max take us for a foray across the Avon into the arboretum, an area little visited by the guides but of significant interest if only because the Dalai Lama planted a tree there. Thankfully it is clearly visible from the Gardens side of the river so the area will probably still be beyond most guided tours. It did however serve to remind us of the need to keep pressure on the Garden staff with regard to the labelling issue with several incorrect labels on notable trees.

Despite the dismal daily 1.30pm garden tour statistics everybody was kept busy in Heritage week with the climax being the "Beating of the

Botanic Gardens Bounds". It all turned out to be very successful with plenty of locals giving good support, both on the day and on most days during the week as well. Congratulations to all concerned and hopefully such an event will become an annual ritual.

With rainfalls maintaining themselves into the summer season we can all look forward to a continued abundant and floriferous experience in the Botanic Gardens to share, hopefully, with a more abundant clientele as the season advances.

Bob Crowder

Propagators Report

We regret to announce that Jane McArthur has decided to retire from the Bulbs Team which she has been leading since about 1989. We shall miss her knowledge, enthusiasm and hard work more than we can say and we are casting around for other possible ways of operating. An event to mark the occasion is being planned.

The potted bulbs did well over winter with the early-flowering narcissi selling on the Sale Trolley and the remainder at the Bulb & Small Conifers Spring Sale on 23 September 2006. Thanks to all the Staff and Friends who helped on that occasion.

The Perennials Team not only produced a great display of flowering goodies at the October 28th Plant Sale; they also eradicated the ivy that was doing its best to bring down the brick wall between us and Christ College grounds! Great work on both counts.

The Succulents and Cacti have been reorganised and some of the big and very unusual items have been sold for excellent prices. The rearrangements will speed the growth of the new plants. The Cactus Tent has also been home to some of the *Ensete ventricosa* (banana plants) which we overwintered. Thanks to the Perennials Team's care, about 10 of them did well and could soon be planted out in sheltered places. Several went at the October Plant Sale.

The Trees, Shrubs and Natives group of plants sold very well off the Trolley during early Spring so that we were short of Natives to sell at the October Sale. However, we sold a great many small

conifers at a reduced price to clear space for the new cuttings soon to emerge.

The October Sale went very well considering the uncertain weather and the many other events in Christchurch that weekend. We noted how easy the setting-up process is now. We have 6 matching trestle tables, built by Brian Jarnell, which can be brought out quickly and easily on our new trolley. The gazebo takes a bare 10 minutes to raise. The whole process of setting up can be done in under an hour, providing we load the plants on the big trailer the night before. Sue Sanders, the on-duty Staff member, was most helpful at the October Sale and all the Friends rallied round to make the occasion an enjoyable one. We were supplied with fresh baking, coffee and tea to keep up our energy levels! Thank you to everyone who helped or was involved behind the scenes.

We have a new member of the TSN Team, Susan van der Stellenbosch who is writing her Masters thesis at Lincoln University Parks and Recreation on the subject of Volunteer Groups! We have all been interviewed and hope for a good result for Susan.

As usual we would like to request donations of washed pots in green or black, without commercial logos. Is there anyone prepared to help with pot washing? We can get use of proper sinks and hot water.

We also ask if anyone has a set of 4 high stools to give us, perhaps bar stools or similar, to use in the Tunnel House; potting up seedlings calls for long periods of standing at the bench and seats would be very much appreciated. Please contact Helen or Trudi if you have anything that might be suitable.

Helen Constable, Coordinator, Propagating Teams.

Seasonal plant and bulb sales

The Friends' Committee is pleased to report that notwithstanding chilly weather the Spring Plant Sale on 28 October produced a profit of \$1,284. That sum together with the profit of \$1173 from the earlier Small Conifers and Bulbs sale was again a most welcome boost to the Society's overall funds which, as members are aware, will be applied towards one of the Special Projects listed in the Master Plan for the Gardens once

decisions on the Plan are made by the Council.

The next seasonal sale a "Summer Plant Sale" will be held during February 2007. In the meantime selections of plants, including those left over from sales days and suitable for planting at any time, will continue being placed on a trolley outside the Information Centre and available for purchase from there.

The Committee is most appreciative for the help of all the Members who again made the recent plant and bulb sales successful fund raising activities. As previously stated the helpers include the people who over many months, gathered, prepared, potted, nurtured and labeled both plants and bulbs for the respective sales. Additionally others whose work was most appreciated are those who coordinated, advertised and administered all the essential arrangements for the sale, including last but not least those who worked long hours selling plants and bulbs on sales days and in cleaning up afterwards.

Newsletter Editor

Adrienne Moore has given up her long-standing role as Editor of the Newsletter. As a profile of Adrienne featured not so long ago in the Newsletter (issue No 64) I shall not attempt to describe again the enormous contribution Adrienne has made to the Friends and to the Botanic Gardens. Adrienne has however been involved with producing the Newsletter since the beginning and this occasion should not pass without extending to her our thanks for the time, enthusiasm and knowledge that she has brought to the task. Since taking on the job I have been impressed by the comments praising the quality of past Newsletters – that is very much a reflection of Adrienne's work.

Also I give Adrienne my personal thanks for her thoughtful assistance to me in taking over the daunting job as Editor.

This Newsletter will be my first editorial effort. I hope that it and future Newsletters continue to meet your needs - to help me do this your comments, whether critical or not, will always be welcomed and considered.

Subscription renewals

A reminder to those that have not paid their subs for the year ending 30 June 2007 - they are now overdue.

14 FRIENDS OF THE CHRISTCHURCH BOTANIC GARDENS

Contact Numbers			Newsletter	Bill Whitmore	339-8356
President	David Moyle	358-8914	Programme	David Moyle	358-8914
Vice President	Don Bell	343-6699	Helpers		
Immediate Past President			Plant Sale	Helen Constable	980-9358
Treasurer	Lesley Godkin	388 0043	Newsletter mail out	Jean Norton	379-2464
Membership Secretary	Ruby Coleman	355-8811	Botanist	Bill Sykes	366-3844
Minutes Secretary	Jim Crook	358-5845	Guided Walks	Max Visch	338-2273
Committee Members	Elizabeth Wolff (03)	313-5046	Guide Co-ordinator	Pat Whitman	384-3475
	Nancy Boundy	388-6345	Enquiries	Info Centre	941-6840 x 7590
	Bill Whitmore	339-8356	Administrative Assistant	Sylvia Meek & Fay Jackson	
Outings/trips	Alison Fox	942-4989	Newsletter layout	Maria Adamski	
Ex Officio	Jeremy Hawker	941-7580			

Coming Events

Bus trip to three North Canterbury gardens – 25th November 2006

Visiting the Sefton garden of Kay McLachlan and Rudi Steyn, the farm garden of Joanne and Robert Judson at Glencoe and "the Priory" garden of Rosemary Harper at Cust - with lunch at the Ashley Gorge Picnic Ground. Bring your own lunch and refreshments.

The bus is now full but, IF THERE ARE STILL PEOPLE WHO WOULD LIKE TO JOIN THIS TRIP, I can arrange a larger bus. If you want to go on this trip and have not yet booked please ring me immediately so I can make the necessary arrangements. Alison Fox - ph 9424 989

The cost is \$28 for Friends and \$30 for non-members (if you would like to bring a friend) and we will meet outside HMS Pegasus, Montreal Street North (just before Bealey Ave) at 9.15am. ALSO FOR THOSE BOOKED ON THE TRIP; SOME OF YOU MAY LIKE TO BRING A LIGHT FOLDING CHAIR AS THERE MAY NOT BE ENOUGH PICNIC SEATS TO GO ROUND.

Christchurch Botanic Gardens Inc
PO Box 2553
Christchurch

Friends of the Christchurch Botanic Gardens Coming Events November 2006 – March 2007

Friends' Phone Contact:

President:	David Moyle	358 8914	Membership:	Ruby Coleman	355 8811
Vice-President:	Don Bell	343 6699	Group Guided Walks	Pat Whitman	384 3475
Programme:	David Moyle	358 8914			

Sat 18 Nov, 2.00pm	Guided walk – “Roses Old and New” with Friends' Guide, Diana Madgin, \$2.
Sat 25 Nov, 9.30am-4.30pm	Bus Trip to three North Canterbury Gardens. See details in Newsletter.
Sat 2 Dec, 4.30-6.30pm	Christmas Function at Petanque Rooms. Please bring a plate of finger food. Petanque games, drinks and finger food, raffles.
Sat 16 Dec, 2.00pm	Guided walk – “Christmas Shoppers's Respite” – A walk in the Botanic Gardens to learn about plants associated with Christmas and the Bible, with a Friends' Guide. \$2.
Sat 20 Jan, 2.00pm	Guided walk in the Botanic Gardens with a Friends' Guide. \$2
Tue 23 Jan, 12.10pm	Guided walk – “Plants and You – Discover the Connections” – David Barwick, BG Staff member.
Sat 24 Feb, 2.00pm	Guided walk in the Botanic Gardens with a Friends' Guide. \$2
Tue 27 Feb, 12.10pm	Guided walk – “Botanics bite back” – Darren Tillet, BG Staff member.
Sat 10 Mar, 2.00pm	Visit to Victoria Park. A not to be missed opportunity to visit the 19 th Armoured Regiment's Memorial at Victoria Park. Frank Harvey who is the regiment's President will explain about the various plantings from both a botanic and historical perspective. Meet at Victoria Park - plenty of parking below the monument.
Sat 17 Mar, 2.00pm	Guided walk in the Botanic Gardens with a Friends' Guide. \$2.
Tue 20 Mar, 12.10pm	Guided walk with a BG Staff member.

- **During February and March the Friends' Guides will be doing two walks each day.** They will leave from the Gardens entrance by the Museum at 10am and 1.30pm.
- Watch out for the **Floral Festival** to be held over the days 9 to 18 February.

Guided Tours: For group bookings all the year, for the *Introduction to the Gardens and Seasonal Highlights Walk* – phone 384 3475.

All Friends' guided Saturday walks leave from the BG Information Centre unless otherwise noted.

All Botanic Gardens' Staff led walks/talks depart from outside Cuningham House near the Rose Garden. (Fourth Tuesday at 12.10pm)

All are welcome to our events. Please encourage family and friends to join in.