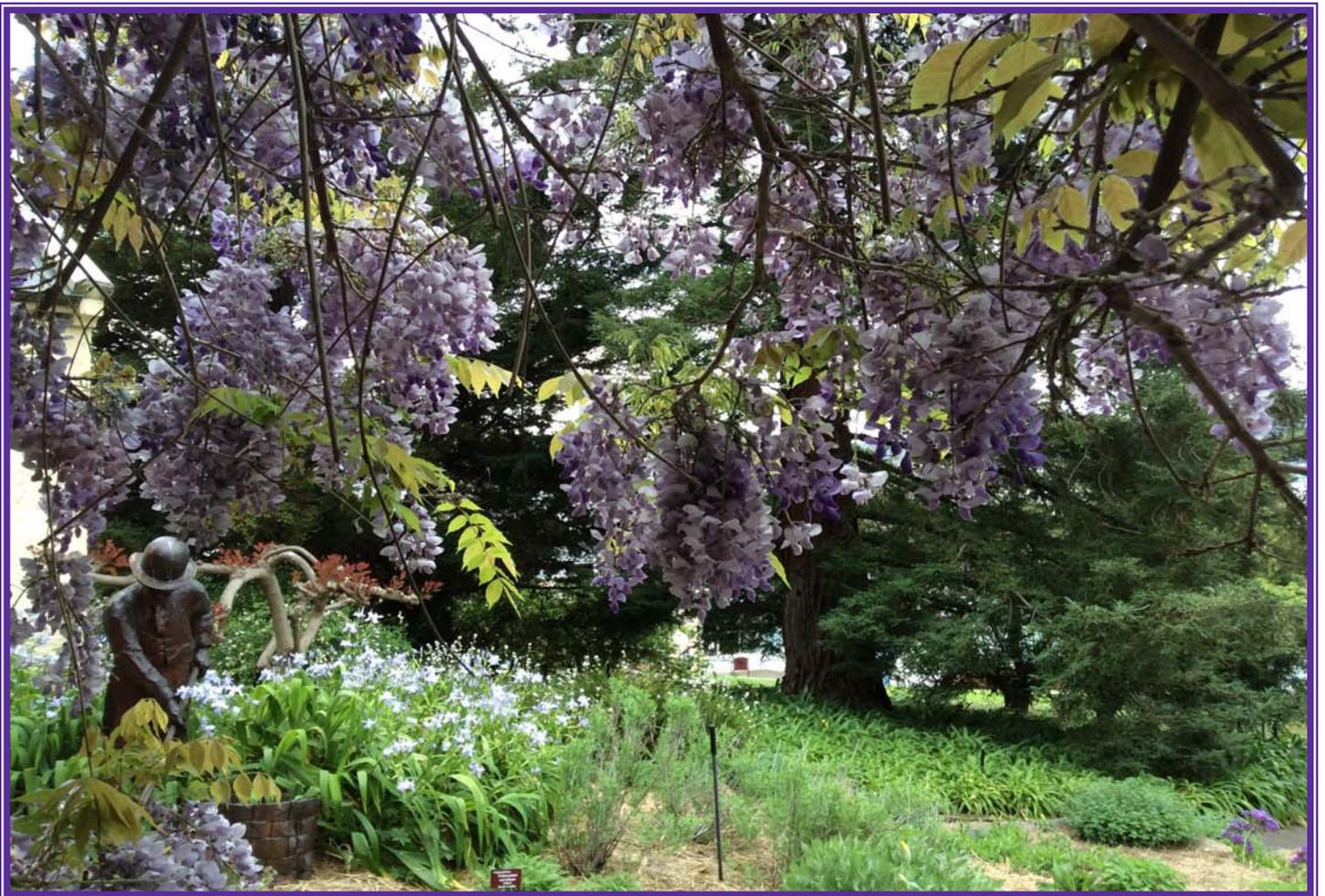


Fagus

November 2017

The Quarterly Magazine of the Friends of the Royal Tasmanian
Botanical Gardens



**In this Issue: Director's Report * President's Report * Annual Report * World First
Orchid Flowering * More Gardens' History * Delving Deeper into Soil * Seed
Harvest Success from the Far South * A Rare Day Out * Behind the Wall
* Favourite Garden Icon * Friends' News**

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Joan Booth; Gary Davies; Jimmy Corrigan;

Eileen Maskrey; Mike Maskrey; Lorraine Perrins;

Jenny Parrott; Marcus Ragus; Natalie Tapson;

Jane Tenniswood; Les Winspear

Our Cover

Purple Haze! Springtime view of the wisteria arch near the cottage.

Photo: Mike Maskrey

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RTBG Friends

This issue of *Fagus* marks the beginning of my third year as editor of the magazine. By now, I'm beginning to get a handle on the job, but I am continuing to learn all the time. I am lucky to have a number of very highly articulate contributors that make my task comparatively easy. However, the hard work that goes into making the final version of the publication so attractive and readable is mainly due to Kay, who as an experienced compositor, puts everything together. This November issue is a case in point. There is just so much to be squeezed in!

So, what do we have on offer for you in our spring edition? The Director, Gary Davies tells us in his report just what an exciting time it is for our gardens. A whole host of projects are getting under way, many of them to coincide with next year's Bicentenary. Our President, Joan Booth, presents her Annual Report on what has been a busy year for Friends. Her report lists the many achievements, but also presents the challenges ahead, especially with regard to forming a partnership agreement between the RTBG, Friends and Volunteers. Joan's President's report also brings us up to date on the AGM and future events.

Group Coordinator, Jenny Parrott, continues her series of articles on the history of the gardens. In this issue she deals with changes through the 1840s, including the construction of the Eardley-Wilmot wall and the criticisms received following the removal of fruit trees and the replacement of melons and cucumbers by native plants! Horticultural staff have made major contributions to this issue. Lorraine Perrins conveys the extreme excitement brought about within the garden community by the world's first blooming of the grooved helmet orchid, *Corrybas sulcatus*, outside of Macquarie Island. Lorraine has also written an article on Macquarie Island seed collection by Natalie Tapson, who has provided the images for the article. Recipient of a scholarship donated by Friends, Jimmy Corrigan, a trainee at the gardens, has written an article on his studies into soil science. We learn from Jimmy's article the importance of bacteria and fungi in soil and the implications for practical horticulture.

Lots of events of interest to Friends have happened since the last issue of *Fagus*. Two of these are covered in this issue. September 7th marked Rare and Threatened Species Day in which garden staff ran tours and gave talks throughout the gardens on the RTBG contribution towards the study and conservation of endangered plants. On the weekend of September 23rd and 24th the 2017 Blooming Tasmania Festival was held at the Albert Hall, Launceston. Jane Tenniswood has kindly provided us with a report on this event. Between 16th and 20th October, the Australian National Botanic Gardens in Canberra hosted the 2017 Conference for Volunteer Guides. This is briefly touched upon in Member's News, but will be the subject of a full report in our next issue. Our favourite garden icon this time comes by way of the stone guard lions near the Chinese Garden. Their presence there is due to an intriguing sequence of events, as you will discover. Finally, in this issue we go 'behind the wall' to visit a fascinating walled garden in Wiltshire UK, and learn from Les Winspear what delights are in store for us when Aladdin visits our gardens over the summer season. Enjoy!

Mike Maskrey

Director's Report

Once again, thank you for the opportunity of reporting to you as the Friends of the RTBG. Your partnership with the Gardens is an imperative to the overall success of the Gardens.

Damian Bugg has come to the end of his term as Chair of the RTBG Board. In accordance with the Royal Tasmanian Botanical Gardens Act 2002 the Chair can only serve two terms of 3 years, thus he has served his full term. We thank Damian for all his dedication, time and effort put into being Chair of the RTBG Board for the past 6 years. The staff, volunteers and I am sure Friends have appreciated his efforts and support given to them over this time.

It has once again been a busy period since the last Board meeting, and the management team have been hard working and managing multiple projects simultaneously with preparation for Spring, but also ultimately the Bicentenary.

Consequently, the Gardens are looking good with the colour boost of spring together with well-presented displays throughout. Well done to the staff, Friends and volunteers in their efforts for presenting such magnificent Gardens. Significant amounts of new bulbs have been planted within the Mixed Border in anticipation of the Bicentennial year, including tulips, large flowered ornamental Alliums & Liliiums. There will also be a focus on floral displays in the conservatory using Liliiums throughout the summer.

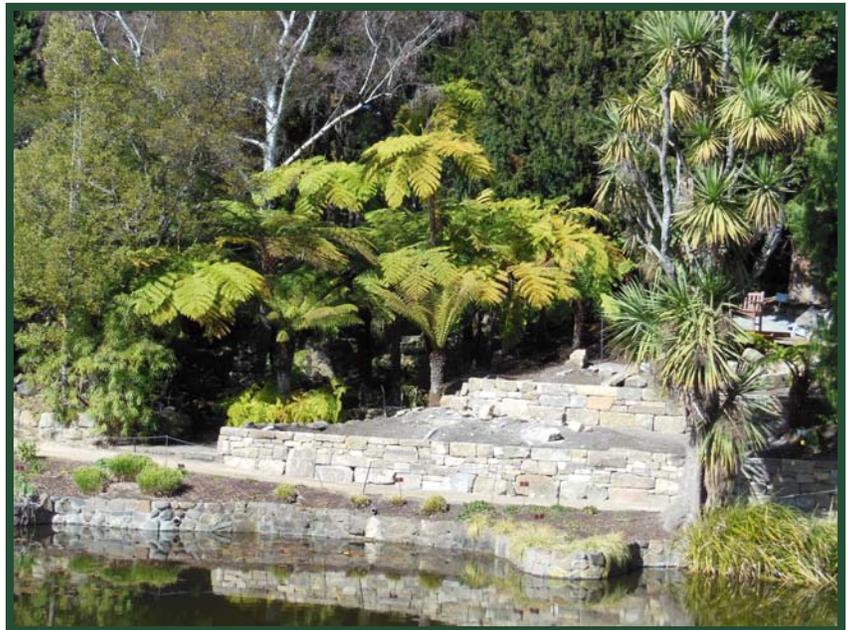
The nursery staff have been focused on the production of approximately 6,000 Tomato plants as well as a variety of herbs and ornamental plants for the spring plant sale which was held on the October 12 and 14, and raised approximately \$31,000 in sales. Another fine effort. The Volunteer Growing Group has provided invaluable support in the production of the plant material for the sale.

It is important to note that the Tasmanian Herbarium informed the Seed Bank Manager that a specimen he collected back in January this year was *Cardamine*

tryssa, a species that hasn't been seen in Tasmania since the 1800s and was believed to be extinct in the state.

On the 13th September, the RTBG announced that a plant of the critically endangered Macquarie Island grooved helmet orchid (*Corybas sulcatus*) had produced a flower, making this event the first of its kind outside Macquarie Island. Lorraine Perrins has a separate item on this, thus I won't go into any further details.

Planning for the 2017-18 collecting season has commenced. A prospective visit by a group of 6 Staff from 3 National Trust Gardens (Nymans, Bodnant and Mount Stewart) and 3 UK botanic gardens (The National Botanic Gardens of Wales, The Royal Botanic Garden Edinburgh and The National Botanic Gardens Ireland) is being incorporated into the planning.



Construction of three stone retaining walls above the Lily Pond (*pictured above*) was undertaken by the contractor 'Earthworm Landscapes' in September. This project, initiated by Horticulturist Kath Saunders is to complement the Bicentennial Lily Pad project. Along with the stonework, the RTBG Assets & Maintenance team constructed a timber deck-viewing platform that sits above the walls. Planting of the project was completed in early October.

>>>>

The pergola behind the hothouse near the Sustainable Learning Centre has been refurbished back to its original hardwood and moved into the Community Food Garden. It fits very well into this landscape and is already being used as a good place to get together and relax. In addition, the replacement of the timber decking around the French Memorial Fountain in September has really uplifted this area.

Visits for the first quarter are slightly down compared to last year's figures (65,000 compared to 69,000 for the same period last year). This is probably due to school holidays being a week or two later than last year.

With the upcoming peak season, focus has been on improving the visitor experience at the Gardens. The Interim Front Gate Project which is now commonly known as the Visitor Services Hub is fully underway and operating according to the Project Plan, with installation of the temporary structure looking to be completed by the first week of November. The recruitment of three Visitor Services Officers will assist in improving the visitor information services and sales both at the gate and in the shop.

Cruise ship season commenced on the 10th of October, which is the start of a record year of 60 cruise ships in port this season and Hobart welcoming a total of 182,241 passengers and crew.

The spring events in the Gardens are rolling out, with the focus on the seasonal tulips. In addition to the annual Tomato Sale which gained significant local media, free guided walks at the Gardens (hosted by Friends) were part of the Senior's Week program commencing on the 16th of October, and the Teddy Bears Picnic being held at the Gardens on the 25th of October is the State's flagship event for National Children's Week.

Stage three of the Brand Project has been completed. Red Jelly produced a presentation detailing the evolution of the RTBG Brand and the distilled purpose, belief and vision of the brand that relates to all areas of the business and provides a point of focus for staff and stakeholders. This brand work has been presented to the Friends, and has been positively received. Ongoing discussions have been underway with the FRTBG with the objective of working more closely together. A draft 'heads of agreement' for the development of an Opera-

tional Working Group represented by staff and volunteers has been developed.

The insights of the Brand Project are already being incorporated into marketing activities including the creative elements associated with the development of the Visitor Services Hub as well as a revision of the RTBG brochure.

Planning for the Bicentenary continues to progress with both the internal Bicentenary Working Group and the External Stakeholder Engagement Committee meeting recently. These meetings successfully progressed ideas and shaped the calendar of events and activity for the year.

The development of key projects in the Gardens includes the '200' display that will be positioned facing the Queens Domain Highway and attracting significant attention from both visitors to the Gardens and passing traffic. An upgrade of the facilities across the site is in progress and the time-lapse social media engagement project is on track to be completed by the end of November.

The Bicentennial Book is really looking good and progressing on schedule and will be available for purchase in December 2017, with a retail price of \$24.95.

The Lily Pad Project has had some delays however construction starts shortly with an eight week construction period.

The Sustainable Learning Centre Project is on track for completion by the end of 2017.

A big thankyou to all the staff, Friends and all volunteers for all your efforts during our busy season.

Gary Davies

Director



President's Report



Friends, especially those who donate their time with various activities in the RTBG.

Keep the date of Saturday 2nd of December free. Our guest speaker will be Tory Ross – the Marketing and Operations Manager of RTBG – who will be sure to give us a run-down of the plans for the Bicentenary celebrations in the Gardens. This will be our final General Meeting for the year and also our end of year social function (with a special morning tea).

Cheers

Joan



This year at our AGM, all positions were declared vacant. In the absence of more than one nomination for each position, all those nominated were elected unopposed. I was returned as President, Kay Hayes continues as Treasurer and Eileen Maskrey as Vice President (and tour guide co-ordinator). Catherine King was re-elected as Secretary and Jenny Parrott as Public Officer. With our other committee members: Fran Alexis, Aina Dambitis (Membership Officer), Mike Maskrey (Publications Editor) and Alison MacKirdy (Events Co-ordinator) I know that we have a dedicated and hard working group and look forward to a productive year ahead.

Also at the AGM, Dave and Megan Marrison inspired us with their presentation about the Gondwana plants they'd seen on their recent trip to New Caledonia and talked about the recent planting out of Gondwana plants in various areas of the RTBG.

Thanks must go to all those Friends who work behind the scenes in various ways. We look forward to your continued support.

One of the benefits of being a "Friend" was the free entry to the Preview sale for Tomato plants and vegetable seedlings and the 20% discount given to members of

Note added in proof: Wendy Bowman has since replaced Fran Alexis on the Committee as a representative for the Begonia Group. Thanks go to Fran for her services over past years.



Above: An example of acknowledgement for some of the work done by the Friends in the Gardens was this \$5,000 National Bank Community Link Award in 2000. See story on page 19.

Annual Report

It is with great pleasure that I present the Annual Report of the FRTBG for 2017. This has been my second year as President of Friends of the RTBG, a role I could not have filled without the support of the committee and the wider member body. The assistance and support of the staff and Management of RTBG has also been invaluable.

Our Special Interest Groups continue to be successful and the volunteer hours our members and other volunteers provide, of vital importance. Our 'in kind' support to the RTBG has been valued at somewhere between \$750,000 and \$1,000,000.

The annual tomato sale, once again held over two days, was well patronised and highly successful. Approximately 4,500 plants were sold over the two days with sales continuing from the shop and nursery and some bulk sales going out to other nurseries and market gardens. Under the new financial arrangements in the RTBG accounting system all proceeds go directly to the Gardens, with the propagation and sales assistance being the contribution of Friends and volunteers (part of our 'in kind support'). Nursery volunteers, as well as taking and propagating cuttings, were also involved with preparing vegetable seedlings for the Autumn Event held during the last week in March and first week in April.

The Seed Bank and Orchid Conservation volunteers are specifically trained in laboratory techniques of germination and propagation and continue their invaluable scientific work. The Orchid Conservation and Research Program had a successful year with the flowering of rare and endangered *Caladenia saggicola* as well as some other varieties. The Begonia Group also had a successful growing season with the result that some varieties are being displayed in the Conservatory.

Once again we participated in Seniors week during October and offered a free 1 hour walking tour each day. There were fewer visitors than in 2015 due to the inclement and unfavourable weather conditions during the week. The 2016-2017 Cruise ship season kept our Co-ordinator, Eileen Maskrey, and our dedicated team

of Tour Guides extremely busy. Tours started towards the end of October, peaked in January and continued on through February into March. Whilst the Princess Line continues to be the main supporter of our tours, two other companies tried us out this season. This year we also had some tours booked in June for a cruise ship visit to coincide with Dark Mofo. Thanks to Wendy Bowman for co-ordinating this in Eileen's absence. Another 'extra' this year was our participation in Epilepsy Month in March. One of the celebrations for this was a guided tour of Government House Gardens. A number of our Guides were recruited to assist and trained to lead a tour of the Gardens – an experience much enjoyed by all participants. All our Tour Guides need to be thanked for the many hours they have given – not only on Cruise ship days, but also for fulfilling the many other requests for booked tours. The season was capped off by a 'thank you' lunch for Guides, held in the Derwent Room of the Succulent Restaurant, organised by Eileen and funded by RTBG management. As a result of our busy visitor season it was deemed desirable to purchase a new Gardens Explorer vehicle. Richard Forcey and Chris Watts took on the responsibility of organising the research for this. Friends were intending to finance the purchase, but Damien Bugg – Chairman of the Board of Directors of RTBG – offered to purchase the buggy with funds accumulated from the monies set aside to pay the Chair. The buggy has been aptly named "Buggs Buggy".

Chris Watts continued his invaluable role as co-ordinator of the Visitor Services volunteers and the Explorer drivers. He has worked untiringly to ensure appropriate induction and training for these volunteers and good coverage in the 'Studio' (which in the next few weeks will transform into a bigger and more comfortable visitor information centre). Whilst Chris will continue to do the rostering and coordination of the Studio volunteers, he has stepped down from being their representative on our committee. We are hoping that he will still give us a brief run-down of activities involving members as volunteers in this area or recommend someone who can do this on his behalf.

The History Group has continued its research of Friends' and Gardens' history. Several interesting articles have appeared in *Fagus* and a new photographic display was mounted in the Cottage to reflect a snapshot of 100 years in the Gardens.

Fagus, under the editorial leadership of Mike Maskrey, continues to be an excellent and informative publication. Kay Hayes has taken over the role of compositor and is responsible for the overall layout of the magazine. Congratulations and thanks to both for their time and commitment which results in this professional publication. Thanks must also be given to staff of RTBG and our members who continue to provide their excellent contributions.

Our Financial support of the Gardens has continued. We were successful in our application for a National Resources Management Grant for \$5,000 for the Orchid Propagation Program and for another for \$3,500 for the same program. The Staff Scholarship was awarded to Jimmy Corrigan, a trainee at the Gardens, to study a 'Life in Soils' course. Jimmy has already given a presentation to staff at RTBG, has written an article for this edition of *Fagus*, and will give a short talk at our December General Meeting. We have also donated \$40,000 for the Lilypond viewing platform project and the redevelopment of the Sustainable Learning Centre.

The AGM in September was well attended. Our Guest speaker was Dr Nigel Swarts who gave a brief overview of the International Orchid Conservation Congress in Hong Kong and brought us up to date with what is happening here in our own conservation and research facility at RTBG. Equally well attended were our General meetings throughout the year. At these meetings we heard from Marcus Ragus - Californian flora, Chris Lang, curator of Tasmanian Flora - Tasmanian Native Grasslands, the species that comprise them, and relevant RTBG conservation programs and activities. Lorraine Perrins, curator of the Conservation Collection and sub-Antarctic flora left everyone wanting more after her talk 'From Garden City to City in a Garden'.

Our other activities over the last year have included:

- An excursion to Launceston for the inaugural Blooming Tasmania Flower Show
- An end of year lunch hosted by RTBG staff and management

- Assistance and on-ground support at the Carols by Candlelight event in the Gardens
- Assistance and support for Autumn in the Gardens event which culminated in a celebration for Peter Cundall's Birthday
- Participation in a forum to begin the process of the formation of a partnership agreement
- Participation in the Red Jelly RTBG Brand survey
- Participation in the RTBG Bicentenary Stakeholders Group meetings (Kay Hayes)

Training sessions for volunteers organised by Marcus Ragus.

One of our major concerns this year has been the need to form some sort of partnership agreement between RTBG, Friends and Volunteers. A discussion paper has been approved by the Board and a steering committee (3 members of RTBG management and 2 Friends' representatives) has met to create a Terms of Reference Document so that an Operational Working Group will have a framework for managing the volunteer programs, integrating Friends and volunteers into the operations of the Gardens and developing a budget to support the volunteer programs. This has been a lengthy process but has been necessary to accommodate changes occurring to bring RTBG operations into line with State Government Policy. This not only has implications for the Gardens, but also for how we operate and interact with RTBG and the Board in accordance with the State Act.

Friends were greatly saddened at the death of long time member Sally Dabner. Sally gave many years of devoted service to the Gardens and Friends, serving, at various times, in the roles of Vice-President, President, Secretary, Treasurer, Membership Officer and long-time editor of *Fagus*. Sally was a knowledgeable and enthusiastic Tour Guide and loved being involved in all Garden events and activities.

This year as President has been an interesting and busy one. My job would not have been possible without the support and assistance of an efficient and dedicated crew. Thank you all.

Joan Booth

PRESIDENT

Friends of the Royal Tasmanian Botanical Gardens

World First!

One of the World's most southerly growing orchids has flowered for the first time at the Royal Tasmanian Botanical Gardens



On the 13th September, after weeks of anticipation, the RTBG announced to the world, that a plant of the critically endangered Macquarie Island grooved helmet orchid (*Corybas sulcatus*) had produced a flower, making this event the first of its kind outside Macquarie Island.

The RTBG has never held a collection of this diminutive orchid until this year when Horticultural Botanist, Natalie Tapson, took the opportunity to collect some specimens whilst on Macquarie Island collecting seed for the RTBG's *Azorella macquariensis* (Macquarie cushion plant) Conservation Project and the Tasmanian Seed Conservation Centre (TSCC).

Corybas sulcatus (Grooved helmet-orchid) is one of two endemic orchids which occur on Macquarie Island. Listed as critically endangered, this small orchid that reaches just 1–2 cm in height and likes to grow in wet, boggy conditions.

Knowing the significance of this event, (that even for scientists working on Macquarie Island actually seeing

a grooved helmet orchid flower would be a once-in-a-lifetime event), we decided it was important to share this momentous occasion with the Tasmanian public. With the assistance of two of our marvellous volunteer guides, Ms Debbie Hinchin and Mr Peter Green, we were able to display the orchid in the visitors centre for an hour a day for 5 days. The interest was such that over 200 people turned up for the viewings, many returning later with their cameras and tripods.

As many Friends will be aware, orchid seed cannot be successfully germinated unless it is inoculated with a specific mycorrhizae fungus. This is why Natalie collected tubers of this species and these plants will be analysed by the RTBG's Native Orchid Conservation and Research Program to determine the mycorrhizal fungi associations for this species. Once these mycorrhizae can be isolated and cultivated on agar, seed collections can be stored at the TSCC for this species.

For more information about the TSCC or the Native Orchid Conservation and Research programs go to -

<http://gardens.rtbg.tas.gov.au/science-research/orchid-conservation-and-the-rtbg/>

Lorraine Perrins



***Corybas sulcatus* (Grooved helmet-orchid) is one of two endemic orchids which occur on Macquarie Island (Photo: T.Rudman)**



'Tasmania is My Garden'

The 2017 Blooming Tasmania Flower & Garden Festival

Connecting Heritages, Journeys, Passion, Inspiration and Expertise

The 2017 Blooming Flower & Garden Festival is over for another year with the next dates already in place for next year, all of the Albert Hall exhibitors wanting to return, and a waiting list already emerging!

The two week State wide Festival began in the North West of the State, at the Tasmanian Arboretum, with the launch of a State wide bird trail, a stunning "Birds in Gardens" Photographic Exhibition, talks and guided bird walks. The Festival culminated on the East Coast with the Triabunna opening at The Village, of the exhibition, Port Arthur - An Exotic Garden, featuring botanical paintings and drawings of medicinal, culinary and industrial plants of early Port Arthur by members of Botanico.

This year all booths were sold out for the main event in the Albert Hall and beautiful City Park in Launceston. In the Hall was a huge variety of specialist growers, nurseries, gardening and botanical products, garden sculptures, gardening associations and training bodies from across the State with the "Sleeping Beauty" installation on the stage (*pictured*), one of the highlights of the Festival.

There was a larger number of exhibitors, food and coffee stands outside, music and workshops in The Conservatory and a shuttle bus to Inveresk and the Queen Victoria Museum and Art Gallery. Chris Wisbey and Peter Cundall broadcast the ABC Saturday morning Gardening Program from the Albert Hall, interviewing exhibitors and taking questions from the many gathered around the ABC booth. The Blooming Tasmania Gardening Q & A stand was very popular with well-known and respected gardening personalities volunteering to man the stand throughout the weekend.

A diverse program of speakers, workshops and a botanical artist enhanced the Event. A weekend of rain challenged those with stands outside, not to mention an unexpected evacuation, into the rain, when the Fire alarm was activated two minutes after the ABC program had finished on the Saturday morning!



Blooming Tasmania, as a not for profit volunteer organisation, is supported by an amazing team of volunteers across the State, who with help from our major sponsor, Bridestowe Lavender Estate, funding from the State Government through Events Tasmania and a community grant from the Launceston City Council all helped make this event a great success.

Save the Date for the 2018 Blooming Tasmania Flower & Garden Show. The Albert Hall is booked for the 22nd & 23rd September – we'd love to see you there!

Jane Tenniswood

Chair, Blooming Tasmania

PO Box 96, Triabunna 7190

Email windsong@skymesh.com.au

Phone 03 62577583

A Garden for “Respectable” Persons

In the five years between the sacking of Tobin in December 1840 and the appointment of Francis Newman in 1846 there were three superintendents/overseers of the Government Gardens.

Andrew Herbertson was appointed in 1841. In June of that year *The Courier* reported that the cost of managing the Gardens for the previous year had been £820 which was a "shameful and scandalous abuse of public money..." and that it was disgraceful that the horticulture of about 20 acres of land should cost so much. They went on to suggest that in future His Excellency should "try the expense of the Garden by contract.

The Census of 1842 records Herbertson to be a single man who came free to the Colony and a Scotsman under 45 years old. His occupation was listed as a gardener at the Government Garden who lived in the Stone Cottage on site and his Salary was £150 pa. So why was Herbertson appointed? As subsequent records show Herbertson was a very competent gardener/horticulturist and was accepted as a member of the Horticultural Society. He won many prizes at the biennial shows, including for Black Grapes, the Best Melon, Almonds, Native Seeds and Turnips. He continued to participate in the Horticultural Shows after he left the Gardens and in 1851 was elected as a member of the Society. During this period the Gardens were still basically a place of food production and acclimatisation. Lady Franklin records that she often walked to the Gardens but apart from asking Gunn to get his gang of boys to clear the wattle trees along the road and complaining about the lack of vegetables available for Government House she makes little mention of them. Herbertson was still at the Gardens in November 1843 as he was responsible for the tasteful decorations at a Government House Ball where the ballroom was decorated with "flowers and horticultural embellishments, while festoons of evergreens and flowers were suspended from pillar to pillar..." There was also a crown of red and white roses. In August 1843 the Lt-Gov. Sir John Franklin left the Colony to be succeeded by Sir Eardley-Wilmot. Eardley-Wilmot was a Barrister, JP, and member of Parliament. In 1821 he was created a Baronet. and elected a

fellow of the Royal Society, the Society of Antiquaries and a Fellow of the Linnaean Society of London. He was also the first Lt-Gov. coming from a Civil/Legal background (rather than Military or Naval) to be appointed to the position. His appointment was looked upon with great expectations; his qualifications and membership of scientific societies was reported as "an honour which (was) never conferred but upon eminent persons."

Many members of the public were soon angered and disappointed by Eardley- Wilmot's brief, as reported in the Colonial Times.

"In my arrangements, under instructions from the Secretary of State, I have determined upon giving up the greater part of the land hitherto called ... The Colonial Gardens reserving only such a portion as I deem essential for... Government House. That portion which I do not reserve ... to devote, under proper restrictions, to the recreation and benefit of the Public ... I have formed a Society for the promotion of Science, which shall make Botany and Horticulture two of its objects ... To this Society... will be confided the care and cultivation of the Garden. It is not intended that it should be wholly supported by the Government; as I anticipate that the scheme will be ... aided by private contributions from the Members who will pay an annual subscription, as well as a small sum on admission." In order to achieve this rearrangement, Eardley-Wilmot authorised the building of the second iconic brick wall in the Gardens

Eardley Wilmot Wall showing the division of the Government Vegetable Garden Gov. House in the background. around 1860



on the eastern side. A portion of this wall divides the vegetable garden between what is now Government House and the Botanical Gardens.

The Colonial Times responded with a scathing article "In the more palmy days of the Colony the tired townsman was able to stroll with his loving spouse and his elder children into the Government apple garden ... and regale his eyes with some of the more homely beauties of horticulture ... it was "a healthy recreation from the toils and care of money getting ..." and the writer bemoaned the loss of "free institutions". It reported that Eardley-Wilmot's orders were "to let" the Domain and Garden to a scientific Society who would permit "respectable persons" to view upon payment. Besides contending that there was nothing in the Government Garden worth paying for, they held that it would be acceptable were there some attempt to advance botanical or horticultural science.

Probably early in 1844 George Grant replaced Herbertson. Grant was a well-known artisan in Hobart, a stonemason, also known in horticultural circles. In 1840 he won £5 for the neatest kept Cottage and Garden and also a prize for a Cinnamon Tree.

In September 1844 a description of the Royal Society Garden appeared in the *True Colonist*. "The entrance for Visitors was at the corner, nearest to the magnetic observatory where a new door appears to have been hung with a sort of square wooden porch inside into which, on ringing a bell, we were admitted by the superintendent of the Royal Society Garden, Mr George Grant. The following description of the Gardens is far from complimentary. First there was the "abrogation of the shilling admission fee." Further comments followed. The gardens presented with a naked appearance due to the removal of fruit trees; the melon and cucumber frames were occupied by native plants; the Hothouse had been converted into a Conservatory by the removal of the stove; and the New Zealand flax has been removed from the place where it originally flourished "to a place where it is stunted, neglected, and withering away." The article concludes with the conviction that "the institution, properly managed, must produce great

good to the colony; but we have hitherto been unable to discover any defined method for its management..."

Despite these criticisms, Grant was a successful exhibitor at the Horticultural Show in December 1844 receiving several prizes for his presentation of flowers and a new variety of liliium.

The Cottage round about 1865



Further changes followed in 1845. A small two roomed Cottage was built at the northern end of the Arthur Wall for the Superintendent, as the superintendent's house was needed by the Secretary of the Royal Society, and for Meetings However, the next Superintendent, James Dickinson was well established in town and since it was built the Cottage has been used for a variety of purposes.

Jenny Parrott

References:

Leonie Mickleborough - Eardley-Wilmot Newspapers - mostly the Courier and Colonial Times.

PS: Herbertson was committed to the lunatic asylum in 1858 as his wife applied to have the licence for the Restdown Inn transferred to her on those grounds. He died at his son's house 10 years later at Grass Tree Hill. 1868.

Dickinson was an emancipated convict with strong Quaker connections.

Delving Deeper into Soil

I am now approaching the end of my two-year traineeship at the RTBG and when I look back at the wide variety of opportunities I have had to study, learn about and practice horticulture throughout that time, I feel very lucky.

The range of experience and expertise within the staff and volunteers at the RTBG cannot be overstated and it must rank as one of the best places to undertake horticultural training in the country.

Over the course of my traineeship I developed a real interest in soil – as a horticulturalist nothing seemed more important to me than gaining a deep understanding of what is going on in the soil and how this relates to plant health. As I started to learn more I began to realise that it is all about the biology – the soil ecosystem beneath our feet.

Thanks to financial support of the Friends of the Royal Tasmanian Botanical Gardens I was able to enrol on the online course 'Life in the Soil', run by world-renowned soil microbiologist Dr Elaine Ingham. Ingham has been researching soil microbiology for over 25 years; having received her PhD in 1981 and has published over 50 articles in refereed journals.

The course focuses on understanding and applying the principles of the 'Soil Food Web', which is defined as the

community of organisms living all or part of their lives in the soil.

The Soil Food Web describes a complex living ecosystem in the soil and how this interacts with the environment, plants, and animals. These organisms include earthworms, nematodes, protozoa, fungi, bacteria and different insects.

The decomposition of organic matter by soil organisms has an immense influence on soil fertility, plant growth, soil structure, and carbon storage.

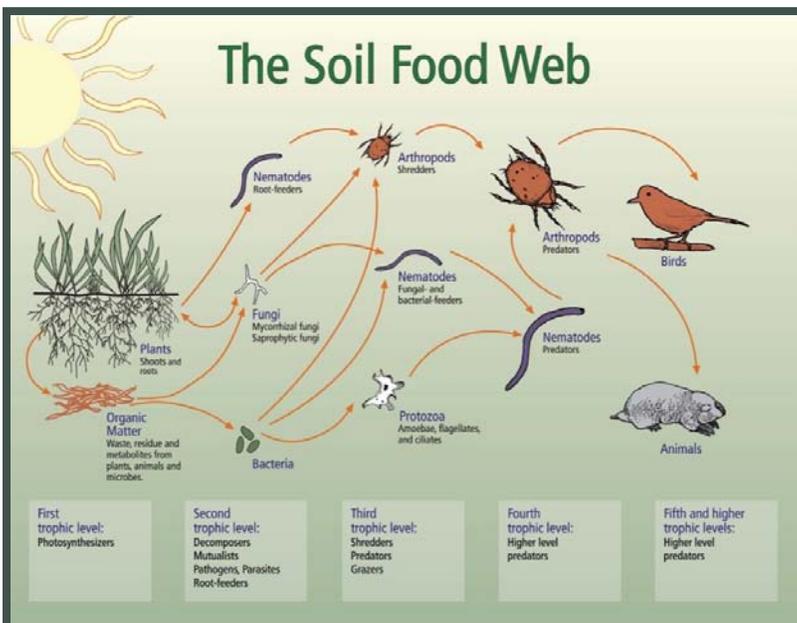
To put this micro-world into perspective - *'One handful of good garden soil can contain more organisms than the number of human beings who have ever lived: 1 trillion bacteria, 10,000 protozoa, 10,000 nematodes and 25 km of fungi'* Young and Crawford, *Science magazine*.

In simple terms the basis of what Ingham teaches in *Life in the Soil*, boils down to this: plants *nurture* a whole world of creatures in the soil that in return feed and protect the plant.

Most gardeners tend to think of plants as only taking up nutrients through root systems and feeding the leaves – but few realise that a great deal of the energy that results from photosynthesis in the leaves is actually used by plants to produce exudates (carbohydrates and proteins) that attract and grow specific beneficial bacteria and fungi. These fungi and bacteria form the basis of the 'soil food web' which builds structure in the soil, controls disease and 'cycles' nutrients around the root zone, making them available to the plant.

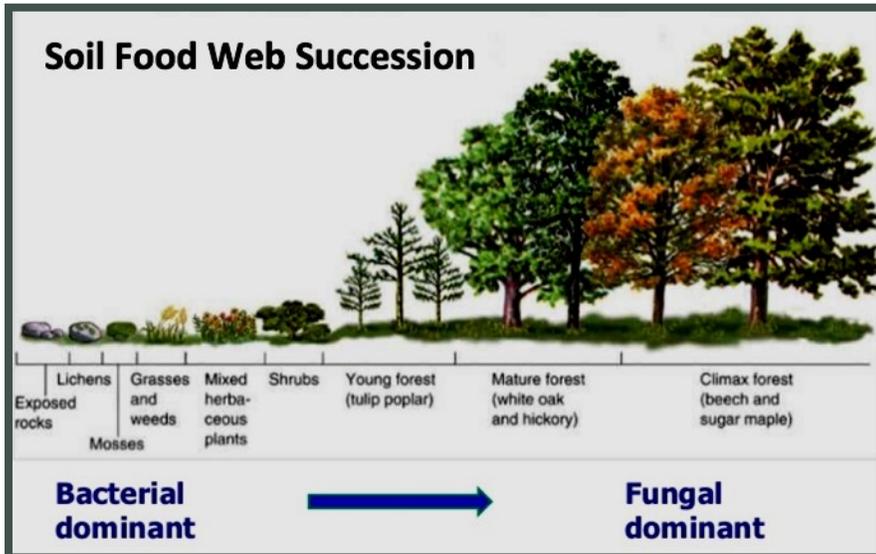
And that is the big shift in thinking away from a traditional soil chemistry approach – the emerging soil microbiology research is demonstrating that these billions of living organisms are continuously at work, creating soil structure, producing nutrients and building defence systems against disease.

In fact, it has been shown that the health of the soil community the key factor in determining the health of our plants, our food and our bodies.



Another significant concept that came out of the course is the principle of ecological succession. Different plant communities require different ratios of fungi to bacteria in the soil. The fungi to bacteria ratio determines a whole cascade of different conditions (pH, forms of nitrogen that dominate etc), that support the growth of specific plant groups.

- Compost can be used to inoculate beneficial microbes and life into soils and introduce, maintain, or alter the soil food web in a particular area. The compost should have high species diversity. Not just bacteria but fungi, protozoa, nematodes and microarthropods, as well as organic matter for them to feed on.



Bacteria dominate in early succession communities such as bare earth, and weeds, then shifts towards increasing fungal biomass in grasses and vegetables. For pasture and most agricultural crops, fungi and bacteria are in equal balance. Late succession communities such as perennial shrubs and trees are dominated by fungi.

By knowing the bacteria/fungal ratio for the plant you're trying to grow, you can employ different practices to encourage one or the other. Tilling or digging, for example, favours bacteria over fungi.

Ingham's research shows that significant gains in plant health can be made by applying compost or compost tea extracts with the right balance of fungi to bacteria and a high diversity of species from all levels of the soil food web:

- Some plants prefer soils dominated by fungi, others bacteria.
- Most veggies, annuals and grasses prefer nitrogen in nitrate form and do best in bacterially dominated soils
- Most trees, shrubs and perennials prefer their nitrogen in ammonium form and do best in fungal dominated soils

- You can control the fungi-to-bacteria ratio of the compost by the raw materials you start with, and by your methods. Frequent turning, for example favors bacteria, since every time you turn a compost pile you "slice and dice" the fungal hyphae.

The implications of a deeper understanding of these biological processes are far-reaching. Soil microbes play a vital role in sequestering carbon from the atmosphere and global soils already hold three times as much carbon as exists in the atmosphere, and there's room for much more. According to a recent study in Nature, enhanced carbon storage in the world's farmland soils could reduce greenhouse gas concentrations by between 50 and 80%.

As for me – delving deeper into the microbial world of soils has been fascinating and inspired me to keep on learning. I'm keen to continue my studies in this area and implement some trials of these methods at the RTBG – so watch this space! Thanks again to the Friends for this opportunity.

Jimmy Corrigan

RTBG Trainee and Friends Scholar



Seed Harvest Success from the Far South!

This time last year RTBG nursery staff were busy packaging and transporting materials to the Australian Antarctic Division's headquarters at Kingston to be inspected and subsequently shipped down to Macquarie Island for the summer season. Forceps, 30 kilos of silica gel dessicant, air-tight containers, drying trays, cloth bags and plant presses were all bundled up and sent south as part of our *Azorella macquariensis* Conservation Program, which has been running, supported by the Tasmanian Parks and Wildlife Service (TASPAWS) and the Australian Antarctic Division (AAD) since 2009.

When Natalie Tapson (RTBG Horticultural Botanist) expanded the on-island *Azorella macquariensis* seed orchard, (which is situated on Wireless Hill, Macquarie Island), in 2013 it was always intended that a seed harvest would be made from these 54 plants and also from the remaining healthy populations across the island to be conserved in the Tasmanian Seed Conservation Centre (TSCC) at the RTBG.

In 2016 the RTBG was successful in gaining a placement and support on Macquarie Island from the Australian Antarctic Division for Natalie to return for the summer season. Having Natalie based on the island for the summer period meant that she was also be able to monitor and harvest seed from the other plant species not held in the TSCC, ensuring that the RTBG works towards securing the plant diversity of the entire island's flora.

With a temperature range between 3-8°C during summer, constant wind at around 25km/hr, regular wind gusts of up to 170km/hr, and rain and snow showers frequent, the task of harvesting tiny seeds in the "furious fifties" latitude is not for the faint hearted! Seed collection from many of the species on the Island involved crouching over the plants and individually picking out the small seeds with forceps, often for hours on end. Hypothermia is a very real risk under these conditions, and one Nat was acutely aware of.



Friends of the RTBG reading this who also volunteer in the TSCC would be aware of the importance of being able to clean and dry seed down appropriately before storage. In order to minimise viability loss in the seed before its return to Hobart, it was imperative that Natalie cleaned any debris or pulp from the seeds and dried them down sufficiently in a cool environment. The silica gel dessicant and sealed plastic drums were used for this purpose and worked very well.

As is typical for members of the carrot family (*Apiaceae*) the diminutive flowers of *Azorella* produce a maximum of 2 seeds each and these ripen during March and April. During the station's annual resupply, accommodation on the Island is at a premium, which led to Natalie being accommodated on the icebreaker *Aurora Australis*, with day trips ashore in the later part of her time. Added to this was the concern that some seed may not have ripened fully for harvesting. This was alleviated through

using a technique of keeping the collections of nearly ripe seed slightly moist, but well aerated during the transportation. Once back at the TSCC they were transferred into humidity boxes to complete the ripening process before being dried down for storage.

The number of seeds considered to be a good, long term, conservation collection in a seedbank is typically 10,000 from a minimum of 50 individuals. With a concerted effort, (on one occasion consisting of 5 hours of continual surgical-like seed plucking!) just over

4,000 seeds from 365 individual *Azorella macquariensis* plants were harvested, an impressive result given the difficulties of the job and time constraints.

As well as harvesting *Azorella* seed Natalie was also able to collect 12 other species during her summer on Macquarie Island amounting to a staggering 562,131 seeds in total. Many of these species had never been harvested from seed before and work on their germination requirements will commence in the near future.

Additionally Nat also made collections for the RTBG's Native Orchid Conservation and Research Program (see Article in this issue of Fagus on *Corybas sultactus*) as well as soil collections for an international program assessing global soil fungi distribution.

The 'captive specimens' of *Azorella macquariensis* in our Macquarie Island seed orchard will remain closely monitored over the next few years and continue to be maintained as a conservation collection, effectively 'buying time', whilst further research is being conducted for the future preservation of this species. The seed collections will be stored in the TSCC as a back-up conservation collection and research into the germination requirements for each species harvested conducted.

For more information go to - <http://gardens.rtbg.tas.gov.au/azorella-macquariensis/>

The Royal Tasmanian Botanical Gardens would like to acknowledge the Australian Antarctic Division for the ongoing support of this program.

Lorraine Perrins and Natalie Tapson



Left: Natalie Tapson collecting seed from *A. macquariensis* on the Central Plateau

Above: Natalie collecting *Coprosma perpusilla* berries

Above Right: Tedious work collecting *Colobanthus apetalus* var. *alpinus*

Centre Right: Natalie surveying for seed harvests

Bottom Right: One very happy Seed Bank Manager (James Wood) with safely returned seed packages

A Rare Day Out

Celebrating Rare and Threatened Species Day

Thursday, September 7th marked Rare and Threatened Species Day. This was celebrated in the gardens by a series of informative tours and talks organised by Marcus Ragus and made available to Friends, volunteers and the general public. The day kicked off mid-morning with Native Plant Curator Chris Lang. Chris introducing us to some gems and rarities in the Tasmanian plant section of the garden (*Image 1*). We were reminded that Tasmania has about 530 endemic species, many of which are threatened. Later in the morning, Senior Horticulturist Megan Marrison took us through the Gondwana section of the garden to look at species that display botanical links between Tasmania and the continents and islands that were once joined in the ancient Gondwana landmass (*Image 2*).

After a short break for lunch, during which the weather took a turn for the worse and rain set in, the afternoon session began with Team Leader David Marrison taking us to the far reaches of the gardens to show us the east coast flora, where he introduced us to areas of plant diversity that constitute important rare and threatened plant hotspot (*Image 3*).

Later on that afternoon, Curator of Conservation Lorraine Perrins explained how the RTBG's conservation programmes are being assisted by horticultural practices within the gardens (*Image 4*). Much of the discussion centred on the Seed Orchard which exists to grow plants that provide seed for the RTBG Seed Bank. Lorraine described some of the problems involved in providing sufficient seed from some of the rarer species. The day's programme ended sheltered from the rain in the staff area where Horticultural Botanist Natalie Tapson presented a talk and slide show that explained the RTBG's recent plant conservation activities on Macquarie Island, especially relating to the endemic cushion plant, *Azorella*.

Despite the sometimes challenging weather, the tours and talks proved a great success, providing valuable information and insights for Friends, volunteers and the public who attended. Thanks are due to all the staff that took part and to Marcus for organising the programme and providing the opportunity to participate.



Image 2



Image 3



Image 1



Image 4

Behind the Wall

Exploring the Lydiard Park Walled Garden

Lydiard Park occupies a 105 hectare area on the western edge of the town of Swindon in Wiltshire, U.K. The park is a huge favourite for tourists and also for local families and dog walkers. It consists of wide expanses of woodland and meadow and contains within its boundaries a lake, a Palladian style manor house, a parish church and a walled garden.

The walled garden was created in 1740 for the then occupants of Lydiard House, the St John family. The purpose of the garden was to grow flowers and fruit, as well as to provide a pleasant place for the family to stroll after dinner. With the gradual decline of the once grand St John estate, the garden fell into disuse and by the end of the 20th century was essentially derelict. As part of the Lydiard Park project, supported by the Heritage Lottery Fund, the garden was fully restored and opened to the public in 2007.



wide pathways with a well and sundial. The narrow beds contain trimmed shrubs and perennial plants, alternating with individual flowers and bulbs. Along the walls and in the centre of flowerbeds are trained apple, pear, greengage, peach, plum, cherry, apricot and fig trees. The Lydiard Park Gardening Team use traditional, organic methods to tend and maintain the plants. The garden is a haven for wildlife, attracting garden birds, butterflies and bees.

We visited the Lydiard Park Walled Garden in early June. Unfortunately, the English weather was not at its kindest! It was bitterly cold with frequent squalls of rain. Despite this, the magic of the garden was not to be denied and wandering along the gravel pathways took us back in time to a less hurried age. It is hoped that the accompanying photographs provide some measure of the beauty and calm experienced 'behind the wall'.



In the restoration of the walled garden, every effort was made to remain faithful to the original plans. The garden was replanted using historic varieties noted in letters from the period, as well as varieties recorded from similar gardens from the mid 18th century. Both sides of the walls were used for trained plants, though the outer or 'slip' garden has been replaced with traditional 19th century fruit trees.

Today the original Georgian garden structure can be appreciated. The garden is divided into six sections with



Favourite Garden Icon

Number 7—The Chinese Guardian Lions



The editor's three and a half year old grandson is included to provide scale!

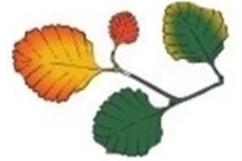
The Chinese section of the RTBG was established in 1996 based on plants raised from a seed collecting expedition by then acting director, Jim Cane in 1992, carried out in Yunnan Province near the Tibetan border. These original plants were augmented by wild collected specimens donated by Melbourne Royal Botanic Gardens.

The two Chinese stone guardian lions stand across the pathway from the Chinese Collection and face the gardens with their backs to the Pinetum. Thus, in the strictest sense, they could be described as overlooking the Chinese garden rather than guarding it as such. The two stone figures are each about 1.3 metres high and stand about 2.5 metres apart. Although both have manes, they are described as male and female (representing *yin* and *yang*). The male holds a ball beneath his right paw. The female holds a lion cub beneath her left paw. Correct observance of *Feng Shui* suggests that the female should

be placed on the left and the male on the right as viewed from their fronts, whereas the stone lions in the RTBG are reversed in position.

Rather like the Anniversary Arch (Favourite Icon number 3) the stone lions had a previous history before making their appearance in the RTBG. They once adorned the Chinese Banquet Hall at Hadley's Oriental Hotel in Murray Street. When the venture went bankrupt, the owners were looking to 'rehome' them. This happened to coincide with the Friends Propagation and Cottage Project winning a \$5,000 National Bank Community Link Award in 2000 as State Finalist in the Environment, Conservation and Heritage section. The trophy resides in the Cottage, and as a result of the monetary award, the lions moved to the gardens in 2003.

Thanks are due to Jenny Parrott and Christine Santi who each provided invaluable information for this article.



2017 Guides Conference in Canberra

The 2017 meeting for volunteer guides in Australian and New Zealand Botanic Gardens was hosted by the Australian National Botanic Gardens, Canberra from 16th to 19th October. Three Friends who are guides attended the Conference. A full report of the conference will appear in the next issue of *Fagus*.



Friends at the Canberra conference: Alison Mackirdy, Louise Rainbow (official RTBG delegate) and Eileen Maskrey

December General Meeting

The final General Meeting for 2017 will be held in the Banksia Room, RTBG, on **Saturday December 2nd**, commencing at 10am. The Guest Speakers for the Meeting will be Jimmy Corrigan, receiver of a Friends Scholarship (see his article on page xx) and Tory Ross (Marketing and Promotions Manager for the RTBG).

The **General Meeting Dates for 2018** are as follows:

March 17th

June 16th

September 15th (AGM)

December 8th

We hope for good attendances at all the meetings.

Membership

If you know of anyone wishing to join Friends of the RTBG, they can obtain an Application form by going to the RTBG website (gardens.rtbg.tas.gov.au). The link taking them to Friends of RTBG can be made from the drop down menu under 'Community'.

Alternatively contact our Membership Officer, Aina Dambitis (0429 190784)

Please note that if you are not recorded as having paid your Membership dues for 2017-18, you will no longer be receiving *Fagus* beyond this issue.

Our Next Issue: February 2018