# Newsletter

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

**No 45, Summer 2000**

## INSIDE



FCBG
PO Box 237
Christchurch

## President's Comment

Although down from last year we still had a good return from the annual plant sale. When combined with the proceeds from the bulb sale, nearly $9,000 has been raised which is great. I guess a bit of rain will not deter the really serious gardener from a bargain. Many thanks to the people who looked after the stalls and helped tidy up afterwards.

In the coming year the committee will be working closely with the garden staff to coordinate the use of the information centre for public talks and meetings. New, large displays may mean the centre cannot be used for large meetings (as is happening this year with our Christmas Function). Medium to long term the prospects look exciting with two buildings that could act as venues for our talks – the old RSA Bowling Club building and the McDougall Art Gallery. In the meantime, we will have to keep in touch with the information centre staff, to make sure the recently expanded centre is fully utilised for both 'Friends' and Garden activities.

You may have noticed in the papers last month that the council has agreed to install planters to display flowering plants in the south east corner of Cathedral Square, with the prospect of expansion elsewhere.

The planters will be approximately 1 metre square with internal trays to hold the potted plants. They will be very similar to the Christchurch Garden City Trust Floral display along Worcester Boulevard. The plants will be moveable and will be arranged in clusters for bigger impact. They will also be able to be moved out of the way during special events. Each planter will hold 36 2.5 litre pots and will sit in a shallow reservoir of water to extend the period between waterings. The plants will need changing at least four times per year; or even more if we have storm events like last month.

Extra plant material will be carried though to replace any deaths or damage by vandalism. Floral displays in civic spaces are not uncommon around the world so subject to our weather extremes there is no reason why they should not have a positive impact in the Square.

The committee and I would like to wish you all a happy festive season, and if you are travelling away over the holiday period, do take care.

*Dennis Preston*

## Botanic Gardens Jottings

The south western storm which occurred on Thursday 12 October 2000 caused significant damage to several of the mature trees in the botanic gardens. During the day, small limbs were blown from a number of trees, but it was in the evening when the ground was saturated after steady rain throughout the day and wind gusts which peaked at over 100kph, causing six mature trees to be completely blown over. This has been a tragedy as three Quercus coccinea and two Crataegus species were among those destroyed. Staff did a particularly good job in dealing with the initial clean up, allowing the grounds to be open to the public after two days of closure.

## Jottings continued ...

### *Rolleston Avenue Frontage*

Proposals for the new front gates to the botanic gardens and the alterations to the Rolleston Avenue frontage have met with some objections in the public consultation process. As a result, some amendments are being made to the plan and the proposals will be distributed city wide for comment.

### *Wirable Art*

Several staff, including apprentices, were involved in designing and constructing a display as a part of this event at Gardenz. The entry gained the award of 'Best Overall' and it has been gratifying for staff to see their work receive due recognition. Well done.

### *Observatory Lawn*

This is the area formerly occupied by Paulownias, Philadelphus and Kolkwitzias. Currently, it is being prepared for cultivation and new construction. You are encouraged to visit the gardens and check out the on-site plans.

*Warwick Scadden*
*Garden Parks Team Leader*

# Recent Events

## MAGNOLIAS AT LINCOLN UNIVERSITY

**by Roy Edwards**

*(Notes from a talk given to The Friends of the Christchurch Botanic Gardens Inc. on 10 November 1999).*

### *Introduction*

In the winter of 1990 the nucleus of a *Magnolia* collection was planted at Lincoln University. Additional plants were purchased in 1991 and 1992. After 1992 further development was slow until a grant was given by the Brian Mason Scientific & Technical Trust to increase the collection. In June 1998 the Brian Mason Scientific & Technical Trust awarded a grant of $5000 for additional plant material and labelling. With that grant the collection has been broadened from magnolias to include other genera and species within the Magnoliaceae family. The collection now includes approximately one hundred and twenty plants from four genera; *Magnolia, Manglietia, Michelia* and *Liriodendron.*

A second grant of $7000 has recently been awarded by the Brian Mason Scientific & Technical Trust for further development of the Magnoliaceae collection and work which Dr Anthony Mitchell will carry out to look at other ways of identifying plants within the collection by DNA extraction.

### *Rabbits*

Rabbits and to a lesser extent hares are the major pests of the collection at Lincoln. Rabbits are extremely active throughout the year, but are particularly noticeable during the winter months when they attack the roots of the magnolias. They also attack unprotected young plants by chewing young stems, breaking and or ring barking them. Occasionally hare damage is evident where newly planted trees have had shoots nipped off. Any new plantings of the Magnoliaceae at Lincoln University are now routinely protected with wire cages for a few months as a protection against rabbits and hares. Shooting has also been carried out in the past.

### *Magnolia propagation*

It appears that most magnolias are grafted on to rootstocks of seedlings. From my experience to date this may not produce the best results and there have been many instances of magnolias that have shown reversion to the rootstocks. This is easily observable when the plants are in flower as two different types of flowers or colours may appear on the same plant. In one specific instance where a plant of *Magnolia acuminata* 'Golden Glow' was grown it flowered the second and third year from planting, but the scion died after flowering in the third year. The rootstock however did not die and has since flowered with extremely large flowers that appear to be of Asiatic hybrid parentage. The flowers of this rootstock are up to 270mm across and unlike any other *Magnolia* x *soulangeana* I am familiar with. (Recent DNA analysis work by Dr Mitchell at Lincoln University has shown this to be a *Magnolia* x *soulangeana* hybrid).

### Pruning

To date very little pruning has been carried out on any of the magnolias in the collection with the exception of storm damage, weak crotch angles or removing errant rootstock growth that has developed at the expense of the scion. The latter has usually been cut from tagged branches soon after flowering. The different flowers of the rootstock and scion make it easy to select the material for removal. In a few cases, some heavy pruning has been carried out to remove branches with weak crotch angles to prevent future problems. Where heavy pruning has been carried out there has been a response by the plants in producing a large number of shoots. These need to be cut out very early. It is better to avoid heavy pruning by correcting branch angles or removing unwanted shoot growth as early as possible. Flower initiation for most spring flowering magnolias appears to occur in early summer so to avoid potential flower loss, prune as soon after flowering as possible.

### Flowering

Since 1998 I have been fortunate to have Mr Bruce Palmer work on a voluntary basis to assist with the management of the area. Bruce also undertook to record the magnolias in flower once a week. Flower records were based on an estimate of flowering for each plant in flower on that day. From those records information has been put into a database and a graph for each species showing expected flowering times can be produced. By aggregating all of the flowering records kept for 1998 together, the best two weeks to have visited Lincoln in 1998 to view magnolias was in the weeks starting the 21st and 28th September. For 1999 the best two weeks started the 20th and 27th September. Bruce Palmer is continuing to record magnolia flowering this year at Lincoln University and Kristian Davies of the Auckland Botanic Gardens kept flowering records of *Magnolia kobus* var. *stellata* 'King Rose' for 1999. This has enabled us to get an overview of the likely differences in flowering period by comparing the same cultivar between the two sites.

Once we have sufficient flowering records, flowering times can be compared with past climate data and we may then be able to predict when flowering will occur on the basis of heat unit accumulation after flower initiation. Comparisons of flowering times with other species at Lincoln University and with Auckland Botanic Gardens and with climatic data of both regions to determine heat unit accumulation will help fine tune the results. From observations to date it is possible to have some magnolias in flower in Canterbury from July to May, nine to ten months of the year.

### Frost damage to flowers

Early flowering plants can be susceptible to damage by frost. Frost damage is observed as a browning or blackening of the perianth prematurely, effectively reducing the amenity values of that plant then fall within a few days. From my observations not all flowers open at once, flowering is usually a progressive event and frost damage tends to only destroy the flowers that are open, buds enclosed by the large hairy perules seem to be protected and these subsequently open later. If the temperatures remain low for a few days it appears as though flowering is also delayed, resuming as temperatures increase.

### Pollination and seed set

A number of seedlings grew during the last summer. These were tagged with the intention of lifting and bagging the seedlings in the early winter. Rabbits or hares it seems took every seedling in late autumn 1999, leaving just a few decapitated seedlings as evidence. This summer *Magnolia sieboldii* has produced numerous seedlings (approx. 80 plants have been potted up) growing in the bark mulch beneath the branch spread. Any other tree in the collection has only ever produced a few seedlings at most. Magnolias are protogynous plants, the carpels mature before the anthers are ready to release pollen within the same flower. In order for pollination to occur pollen must then be brought from another flower where the stamens have released pollen. Soon after the pollen has been released from the stamens they appear to collapse. At this stage thrips, honey-bees and a type of fly have been observed on the flowers.

### Selecting the 'best ?'

My personal favourites are the Asiatic magnolias as a group and within those there are many fine options. In terms of beauty *M. sprengeri* 'Diva' has always impressed me, for fragrance *M.* x *weisneri* is superb. In terms of reliability of flowering in Canterbury *M.* x *soulangeana* and *M. stellata* are hard to beat. (*M. denudata* and *M. liliiflora* both of which are hardy in Canterbury and beautiful in their own right are the parents of *M.* x *soulangeana* from which a number of fine cultivars have been selected). How do you leave out of any discussion of magnolias the early flowering ones such as *M. campbellii* or the

## Recent Events continued ...

serenely beautiful flowers of *M. sargentiana*? There are some very good NZ raised hybrids such as those of Felix Jury, plants such as *M.* 'Serene', *M.* 'Vulcan'.(If you have 'Vulcan' have you noticed the first flowers are all large, the second and lesser flowering all of the flowers are less than half the size?). *M.* 'Iolanthe', *M.* 'Apollo' and *M.* 'Mark Jury' to name but a few. These are all large flowered hybrids. Others such as 'Star Wars' (a N.Z. cultivar selected by Oswald Blurnhardt) and 'Royal Crown' greatly extend the flowering period and all are well worth growing. For something different the large leafed species *M. macrophylla* flowers in late November and into December. This plant has deep pudding plate shaped flowers to about 25cm in diameter. All the above covered are white, cream or pink shades through to deep rich purple. There are other magnolias now available that have yellow flowers. Flowers such as those of *M. acuminata* 'Golden Glow', *M.* 'Yellow Fever' (an unfortunate name), *M.* 'Elizabeth' and *M.* 'Yellow Bird' are possibilities worth growing. *M. acuminata* one of the parents of most of the yellow flowered cultivars is a deciduous North American tree which needs a lot of space. Another North American species well worth space in the garden is *M. grandiflora*. This species is evergreen and produces large lemon scented flowers over the summer, a few at time until frosts occur. There are also number of selected cultivars of *M. grandiflora* as well as hybrids between this and *M. virginiana* another North American species.

***Roy Edwards***

## SPRING WALK

***16th September***
***with Adrianne Moore***

There was a large group of 17 friends and visitors who proceeded around the Kiosk Lake to a point just past the swamp cypresses where numerous violas were growing. These violas were part of a collection donated by Kerry Carmen. Of the 500 species or so most are perennial but those which we grow come from the mountainous areas of Europe and are grown as annuals.

Close at hand is a small evergreen Magnolia called 'Little gem' planted in memory of Averill Biddick, a wonderfully helpful lady who was in charge of the Information Centre. There is a plaque under it.

The Kaka Beak Cleanthus was pointed out. There are very few in the wild and its future relies on cultivated plants. There are several colours from scarlet to pinks and a rarer white.

Moving over to the annual trial plots behind the weather station we looked at the tulips which were flowering profusely. Red was the commonest colour. Tulips originated on the slopes of the Himalayas and the heights of Turkistan. Tulipomania reached Britain in the 16th century and Holland before 1700. According to research a single tulip bulb sold in Britain for two loads of wheat, or four loads of rye. In Holland a tulip bulb could fetch up to 2000 florins.

We passed through the native area noting the pale yellow flowers of Pepperwood (*Pseudowintera colorata*) in fascicles of 2-4. Later we were to see *Drymis winteri*, a large tree and in the same family as the Pepperwood in the primrose garden over the river. Winter bark, to give its common name, comes from Patagonia. One of Sir Francis Drake's captains observed local Indians using the bark which could be used as a scurvy preventative (rich in vitamin C).

Primulas and cowslips were abundant here. The Riccarton drain has been extensively landscaped and the new name Riccarton Brook is more attractive. *Viola denticulata*, Corydalis and a host of other small plants, not yet with nameplates, have been planted. Azalias, botanically Rhodendrons, were in flower.

In 1933 James McPherson – then curator – began the planting of daffodils under the oaks and ashes. The original 16,000 bulbs are now hundreds of thousands and are a magnificent sight in September along with thousands of blue bells.

A main feature of the Japanese maple area on the west end of the Archery Lawn, and in several other areas was Helleborus, *H.corsica* has evergreen leaves with spiny edges and beautiful green flowers which Adrianne says keep much longer if the stems are pierced with a needle and then soaked totally in water overnight, before putting in a vase., *H.orientalis* (Christmas rose) has flowers which vary from almost white through lilac to purple. Both of these plants come from the eastern Mediterranean countries.

***Peter Mahan***

## ROMANCING THE PLANT HUNTERS

This was the topic of a splendid talk given in the Kiosk recently by Dr David Given. He began with a slide of a statue of Linnaeus taken by him at Uppsala in Sweden some years ago. About 23 of Linnaeus' students became professors.

Sir Joseph Banks was keenly interested in plants. He was rich and like James Cook a man of common sense though less cautious and more headstrong. When the Endeavour left New Zealand and headed west, Banks had collected 360 botanical specimens. He found south east Australia a plantsman's paradise and 331 Australian plants were collected. The genus Banksia bears his name. By the time he reached England in 1771 1,300 new species had been described and named by Banks.

On Cook's second voyage he took with him Francis Masson who was dropped off at Cape Town which at that time was under the control of the Dutch East Indian Company. His two South African journeys resulted in the collection of more than 400 new plant species. Among them, *Amaryllis*, the Bird-of-Paradise flower (*strelitzia*), protea, Vallota and Arum Lily.

David Douglas collected and travelled extensively in Western North America. Among his introductions were *Pinus radiata*, *Abies grandis*, *Garrya elliptica*, an evergreen shrub with long catkins or tassels and some 200 other species. He met a tragic end in Hawaii by falling into a covered bull pit. His gored and trampled body was discovered shortly after.

Robert Fortune, a Scottish plant hunter, was a skilled botanist and he travelled extensively in China. His adventures and adversities were many, as were the plants he collected. In all he made 3 trips to China. Weigela, Mahonia, Jasminum, Forsythia, *Anemone hupehensis* and *Lonicera fragrantissima* which can be seen in our Botanic Gardens were some of his introductions.

Ernest Wilson was another plant collector. Employed by James Veitch & Son, he was sent to China at age 23 when it became apparent that China had an immense and diverse flora suited to English and European conditions. Like George Forrest, who was a contemporary, both men introduced a large and varied array of plants to horticulture. *Acer griseum*, a beautiful slow growing maple, *Lilium regale*, *Magnolia sinensis*, and *Cornus Kusa* var. *chinensis* were some of Ernest Wilson's introductions. Of George Forrest's discoveries, *Primula Vialii*, *Gentiana sino-ornata*, and *Camellia saluensis* were outstanding. Credited with introducing a thousand plants.

Many more were mentioned, but one and all of the plant collectors have given us the most beautiful and outstanding floral garden gems the world has to offer.

This had been an excellent evening and a wonderful introduction to how we gained our garden plants.

***P. Mahan***

## TREES FOR SMALL GARDENS

***with Tony MacRae***
***Walk Report 21 October 2000***

After many years in the Tree and Shrub Nursery business, Tony was well qualified to guide this walk and was ably assisted by his wife Wendy. We were encouraged to look creatively at familiar plants to find examples for smaller home gardens and several less common plants were included. Many plants usually grown as shrubs, can with careful training of their growth and regular pruning, be used as small trees, e.g., Camellias. Some trees can also be shaped to limit the size if pruned in their early growth stages. Even larger trees grown in containers can be kept in check for some years before needing to be planted out.

Some of the trees discussed were:

Golden Totara; which trims well; Kowhais, e.g. *Sophora teptraptera* "Gnome", a dwarf Kowhai that flowers when young; Pseudopanax species and cultivars, e.g. *Pseudopanax arboreus*, *P laetus*, (the five-fingers), *P ferox* (Lancewood); Pittosporum species, e.g. *Pittosporum tenuifolium* "Irene Paterson" which if kept trimmed produces creamy new growth; *Dicksonia squarrosa* tree fern; *Cordyline australis* (Cabbage Tree). [To restrict the growth take out the growing tip to encourage branching and fresh new growth. Do not plant cabbage trees near lawns where fallen leaves are a problem for mowers]. Magnolias e.g. *Magnolia grandiflora* "Little Gem" and *M. stellata* shape well. Malus (crab apples), Cornus, (Dogwoods) and Prunus (Cherries) and Ilex (Hollies) all have smaller growing forms. Acers (Maples) do well in tubs. For bark interest suggestions are, *Acer griseum* (Paperbark Maple),

**Continued on page 7**

# Coming Events

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| **November 15th** | **Wed 7:30pm**<br>Information Centre | **Talk** | "*Rosemary and Lavenders*" by Virginia McNaughton. |
| **November 25th** | **Sat 1:30pm**<br>Information Centre | **Walk** | "*Groundcovers and Other Plants*" Neil O'Brien. |
| **December 1st** | **Fri 5:00pm**<br>Townend House | **The Friends Christmas Party** | Please bring a plate. Townend House is within the Botanic Gardens |
| **December 5th** | **Tue 9:00am**<br>Information Centre | **Walk** | "*Tree Culture*". Dieter Steinegg. |
| **December 16th** | **Sat 1:30pm**<br>Information Centre | **Walk** | "*Redwoods, Swamp Cypresses and Other Relicts.*" Max Visch. |
| **December 17th** | **Sun 12:00 noon to 5:00pm** | **Victorian Garden Party** | Held in the Gardens as part of the 150th Anniversary of Canterbury. |
| **January 20th** | **Sat 1:30pm**<br>Information Centre | **Walk** | "*Plants introduced from China and Japan by Robert Fortune*" with Adrianne Moore. |
| **February 1st** | **Thu 2:00pm**<br>Information Centre | **Social** | Afternoon tea and social gathering. |
| **February 13th** | **Tue 9:00am**<br>Information Centre | **Walk** | Staff member. (Note the date. This is the second Tuesday because of Waitangi Day.) |
| **February 15th** | **Thu 7:00pm**<br>Information Centre | **Walk** | Evening Walk as part of the Floral Festival. |
| **February 17th** | **Sat 1:30pm**<br>Information Centre | **Walk** | "*Historical Walk*" taken by Friends guides. |
| **February 20th** | **Tue 7:00pm**<br>Information Centre | **Walk** | Evening Walk as part of the Floral Festival. |
| **February 22nd** | **Thu 7:00pm**<br>Information Centre | **Walk** | Evening Walk as part of the Floral Festival. |
| **February 25th** | **Sun 10:30am to 4:00pm** | **Big Day in the Gardens** | The end of the Floral Festival. |
| **March 2nd** | **Fri 2:00pm**<br>Mona Vale | **Walk & Talk** | Guided tour of Mona Vale starting at the Rose Garden. Phone Adrianne if you require transport (351-5915). |
| **March 6th** | **Tue 9:00am**<br>Information Centre | **Walk** | "*Bedding Schemes*" with Louise Morgan of B.G. Staff. |
| **March 24th** | **Sat 1:30pm**<br>Museum Entrance | **Walk & Talk** | "*Walk around Curator's House and Garden*" with Louise Morgan of B.G. Staff. |

## Recent Events continued from page 5

*Betula utilis* var. *jacquemontii* "Silver Shadow", *Stewartia sinensis* and *Myrtus luma* syn *M. apiculata*, also seen as *Amomyrtus luma*, which is also attractive for its white flowers.

*Osmanthus* x *burkwoodii* is valuable for the perfumed white flowers in spring and evergreen foliage. *Dodonea viscosa* "Purpurea" (Purple Akeake) provides colour contrast and tolerates poorer soils.

*Adrianne Moore*

# Bits & Pieces

### REVIEW OF BOTANIC GARDENS' SERVICES

The City Council recently commissioned a formal Review of Council Services including the Botanic Gardens. Your committee made written representations saying that the Friends felt this Review presented an opportune time for the Council to recognise the adverse effects of cuts in staff that were made following a previous Review of Council Services. In particular the Council was informed that the Friends felt the loss of both a full time Curator and the Education Officer, together with under funding, had reacted to the detriment of the Gardens.

The Council has since advised that in terms of the Review it expects to relieve the problems created by the loss of the full time services of the Curator and Education Officer. The Council has also said that while it is unlikely additional funds will be allocated to the Gardens, staffing efficiencies should enable the Council to consider education, signage and interpretation in the Gardens along with marketing and promotion. However, the proposals made in the review are not yet certain because they have been released for staff comment before final decisions are made by Council.

*Jim Crook*
*Secretary, Friends of the Botanic Gardens*

### QUIZ EVENING

The Quiz Evening on 11th October was held in the tea room kiosk. It was conducted by Roy Edwards who again displayed inspiration. This quiz was different as questions, usually, 6 to 8 were on paper. One sheet to a group with a timetable to jot down the answers. A slide projector was also employed when producing the answers. The evening was right up to Roy's high standards and the winning group were given pot plants.

### PLANT AND BULB SALES

The Friends are deeply indebted to the members who worked on the stalls at the Annual Plant Sale on 7 October for many hours, notwithstanding miserably cold wet conditions. Special thanks are also due to the members of various sub-groups, who over many months, prepared, potted and labelled plants and additionally to those who co-ordinated, advertised and administered all the essential arrangements for the sale. The collective efforts of members were rewarded by the interest of the many continuing customers who again went away with bargains in good quality exotic and unusual plants.

Taken in conjunction with the proceeds of the earlier bulb sale organised by a small group of members, the Friends realised over $9,000 from these activities. That amount will make a substantial contribution towards the cost of the Friends' millennium project - the erection of a sun shelter in the Children's Play area of the Gardens.

*Jim Crook*
*Secretary*

### NEW BOX NUMBER

When sending your subscriptions (now due) to the Treasurer, please note our new box box number:

Friends of the Christchurch Botanic Gardens
PO Box 2553
Christchurch

### RAFFLE PRIZES

The raffle for the pot of flowering Pleione was won by Marjorie Morse.

# Feature Articles

## RANCHO SANTA ANA BOTANIC GARDEN

Rancho Santa Ana is one of the lesser known gems of the American West Coast and is nestled against the mountains bordering the northeastern part of the Los Angeles basin, in the suburb of Claremont. Like many American botanic gardens it has university connections, but it is far from being just an academic adjunct. Rancho anta Ana is an exciting place to visit, especially if time does not allow you to venture into the desert areas of the American southwest.

I have been privileged to know two of its Directors as personal friends – Bob Thorne and Roy Taylor (who lectured to the Friends several years ago). It is about 90 minutes by freeway from Los Angeles International Airport to the gardens. Once there you enter through a pleasant Spanish style building complex, research area, herbarium, library, visitor centre and into the gardens proper which are surprisingly extensive. This is a garden about California - not only its wild plants but its cultivars too, and one of the interesting discoveries is that California has produced a host of garden plants including many wonderful cultivars, many of which are unknown this side of the Pacific. One can also discover the traditional plants of the region.

But it is the desert plantings that take my eye. Having traveled extensively through the American southwest deserts, I can confirm that the Rancho Santa Ana garden landscapes really are authentic. Here you will see the succulents, the yuccas, Joshua tree and many of the other treasures of the desert displayed in wild-like habitats with the nearby mountains providing a dramatic backdrop. It is a place to photograph, to walk – and to simply admire. The staff are highly knowledgeable and undertake many research trips into the American southwest and Mexico. Each year they undertake research in Baja California, so they know the ecosystems, the plants and their landscapes well.

If you have a spare day in Los Angeles this is not a garden to be missed. There are other attractions too – close to the airport are the La Brea Tar Pits and associated museum where 40,000 years of animal and plant history is preserved – trapped in the tar which still oozes from the ground (this is where the film 'Volcano' was based). The Los Angeles Arboretum is also well worth a visit, and if you have time to get further afield, try Santa Barbara Botanic Garden with its magnificent manzanita collections. The LA region certainly has its undiscovered treasures.

*Dr David R. Given*

## THREE KINGS ISLAND

*A Talk and Slide Show at the Museum by Director Anthony Wright*

Encountered by Able Tasman in 1643 on the first day of Epiphany, hence the name – they were already settled by Maori – now known as the Great Island Princes Island, West Island and North East Island. Anthony made 3 trips to these islands in 1982-83 and 1989 with the Department of Conservation.

The islands are surrounded by furious seas and although just 60kms from Cape Reinga the first trip took 21 hours – on the fishing boat Pandora – very expensive $2,000 and everyone was seasick. The islands are very rocky with high cliffs and very few possible landing places, making going ashore hazardous and time consuming. Tasman noted the only permanent fresh water although he did not land. Du Fresne arrived in 1775 and Captain Cook spent 16 days attempting to clear the area in the summer of 1769-70 – from then until 1840 the Maori were the only known occupants. They left when food supplies diminished – there are signs of their habitation and cultivated areas.

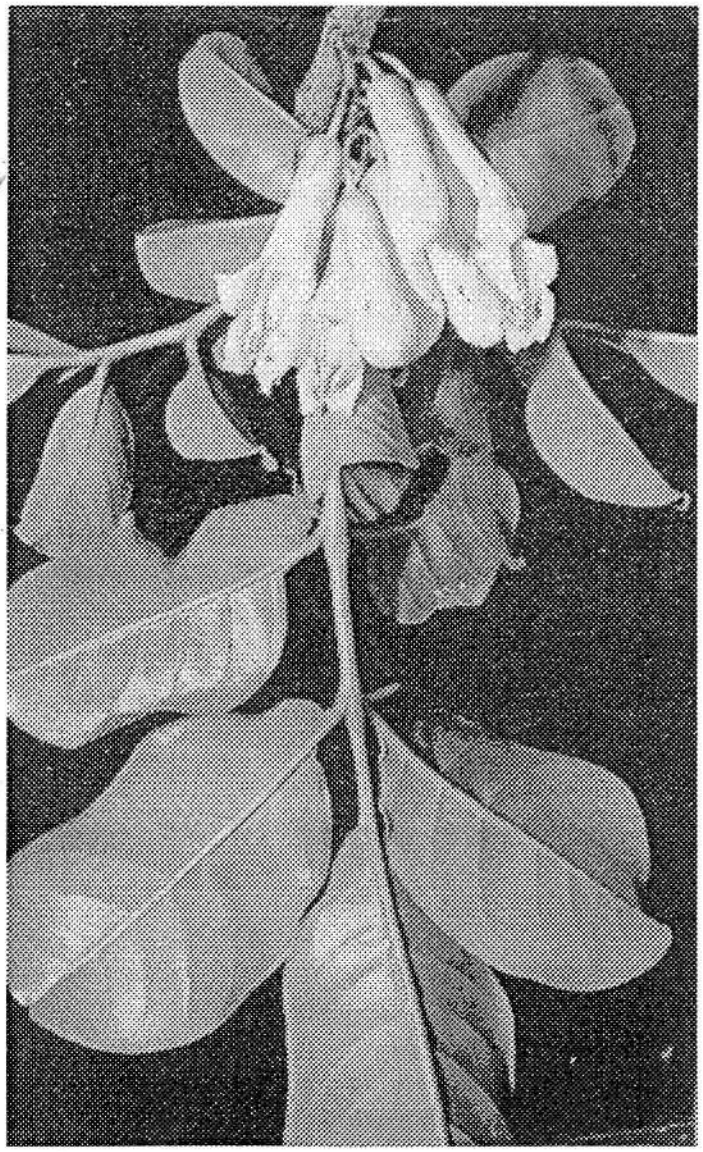
In 1887 T.F. Cheeseman, the botanist, landed to make a survey of flora and fauna and noted trees that have not been found since.

1889 saw 4 goats released to provide food for shipwrecked mariners. In 1907 a hut was provided to give shelter for castaways. The Government purchased the islands from the Maori owners in 1908 and declared it a sanctuary in 1930. During the 1930s-40s, discovery expeditions were made but until 1946 when the 393 goats were exterminated little regeneration was noted. First to regenerate were Kanuka and manuka followed gradually by puka, pohutakawa, ironwood and puriri. Red billed gulls bred in their thousands and skinks including the largest N.I. ones and land snails, also centipedes equipped to give vicious bites.

In 1960 a lighthouse was built and the surrounding area clear felled. Time passed and other plants became more common; Coprosma, rangiora, milk tree and hebes as well as pittosporum, cabbage trees, ferns, mahoe, lichens and bull kelp in the ocean.

The world's rarest tree, *Pennantia baylisiana*, was discovered, the only naturally occurring one known. There are several trees not known elsewhere including the *Elingamita johnsonii* named for the ship wrecked in 1902 just below where this tree was discovered.

The islands are often fog-bound but with an equitable climate giving rise to the dense growth and undergrowth and the establishment of unwanted weeds. Nowadays clothing and footwear of the rare visitors are scrutinised for weed seeds.



### *Tecomanthe speciosa*

**Tecomanthe speciosa - discovered in 1945 growing on Great Island in the Three Kings Islands. Only one vine was found. Its long term survival in the wild is uncertain. The tubular creamy yellow flowers are usually in clusters. A good garden plant, it is available at some nurseries. Needs some frost protection.**

Unfortunately unauthorised visitors do arrive to fish the abundant waters. A piece of New Zealand few of us will ever visit which made the excellent slides and interesting talk even more fascinating. Thank you Anthony.

*Ruby Coleman*

## ST LOUIS MISSOURI

A visit to the Botanical Gardens was a highlight together with a ride to the top of the Arch 630ft above the city during a 2 day visit to St Louis.

The Arch is a memorial to explorers Lewis and Clark who took 2 years to explore a route from the Mid-West to the West Coast over 200 years ago. The Gardens are beautiful and on the day we visited, it was for 'free' to celebrate the 200th Birthday of Henry Shaw, the founder of the Gardens which opened in 1859. The Gardens are extensive, rated one of the top 3 Botanical Gardens in the world and include Shaws Italianare House – a herbarium – a geodesic dome greenhouse – sculptures, a Japanese Garden of 'pure, clear harmony and peace' of 14 acres which includes a lake and much much more but for me the demonstration home gardens including fruit trees and vegetables was something that really appealed.

Half a day was all we had, so it was a rush! The State of Missouri is mainly flat and much devoted to Abraham Lincoln and Mark Twain. Their memorials and museums abound, interspersed by miles of maize and soy beans. One more highlight though was the Memorial to Sir Winston Churchill in the small University town of Fulton – this was a Church damaged during the London Blitz and due for demolition but rescued and transported stone by stone to commemorate Churchill's famous speech made in the USA about the Iron Curtain which had fallen. Now there is even a piece of the Berlin Wall on display. My whole 2 week visit to Missouri was a great experience.

*R.L. Coleman*

## Feature Articles continued ...

# THE NAMING OF PLANTS

*Botanical Nomenclature*

Mankind since very early times has been in the habit of giving names to objects, ideas, feelings etc. – so that he could talk about them and transfer information about them from the speaker to the listener.

Names are merely symbols for objects etc. – vehicles of communication. The use of the words chair, bicycle, spade immediately call to mind the objects they stand for – provided of course we are consistent in their use.

Primitive man (woman) must have had names for the plants he used for food, fibres, clothing, fuel, medicine, drugs, poisons, materials to build his shelter, canoes, weapons and tools. Not all the fruits he observed growing on trees would be edible – many were unsuitable as food or even poisonous – and this sort of information had to be passed on to his children and other members of the community.

Modern man also has names for most of the plants he is in contact with or uses for some purpose. In everyday life most of us use the common, local or vernacular names, e.g. waterlily, dandelion, sycamore, tulip tree, horse chestnut – and usually few problems arise.

The advantage of using common names is that they are usually easily understood and remembered. Pronunciation is rarely a problem – nor what syllable gets the emphasis. However, the disadvantages are that the same common name may be used for two or more different kinds of species e.g. the names dandelion, daisy, buttercup, pine, cedar, cypress, hemlock are often applied to a host of different and often unrelated species of plants. Also the same plant species may have two or more common names in different parts of the species area:

e.g. Douglas Fir – Oregon Pine, Red Fir, Yellow Fir, Red Pine etc.
Box Elder – Manitoba Maple
Tulip Tree – Yellow Poplar
Pin Oak – Swamp Oak, Water Oak
Paper Birch – White Birch, Canoe Birch, Silverbirch
Tree Fuschia – Kotukutuku (tree) and Konini (referring to the fruit)

Then there are language problems:
Dandelion (English)
Gemeini Kulablume (German)
Paardebloem (Dutch)
Dent de Lion (French)

Lastly common names do not reflect natural relationships i.e. the idea that species are related by common descent from an ancestral form. Common names are often applied to different species that are not related – at least not closely – often not even occurring in the same family e.g. Linnaeus originally placed conifers with needles in the genus Pinus, including not only the true pines, but also spruces, silverfirs and larches (which have now allotted genera of their own). The common name 'Cedar' covers a multitude of both conifers as well as some broadleaved trees. Only the four species of the genus Cedrus are true cedars.

The common name Sycamore applies to a maple in New Zealand, a plane tree in the USA and a species of fig (*Ficus sycamorus*) in the Middle East. The use of the names Elm, Oak, Silverbirch and Horse Chestnut are not very precise as there are many kinds of all these genera.

Biological Nomenclature tries to avoid such disadvantages that common names have by drawing up sets of rules called "The Botanical Code of Nomenclature". These rules must be followed whenever names are given to plants. To be universal, scientific names must be written in the same alphabet (Roman alphabet) and in the same language (Latin) and are subject to the rules of Latin grammar. The scientific names of plants are therefore Latin or are treated as Latin – even if, as is often the case, they are derived from other languages e.g. Greek, Arabic, Maori etc.

Under the Botanical Code:

1) The names of plant families must end in – aceae e.g. Rosaceae, Primulaceae.
2) The names of genera are singular nouns – written with a capital initial letter e.g. Rosa, Primula, Lilium etc.
3) The name of a species consists of 2 parts:
   - the name of the genus in which the plant is classified followed by
   - a second term which is peculiar to that particular species of plant e.g. *Rosa canina*, *Bellis perennis*, *Fagus sylvatica*, *Betula pendula*, *Quercus robur*.

The binomial system of naming plants was first proposed by the Swedish botanist Carolus Linnaeus (originally Carl Linne) 1707-1778. In 1753 he wrote "Species Plantarum" in which he classified, described and named every species of plant known to him. It was the first time that a binomial name was assigned to practically every species of plant known to him. His system however has been much improved on over the years by other botanists.

| **Fam: Fagaceae** | **Country of Origin Europe** |
|---|---|
| ***Quercus robur* L. Sp.Pl. 1753** | |

Note that:

1. the specific name robur is written with a small initial letter, even where it refers to the name of a person or geographical region e.g. *Rananculus lyallii*, *Fraxinus americana*, *Eucryphia moorei*, *Pseudotsuga menziesii.*

2. the citations L. for Linnaeus, Thun. For Thunberg etc. are generally left out except in scientific publications – to make sure of the exact name for the species – as the same name may have been applied to different plants by different authors.

3. the specific names e.g. robur, lyallii, americana, menziesii have no standing on their own – and should not be used to refer to any organisation – yet often sinned against e.g. macrocarpa should be *Cupressus macrocarpa*, Japonica should be *Chaenomelis japonica* as there's also *Eucalyptus macrocarpa* and *Pseudotsuga marcocarpa* – and many plants introduced from Japan have japonica as the specific name – e.g. *Aucuba japonica*, *Skimmia japonica*, *Cryptomeria japonica* etc.

4. Cultivars (= cultivated species) must be fancy names – they are no longer allowed to be in Latin – though much done in the past. They must be proceeded by c.v. or placed in single quotation marks. The word(s) used must also be written with an initial capital letter e.g. *Gleditsia triacanthos* c.v. Sunburst or 'Sunburst', *Acer platanoides* 'Crimson King'.

The advantages of the Binomial System of Nomenclature:

1. It is universal – worldwide – understood by all scientists

2. Every plant species has only one valid name, though sometimes synonyms occur for a variety of reasons – yet only one name is valid at any given moment

3. The scientific name reflects evolutionary relationships

e.g. Lilies

| | |
|---|---|
| Arum lily | *Zantedeschia aethiopica* |
| African lily | *Agapanthus orientalis* |
| Lily of the Valley | *Convallaria majalis* |
| Tiger lily | *Lilium tigrinum* |
| Day lily | *Hemerocallis fulva* |
| Madonna lily | *Lilium candidum* |

e.g. Roses

| | |
|---|---|
| Christmas rose | *Helleborus niger* |
| Alpine rose | *Rhododendron ferrugineum* + *R. hirsutum* |
| Rock rose | *Cistus species* |
| Guelder rose | *Viburnum opulus* |
| Rose Bay | *Nerium oleander* |
| Rose of Sharon | *Hypericum calycinum* |
| Briar Rose | *Rosa rubiginosa* |

None of these are closely related – all belonging to totally different families and only the Briar Rose is a true rose.

Generic names are not to be understood as descriptive or diagnostic. They are merely labels and many are quite without meaning. Many generic names are very old and the original meaning is lost. Yet in many other cases the author of a name has been guided in his choice by some peculiarity in the plants of the genus he is naming:

| | |
|---|---|
| e.g. Cordyline | derived from Greek Kordule – a club referring to the fleshy club shaped roots |
| Coprosma | dung smell – in allusion to the smell of some of its species when bruised |
| Calceolaria | Shoe or slipper |
| Agapanthus | Greek – Flower of Love |
| Liriodendron | Greek – Lily Tree |
| Rhododendron | Greek – Rose Tree |
| Chamaecyparis | Greek – Low or dwarf cypress |
| Acanthus | Greek – Flower with thorns |
| Acacia | Greek – Tree with thorns |
| Pittosporum | Greek – Seeds in sticky pulp – therefore sticky seeded |

***Max Visch***

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